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EUREKA-ATRコードによるATR実証炉の起動時制御棒引抜事象解析

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EUREKA-ATRコードによるATR実証炉の起動時制御棒引抜事象解析

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要　旨

EUREKA-ATRコードは、新型転換炉において、炉心内の出力分布や冷却材ボイド率分布の空間依存性を考慮できるように開発された3次元動特性解析コードである。平成2年度は、本コード用いてSPERT-Ⅲ・E炉心反応度投入実験及び「ふげん」再循環ポンプ切換時出力変化実験の2種の実験解析を行い、その計算精度と適用性を確認した。平成3年度は、ATR実証炉の反応度投入事象に対する本コードの適用性を確認するため、低温低出力時の起動時制御棒引抜き事象に関する解析を実施した。

実証炉の安全解析コードとしての適用性を確認する観点から、起動時制御棒引抜き事象のうちイベントシーケンスと半定量的な発生頻度を考慮して、設計基準事象（DBE）及び「幾分DBEを超える想定」の範囲に含まれる事象（BDBE）からそれぞれ代表的解析ケースを選定して事例解析を行った。各ケースについて3次元及び1点近似解析を実施し、設計に使用した1点近似解析の妥当性を評価した。また、実証炉の安全解析に関する幅広い事象への対応として、EUREKA-ATRコードの基本的解析手法を整備するため、投入反応度またはその他の結果に影響を与えると考えられる幾つかのパラメータについて感度解析を行った。

EUREKA-ATRコードを用いて、ATR実証炉の最大反応度投入事象である起動時における制御棒引抜き事象（低温低出力時）を固有のシステム設計条件を含めて解析した結果、以下の結論が得られた。

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*　技術開発部　新型転換炉実証炉技術評価グループ

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(1) 設計基準事象（ＤＢＥ）における解析結果が物理的にみて妥当な挙動を示すものと考えられることから、ＡＴＲ実証炉の安全解析コードとしてのＥＵＲＥＫＡ-ＡＴＲコードの、起動時における制御棒引抜き事象解析への適用性を確認した。

(2) 「幾分ＤＢＥを超える想定」の範囲に含まれる事象（ＢＤＢＥ）における解析結果が物理的にみて妥当な挙動を示すものと考えられることから、ＥＵＲＥＫＡ-ＡＴＲコードの、起動時における制御棒引抜き事象の事例解析への適用性を確認した。

(3) ＥＵＲＥＫＡ-ＡＴＲコードを用いたＳＰＥＲＴ-Ⅲ・Ｅ及び「ふげん」各炉心の実験解析で確立した基本的解析モデルが、起動時における制御棒引抜き事象にも適用できることを確認した。

(4) ＡＴＲ実証炉の起動時における制御棒引抜き事象の安全評価の観点から１点近似解析手法を検討した結果、１点近似解析では出力ピーキング係数が大きい出力分布に設定し、また低い反応度投入率及び負側の反応度係数を設定することにより、解析結果（燃料エンタルピー、反応度等）を３次元解析結果より過大に評価できることを確認した。

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Control Rods Withdrawal Event Analysis at Cold Start-up State of Demonstration Type Advanced Thermal Reactor by EUREKA-ATR code

Yasuki Kowata* and Toshio Wakabayashi**

EUREKA-ATR code is three dimensional thermal hydrodynamics kinetic code which is able to consider the dependence of space and time on power distribution and the coolant void fraction. Caluculational accuracy and applicability of this code was confirmed by two kinds of experimental analyses for the reactivity insertion experiments in SPERT-Ⅲ・E core and measurement of power change by the change of recirculation pump speed (low → high) in FUGEN. Analyses of the events due to control rods withdrawal at cold start-up and small power state have been performed in order to confirm the applicability of EUREKA-ATR code for reactivity insertion event of ATR demonstration reactor.

At the point of view confirming the applicability as a safety analyses code for ATR demonstration reactor, the typical example cases are selected from the design basis event (DBE) and slightly beyond DBE (BDBE) by considering the event sequence and occurrence possibility of the event due to control rods withdrawal. One point approximation analyses together with three dimensional ones have been performed to confirm the availability. For the purpose of establishing the basic method in the safety analysis of ATR demonstration reactor, sensitivity analyses have been also performed about some parameters that would be influenced to insertion reactivity and other results.

As a results of analyses of the event due to control rods withdrawal at cold start-up state including the own system design condition of ATR demonstration reactor, followings are concluded.

(1) As it is considered that the analytical results for the DBE show the reasonable behavior physically, applicability of EUREKA-ATR code for analyses of the event due to control rods withdrawal was confirmed.

(2) As it is considered that the analytical results for the BDBE show the reasonable behavior physically, applicability of EUREKA-ATR code for the example event analysis due to control rods withdrawal was confirmed.

(3) It was confirmed that the basic analytical model which is established through experimental analyses for each core in SPERT-Ⅲ・E or "FUGEN" using EUREKA-ATR code was also available for the events due to control rods withdrawal at cold start-up state of ATR demonstration reactor.

(4) The availability of one point approximation analysis model was investigated from a view-point of safety evaluation for the event due to control rods withdrawal at cold start-up state of ATR demonstration reactor. It was confirmed that one point approximation analyses results (i.e, fuel enthalpy, reactivity, etc) overestimate than three dimensional analyses ones by setting power distribution with larger power peaking coefficient, lower reactivity insertion rate and more negative reactivity coefficient.

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* ATR Technology Development Assessment Group

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1. はじめに

昨年度に圧力管型原子炉の反応度投入事象について安全解析ができるコードとしてEUREKA-ATRコード[1]を選定し、SPERT炉心及び「ふげん」炉心を用いて、同コードの検証を行った[2]。

今年度は、EUREKA-ATRコードを用いて、昨年度に新型転換炉(ATR)実証炉の反応度投入事象として選定された起動時の制御棒引抜き事象に関する解析を行い、解析結果の物理的妥当性を評価することにより、同コードのATR実証炉安全解析への適用性を確認する。

また、本安全解析における基本的解析モデルの確立及び1点近似解析の妥当性の確認のため、投入反応度及びその他の解析結果に影響を与えると考えられる種々のパラメータについて感度解析を行う。この際、ATR実証炉に特有なプラント設計条件で、本事象解析における入力条件の相異が、燃料エンタルピー等の着目する評価結果へ及ぼす効果について定性的な知見も得る。

2. 新型転換炉実証炉の設計概要

2.1 炉心の仕様

新型転換炉(ATR)は、減速材として重水を、冷却材として軽水を用いる重水減速沸騰軽水冷却圧力管型原子炉である。ATR実証炉の原子炉本体構造図、概略総合系統図、取替炉心における燃料構成及び取替燃料の径方向･軸方向構成を図2.1～図2.4に示す。ATR実証炉の仕様をまとめて表2.1に示す。

ATR実証炉の仕様の概要は以下の通りである。

① 電気出力(発電端)は606MWe、原子炉熱出力は1930MWtである。

② 燃料にはウラン･プルトニウム混合酸化物(MOX)を使用し、クラスタ状の36本燃料集合体としている。集合体には数本のGd入り燃料棒を組み込み、軸方向にも富化度分布をもたせた多領域燃料を採用している。

③ 原子炉は616本の圧力管から構成されるチャンネル型である。

④ 原子炉冷却系は、それぞれ独立した2つの系統から構成されている。炉心内の全再循環流量は、両系統合わせて24500t/hである。

⑤ 制御棒には、原子炉停止を目的としたB_4Cからなる停止棒及び主に炉心の出力調整を行うステンレス鋼製の調整棒を採用している。

2.2 起動時の出力上昇方法

(1) 低温臨界までの出力上昇

ATR実証炉平衡炉心サイクル初期における停止棒引抜順序例(1/4炉心)を図2.5に示す。原子炉の出力上昇を開始するに当たり、原子炉の初期状態、即ち全ての制御棒が全挿入状態にあり、原子炉が未臨界にあることを確認する。また、初期ほう酸濃度を測定し、出力上昇開始時の初期ほう酸濃度が所定濃度と比べて不足の場合、所定濃度まで注入する(ただし、所定の濃度を超えた時は除去不可)。次に、まず、引抜きシーケンスに従い、最初に引抜く停止棒(約4本)を約50%引抜きとする。さらに、調整棒13本を50%引抜きとし、SURMにより未臨界を確認しながら、引き続き停止棒を引抜く。この時、停止棒が、引抜きシーケンスに従って引抜かれていることを監視する。最終的に所定の本数(起動時に異常な過渡事象が生じても炉心を未臨界にできる制御棒本数)以上、及び核加熱、出力上昇操作に必要な制御棒本数(核加熱、出力上昇時のフィードバック反応度を補償するために挿入する必要がある制御棒:温度上昇により投入される反応度が正の場合に必要)が引抜かれた状態であることを確認する。

この状態で、再度ほう酸濃度を確認し、不足時には注入、過剰時には除去する。ただし、ほう酸除去操作を実施しても、所定の本数の制御棒が引抜かれた状態でなければ、ほう酸の除去は阻止されるインターロックがついて

いる。

さらに、SURMにより低温臨界近接を確認しながら、停止棒を引抜きシーケンスに従って引抜きながら臨界近接し、低温臨界状態を達成する。

(2) 低温臨界状態から高温待機状態までの出力上昇

低温臨界状態達成後、核加熱を開始する。引き続き引抜きシーケンスに従って停止棒を引抜き、或は挿入し、中性子束及び冷却材温度上昇が原子炉運用上の制限値以下になる様に調整する(出力の上昇率は、ペリオドを確認することにより監視する)。

核加熱、出力上昇において引抜かれている制御棒本数は所定の本数以上であることを常に確認する。もし、引抜かれている制御棒本数が所定の本数以下になる場合は、出力上昇操作を中止し、制御棒を挿入して原子炉を停止する。そして、原子炉出力上昇に必要な制御棒本数を見直した後、起動操作を再開する。

(3) 高温待機状態以降の出力上昇

高温待機状態からは、停止棒を引抜きシーケンスに従って引抜き、蒸気ドラム水位に注意しつつ引き続き原子炉の出力を上昇させる。(この時の出力上昇率は、1%/min以下)。ここで、原子炉出力が20%以上の蒸気ドラム安定出力領域で停止棒が全引抜きされた場合は、ほう酸除去又は/及び調整棒の操作により、出力上昇させる。原子炉の出力が20~約30%において、出力制御方法を手動から自動へ切り替える(原子炉出力25%程度で自動に切り換えることが望ましい)。さらに、ほう酸濃度の除去、或は注入による調整により、停止棒の定格パターン(通常の停止棒は全引抜き)を形成する。ここで、出力はほぼ一定状態を保つ。以後、キセノンの蓄積、ほう酸の燃焼、停止棒の引抜きによる反応度変化は、調整棒の駆動による出力自動制御と、調整棒の位置自動修正機能により補償する。

キセノンの蓄積、ほう酸の燃焼他による補償を行った後、引き続き炉心反応度変化予測計算結果に基づくほう酸除去注入速度自動制御方式により出力上昇させる。PCIOMR開始出力*1において、PCIOMR適用時には、出力上昇速度を切り換え(出力上昇速度1%/min以下→y*1%/h以下)、PCIOMR非適用時*2は出力上昇速度を1%/min以下とし、定格出力を達成する。なお定格出力の達成後もキセノン濃度の変化、ほう酸燃焼などの炉心反応度変化があるため、ほう酸除去注入速度自動制御方式により定格出力を維持する。

*1　下記の出力上昇基準を考慮して、各炉心毎に設定する。なお、下記は最大線出力に関する基準であるので、これに各炉心の出力ピーキング係数などを考慮して、原子炉平均出力ベースの値に換算して適用する必要がある。

PCIOMR開始出力	; 40kW/m以下			BU ≦	5000
(最大線出力密度)	32kW/m以下	5000 ≦	BU ≦		13000
	27.9kW/m以下	13000 ≦	BU		
出力上昇速度	; 0.33kW/m/h以下			BU ≦	3000
	(0.341-4.17×10^{-6}BU)kW/m/h以下				
		3000 ≦	BU ≦		21500
	; (0.929-1.89×10^{-6}BU)kW/m/h以下				
		21500 ≦	BU		

ここで、BUは燃料要素平均燃焼度(MWd/t)

*2　例えば、すでにエンベロープが形成されている状態から、スクラム等により一旦原子炉を停止し、ここからエンベロープ有効期間内に再起動する場合。

表２．１　ＡＴＲ実証炉の基本仕様

項　目	値
原子炉	
発電機出力	６０６ MWe
原子炉熱出力	１９３０ MWｔ
有効炉心直径	６７２１ mm
有効炉心高さ	３７００ mm
燃料集合体数	６１６ 体
燃料集合体間隔	２４０ mm
燃料	
燃料要素数	３６ 本／集合体
ペレット直径	１２．４ mm
種類	ウラン・プルトニウム混合酸化物
平均核分裂物質割合（初装荷/取替）	約２．６／約３．３ ｗｔ％
炉心径方向の燃料内Ｐｕ富化度（内側／外側）	低富化／高富化
炉心軸方向の燃料内Ｐｕ富化度（上・下／中央）	高富化／低富化
Ｇｄ燃料装荷要素数（内側／外側）	３／４ 本
Ｇｄ濃度	
中央部燃料（内側／外側）	１．２／１．４ ｗｔ％
上下部燃料（内側／外側）	０．７／０．８ ｗｔ％
平均燃焼度(初装荷/取替)	約２００００/約３１０００ MWｄ／ｔ
冷却材	
種類	軽水
再循環流量	２４５００ ｔ／ｈ
再循環ループ数	２
減速材	
種類	重水
重水装荷量	３１０ m^3
制御系	
制御棒本数(停止棒/調整棒)	７６/１３ 本
制御材(停止棒/調整棒)	B_4C/ＳＵＳ３０４
起動用検出装置(ＳＵＲＭ)	８ 個
局部用出力検出装置（ＬＰＭ）	１７６個

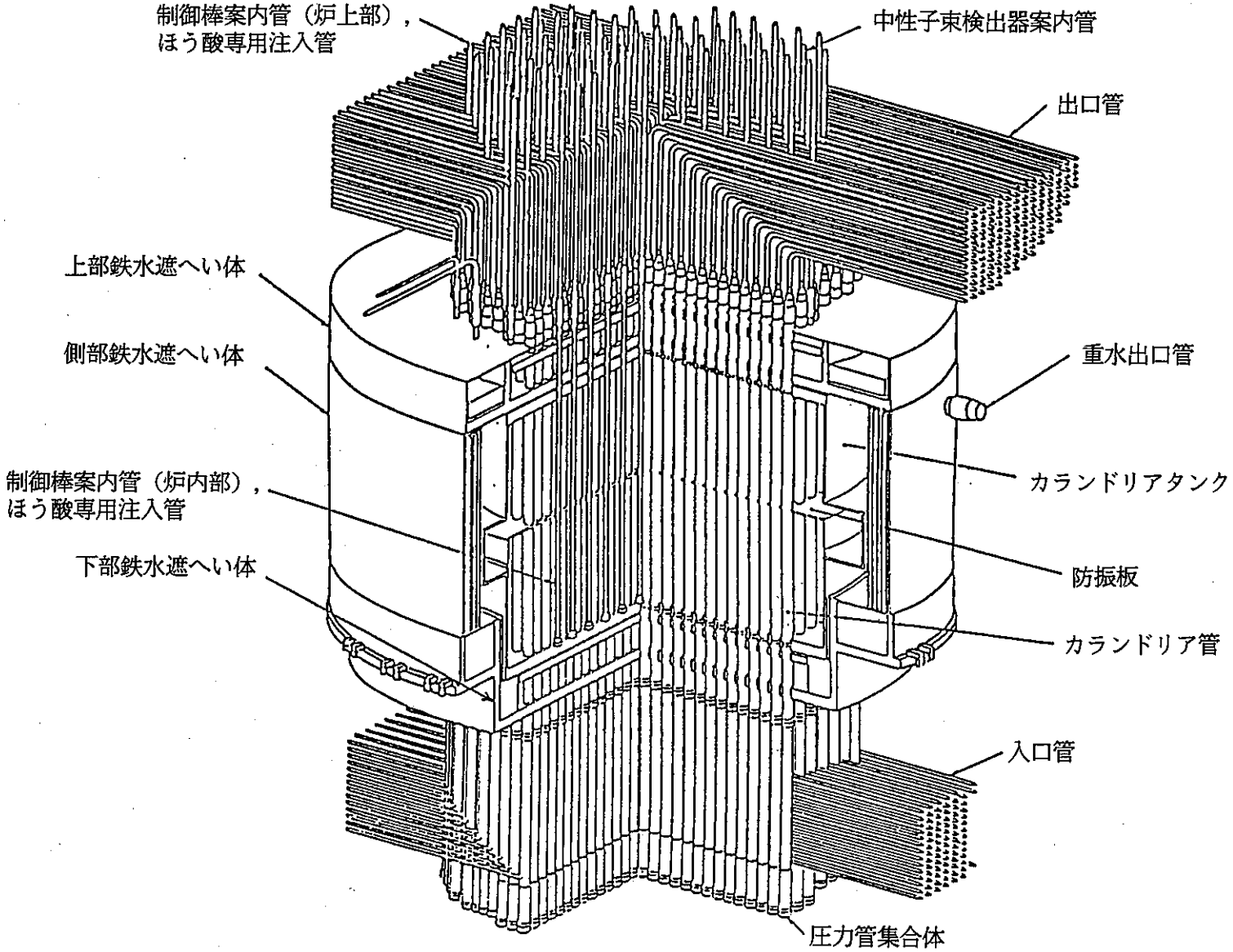


図2．1　ＡＴＲ実証炉原子炉本体構造図

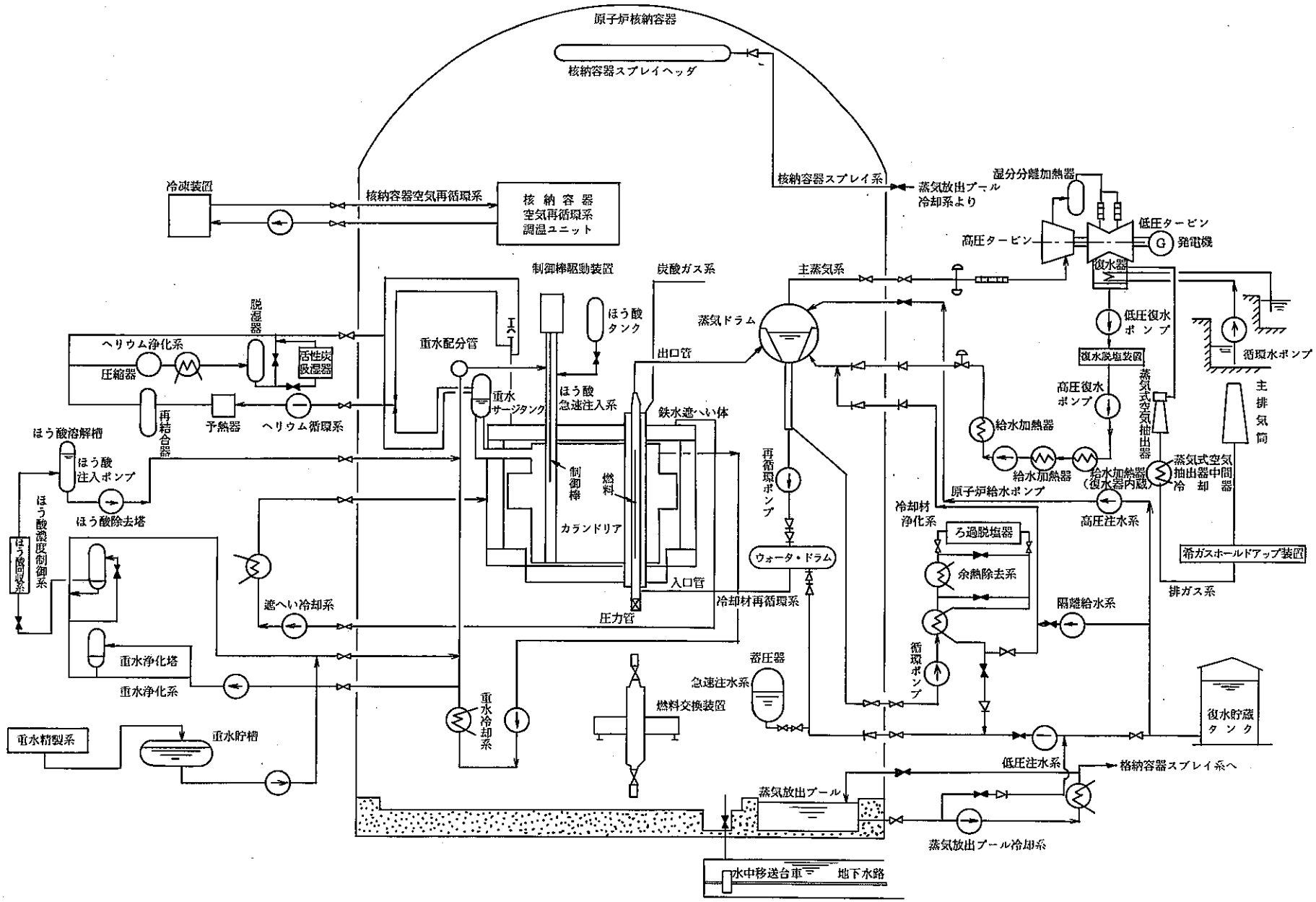


図2.2　ＡＴＲ実証炉総合系統図

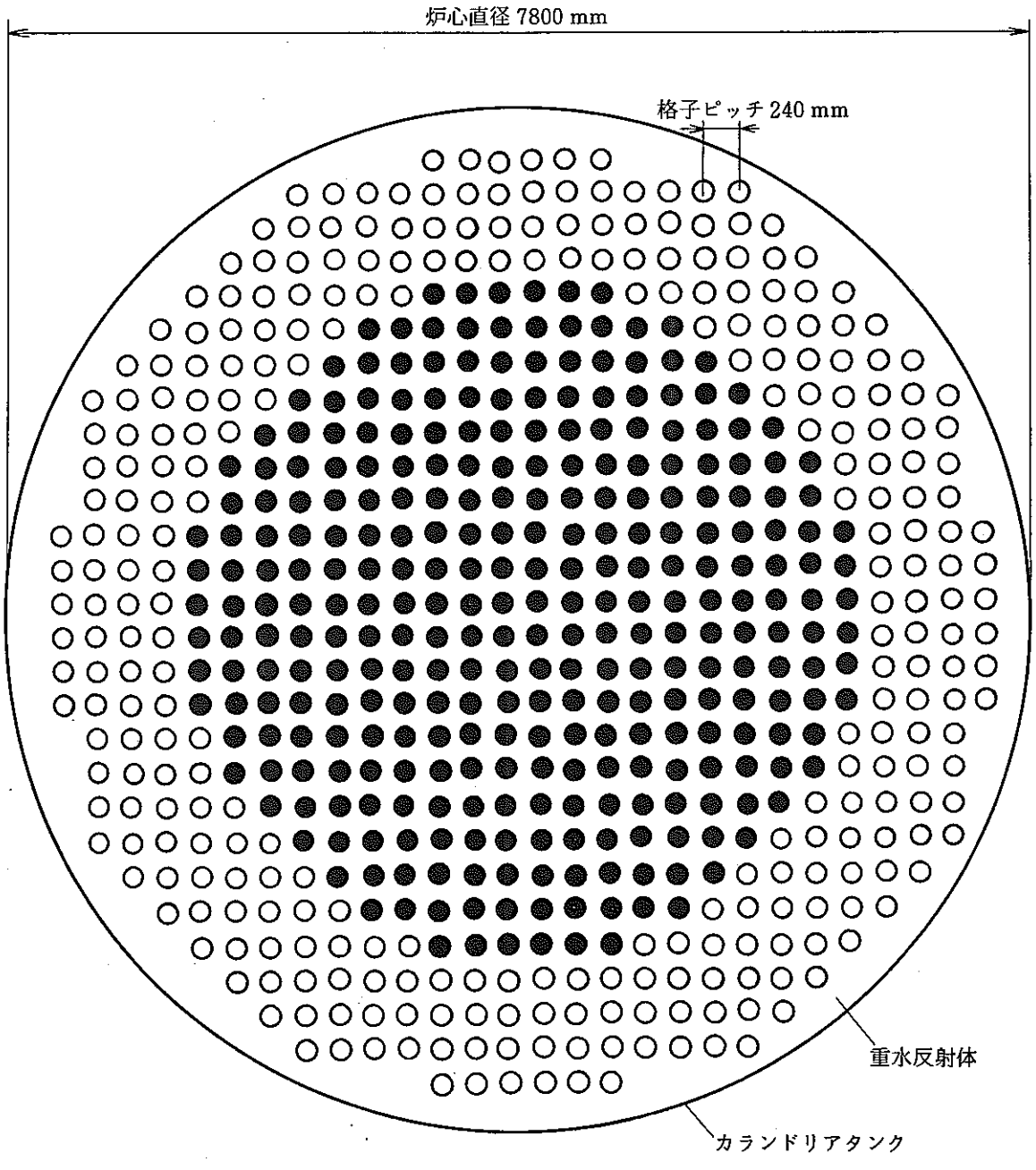
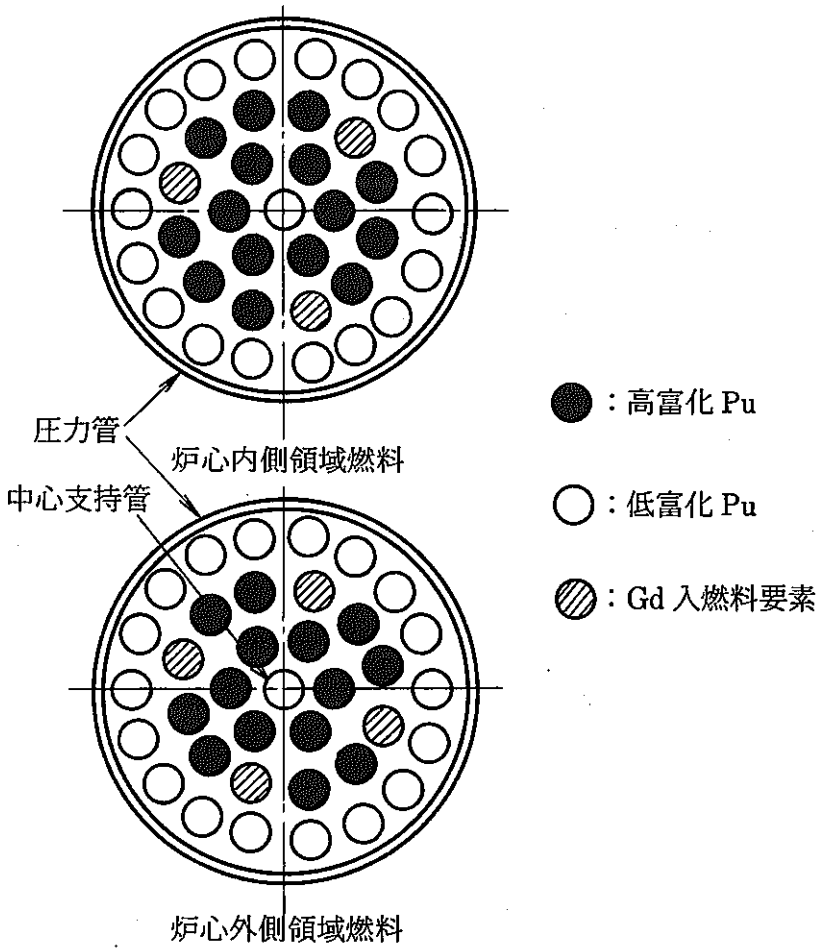
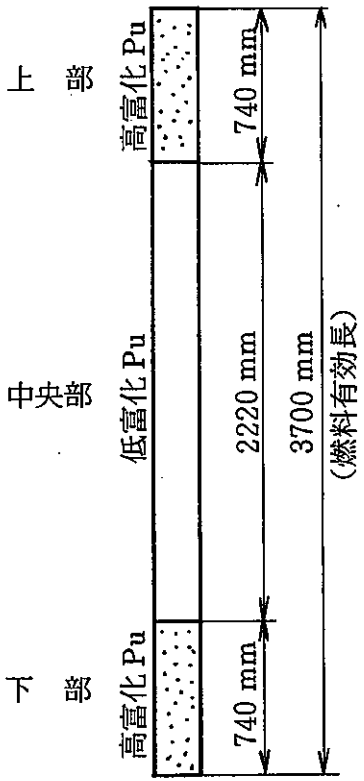


図 2. 3　ＡＴＲ実証炉の取替炉心における燃料構成

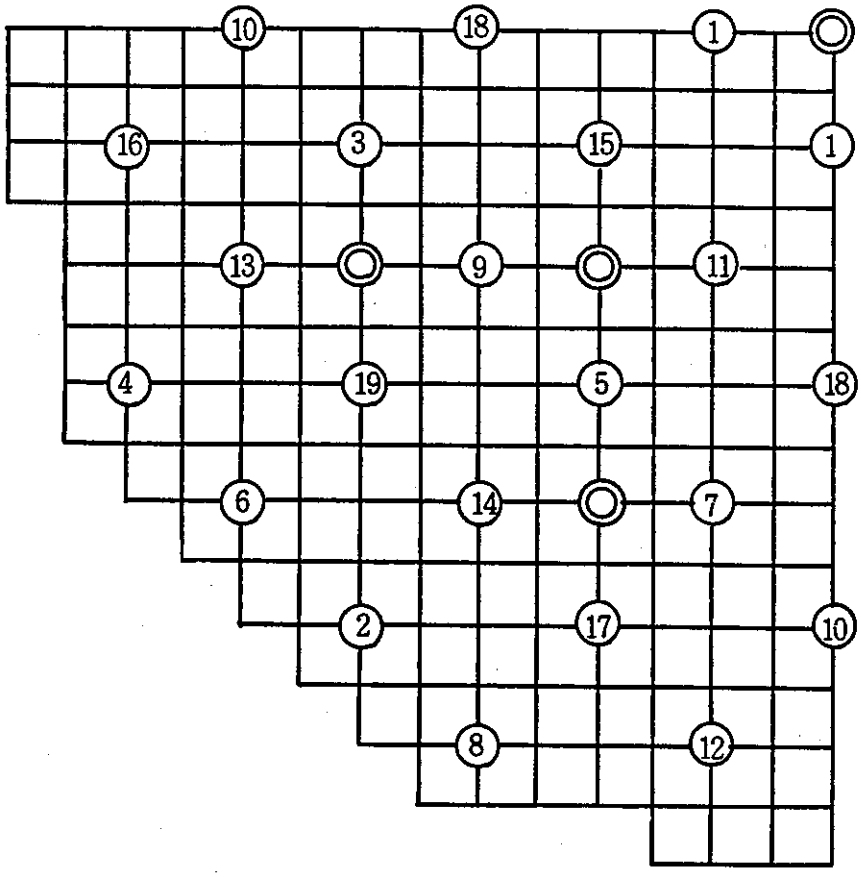


燃料集合体断面



燃料集合体内の軸方向富化度分布

図2．4　ＡＴＲ実証炉の取替燃料構成



Ⓝ 停止棒　N：引抜順序（1/4回転対称）

◎ 調整棒　（半挿入）

図2.5　ＡＴＲ実証炉平衡炉心サイクル初期における停止棒引抜順序例（１／４炉心）

3. 解析ケースの選定

評価事象としては、昨年度実施したATR実証炉における反応度投入要因のうち、「制御棒の引抜き」に係る想定事象のなかから反応度投入量が最も大きい「起動時の制御棒引抜き(運転時の異常な過渡変化事象)」を代表的な反応度投入事象として選定し、EUREKA-ATRコードの適用性の評価を行うこととする。

3.1 解析ケース選定の考え方

解析ケースの選定に当たっては、以下の考え方に従うものとする。なお、設計で想定された起動時の制御棒引抜き事象におけるイベントシーケンスを図3.1に示す。

3.1.1 DBE及びBDBEケースの選定

(1) ATR実証炉の安全解析コードとしての適用性を確認する観点から、設計基準事象(DBE)である、パス⑤を選定する。

(2)「幾分DBEを超える想定」の範囲に含まれる事象(BDBE)の事例解析への適用性を確認する観点から、イベントシーケンスと半定量的な発生頻度(図3.1)を考慮して、パス⑥及びパス⑧を選定する。

3.1.2 感度解析項目の選定

ATR実証炉の反応度投入事象を解析するコードとしての基本的解析モデルを確立する観点から、DBE及びBDBEの各解析における投入反応度及びその他の結果に影響を与えると考えられるパラメータについて、基準となるDBE及びBDBEのケースの他に感度解析ケースを選定する。感度解析項目としては数多くのパラメータが存在するが、本感度解析では、入力データの幅(裕度)の取扱い方、制御棒引抜き事象に特有な局所的中性子束歪効果及び計算コードに含まれる計算モデルに着目し、計算結果に影響を与える大きさの程度を想定して代表的な以下の6項目を選定する。

(1) 3次元及び1点近似解析共通

① 制御棒反応度価値(反応度投入率)

本事象では、制御棒反応度価値は投入反応度の大きさを決定するのみならず、最大出力、燃料温度等の熱的諸量の大きさにも影響を及ぼす。特に、投入反応度が小さくなれば、異常影響緩和系の設定条件との関連で事象パターンそのものが変化することも考えられる。

② 反応度係数

反応度係数は、炉心内中性子束分布とともにフィードバック反応度を決定し、炉出力、燃料温度等の熱的諸量の変化を緩和したり、助長したりする。特に、BDBEケースでは、ドップラー係数と冷却材温度係数

が支配的であるので、各反応度係数の計算結果に対する感度を把握する。

(2) 3次元解析

① 拡散計算ステップ数

拡散計算ステップ数とは、3次元解析における拡散計算の計算頻度のことである。3次元解析においては、計算過程のある時間ステップで3次元拡散計算を実施して、出力分布の時間及び空間依存性をフィードバック反応度や燃料温度の計算に反映できるようになっている。出力分布が大きく歪む場合、その歪みを正確に解析するためには、十分細かい時間幅で計算する必要性がある。

② 制御棒引抜き場所

3次元解析においては、出力分布の時間･空間変化を考慮しているため、制御棒引抜き場所が異なればフィードバック反応度や燃料温度に影響を及ぼす場合が考えられる。ここでは、制御棒引抜き場所の相異が計算結果に与える感度を把握する。

(3) 1点近似解析

① 設定出力分布

1点近似解析においては、反応度変化に伴う炉心内中性子束(出力)分布の変化を考慮せず、あらかじめ設定した分布を用いてフィードバック反応度やエンタルピーを計算することになっている。従って、原子炉出力が同一であっても、出力分布の相異が局所的な燃料の温度及びエンタルピーに与える影響を把握する。

② 総合反応度

炉出力や燃料温度等は、炉心の全反応度に大きく依存するので、発電用軽水型原子炉施設の反応度投入に関する評価指針[3](RIE評価指針)では、反応度投入事象を「臨界又は臨界近傍の原子炉に、原則的に1$以上の反応度が急激に投入されることによって、原子炉出力の上昇とそれに伴う原子炉燃料のエンタルピー増大が生じる事象をいう」と定義している。しかし、本事象では投入反応度が1$以上にならないことが想定される。一方、当指針の解説には「反応度投入量が1$未満であっても、対象事象における燃料挙動が1$以上の場合と基本的に類似する場合は、本指針の適用又は準用があり得る」とある。そのため、投入反応度又は全反応度をできるだけ1$に近づける意味から、上記(1)の①及び②を組み合わせて全反応度ができるだけ大きくなる感度項目を設け、総合反応度と呼ぶことにする。

3.2 解析ケース

本解析で取り上げた以下に示す基準ケース及び感度解析ケースの一覧を表3.1に示す。

3.2.1 基準ケース

3.1.1 DBE及びBDBEケースの選定(1)及び(2)に基づき、EUREKA-ATRコードの実証炉への適用性を確認する観点から、設計での公称値(ここでは基準値と呼ぶ)を用いた以下の3次元及び1点近似各解析ケースを「基準ケース」として選定する。

(1) DBEケース

DBEケースとなっているパス⑤のケース

(2) BDBEケース

幾分DBEを超える想定として、DBEケースのスクラム第1信号不作動を仮定したパス⑥のケース

(3) BDBE参考ケース

幾分DBEを超える想定の範囲に含まれると考えられるケースとして、より反応度投入が大きくなると考えられるパス⑧のケース

3.2.2 感度解析ケース

3.1.2 感度解析項目の選定に基づき、EUREKA-ATRコードの感度解析ケースを以下のとおり選定する。

(1) 3次元及び1点近似解析共通

① 制御棒反応度価値(反応度投入率)

DBE及びBDBEケース

② 反応度係数

BDBEケース

(2) 3次元解析

① 拡散計算ステップ数

DBEケース

② 制御棒引抜き場所

DBEケース

(3) 1点近似解析

① 設定出力分布

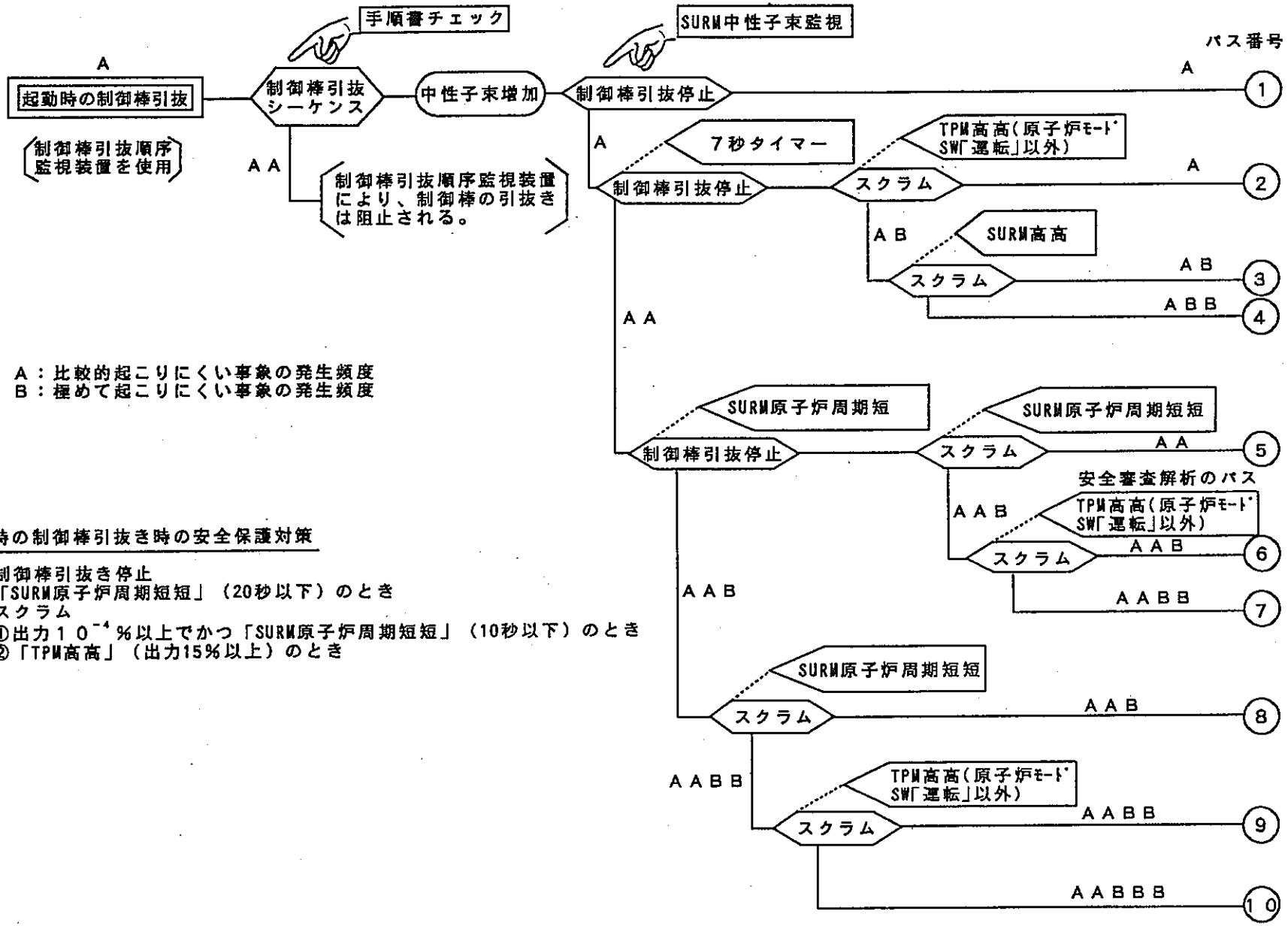
DBE及びBDBEケース

② 総合反応度

DBE、BDBE及びBDBE参考各ケース

表３．１　起動時制御棒引抜事象における解析ケース一覧

項目＼事象				DBE パス⑤		BDBE パス⑥		BDBE参考ケース パス⑧	
計算手法				3次元	1点近似	3次元	1点近似	3次元	1点近似
基準ケース				○	○	○	○	○	○
感度ケース	制御棒反応度価値		過大投入反応度	○	○	○	○		
			過小投入反応度	○	○				
	反係応数度	ドップラー係数	正側値			○	○		
		冷却材温度係数	正側値			○	○		
	拡散計算ステップ数		基準ケースより細分化	○					
	制御棒引抜場所		炉心中央部４本	○					
	設定出力分布		引抜停止時		○		○		
			全引抜時		○		○		
	総合反応度	制御棒反応度価値：過大投入反応度 ﾄﾞｯﾌﾟﾗｰ係数：正側値 冷却材温度係数：正側値			○		○		○



起動時の制御棒引抜き時の安全保護対策

(1) 制御棒引抜き停止
「SURM原子炉周期短短」（20秒以下）のとき
(2) スクラム
①出力10^{-4}％以上でかつ「SURM原子炉周期短短」（10秒以下）のとき
②「TPM高高」（出力15％以上）のとき

図3．1　起動時制御棒引抜事象におけるイベントシーケンス

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4. 解析手法

4.1 炉心構成

(1) 解析対象炉心

本事象の解析は、出力分布の歪が最も大きくなる取替炉心サイクル初期を対象とする。取替炉心サイクル初期における炉心径方向の燃焼度分布を図4.1に示す。

(2) 燃料配置

ATR実証炉の炉心内燃料は、図2.3に示すように、径方向の内側領域に低富化PuのMOX燃料、外側領域に高富化PuのMOX燃料をそれぞれ308体配置してある。また炉心軸方向については、図2.4に示すように燃料集合体の上・下部に高富化PuのMOX燃料、中央部に低富化PuのMOX燃料をそれぞれ配分してある。従って、炉心内の燃料構成は径方向2領域、軸方向3領域の配置となっている。

(3) 制御棒配置

ATR実証炉の平衡炉心サイクル初期における停止棒引抜き順序例を図2.5に示す。ATR実証炉の制御棒は、図4.2に示すように76本の停止棒と13本の調整棒より構成される。

ATR実証炉の起動時には予め設定された制御棒引抜きシーケンスに従って、図2.5に示すように4本づつ制御棒の引抜きを行うが、本解析ではそのシーケンスのうち出力分布の歪が最も大きい炉心周辺部4本の制御棒引抜き時の炉心を採用する。即ち、図4.2に示すように中心部4本の停止棒及び全ての調整棒が半挿入、56本の停止棒が全引抜き、残り16本の停止棒が全挿入の炉心である。引抜き対象制御棒は、この全挿入の16本の停止棒のうち、周辺部に配置されている4本である。

(4) 起動用検出装置(SURM)配置

ATR実証炉のSURMの炉心内配置を図4.3に示す。SURMは炉心内に8個配置され、軸方向のほぼ中央付近に位置している。本解析でもこの配置を模擬している。

(5) 局部用出力検出装置(LPM)配置

炉心出力は全出力検出装置(TPM)の信号から求められるが、TPM信号は複数のLPM信号を演算して得られる。

ATR実証炉のLPMの炉心内配置を図4.3に示す。LPMは炉心内径方向44か所に配置されている。また、軸方向には径方向それぞれの位置で4か所に配置され、炉心内には合計176個のLPMが配置されている。本解析でもこの配置を模擬している。

4.2 解析モデル

EUREKA-ATRによる起動時における制御棒引抜き事象の解析フローチャートを図4.4に示し、主な解析モデルについて以下にまとめる。なお、拡散計算メッシュ、熱流動計算チャンネル･ノード及び熱流動計算タイムステップの分割方法は、「ふげん」再循環ポンプ速度切換時出力変化解析(「ふげん」出力解析)で計算精度が確認された計算手法に従った。

(1) 拡散計算メッシュ分割

図4.5及び図4.6にそれぞれ炉心径方向及び軸方向の拡散計算メッシュ分割を示す。炉心径方向には格子ピッチ(24.0cm)ごとに1メッシュに分割し、炉心全体で28×28メッシュとした。炉心軸方向には15メッシュに分割し、1メッシュ当り格子ピッチ相当に対応させた。

(2) 熱流動計算チャンネル･ノード分割

図4.5及び図4.6に熱流動計算用の炉心径方向チャンネル及び軸方向ノード分割を示す。中性子束分布の空間依存性が大きい体系、又は高出力時の炉心内熱流動計算もできるように、径方向には燃料種類、出力分布とその歪の程度、そして冷却系ループを考慮して合計9領域(チャンネル)に分割した。この場合、チャンネル出力が最大になるホッテストチャンネルを1領域、引抜き制御棒隣接4チャンネル及びその周囲の11チャンネルの2領域、そして内側、外側各燃料領域を冷却系ループごとに設定した。軸方向には9ノードに分割し、大部分1ノードを拡散計算時の2メッシュに対応させたが、炉心上･下端部及び防振板を含む部分については拡散計算メッシュと等価にした。また、炉心上･下部の非加熱部もこの他に各々1ノードを割り当てた。

なお、図4.5及び図4.6に示す領域No.1がホッテストチャンネルである。炉心内の温度や流量分布は出力分布ほど空間依存性が大きくないため、このように、大部分の熱流動計算の1ノード又は1チャンネルに拡散計算の複数メッシュが含まれるような分割にしている。

(3) 拡散･熱流動計算タイムステップ

拡散計算及び熱流動計算の各時間間隔(タイムステップ)を図4.7に示す。事象の推移をできるだけ正確に把握するため、熱流動計算は、動特性計算とともに反応度投入開始後はすべて0.1秒間隔で行っている。出力分布を求めるための拡散計算は、入力で指定する時刻の他、炉心出力の変化割合に対応させて随時実行することにした。拡散計算を実行させる指定時刻は、定常状態設定までの5秒間で0.5~3秒毎、反応度投入開始時からは5秒毎とした。なお、1点近似解析では反応度投入時以後は拡散計算を実行しない。

(4) 拡散計算メッシュと熱流動計算チャンネル･ノードとの対応

本解析モデルでは、炉心内の1つの熱流動計算ノード(又はチャンネル)に対して、複数個の拡散計算メッシュが対応している。この場合、熱流動計算ノードの温度･流量等を該当するノード内に含まれる複数個の拡散計算メッシュ全てにそのまま受渡す。一方、拡散計算で得られる規格化出力、中性子束重み因子等は、それぞれ1つの熱流動計算ノードに含まれる複数個の拡散計算メッシュでの和をそのノードに受渡すようにしてある。

4.3 解析条件

本解析における主な解析条件を表4.1に、また、DBE、BDBEのそれぞれについて基準ケース及び感度解析の条件を表4.2に示す。

4.3.1 基準ケースの共通解析条件

(1) 初期出力レベル

本事象が代表的な反応度投入事象として選定されていることを考慮し、初期原子炉出力を次のように設定した。まず、制御棒引抜き前の原子炉は臨界状態にあって、その時の原子炉熱出力は核計装系で測定できる最低出力レベル(定格値の10^{-9}%)とする。なお、初期冷却材温度及び初期原子炉圧力には、低温臨界状態における値(冷却材温度20℃、蒸気ドラム圧力1kg/cm^{2}a)を用いる。

(2) 制御棒反応度価値(反応度投入率)

制御棒引抜きによる反応度投入率は、制御棒反応度価値感度解析の一部を除いて一定(ランプ反応度)とすることを基本にする。即ち、停止棒引抜き速度の上限値(6cm/s)で引抜いた場合、停止棒の引抜きシーケンスに対応する多くの反応度投入曲線の中でその傾きが最大となる値($1.2\times10^{-4}\Delta$k/k/s)を、本解析における引抜き制御棒の反応度価値の基準値として使用する。従って、この基準値は実際の引抜き制御棒の反応度投入率には対応していない。制御棒引抜きに伴う投入反応度の炉心高さ依存性を図4.8に示す。

(3) フィードバック反応度

ドップラー反応度及び冷却材温度反応度は、取替炉心サイクル初期の低温臨界条件における基準値を使用する。ドップラー反応度及び冷却材温度反応度のそれぞれ燃料温度、冷却材温度依存性を図4.9及び図4.10に示す。

(4) 動特性パラメータ

動特性パラメータは、原子炉出力の上昇を過大に見積る値を用いる。動特性計算に使用する動特性パラメータの基準値を表4.3に示す。

(5) スクラム反応度

スクラム反応度は、低温時の条件において1ロッドスタック及び制御棒落下時の反応度投入特性を考慮して求めた最小値を用いる。スクラム反応度の投入曲線を図4.11に示す。

(6) 制御棒引抜き場所(3次元解析)

炉心周辺部の4本の制御棒を、全挿入位置より引抜く(図2.5参照)。

(7) 拡散計算ステップ数(3次元解析)

拡散計算ステップ数は、SPERT炉心や「ふげん」RCP切換炉心における解析手法[2]として確立したステップ数に準じて設定された。即ち、定常計算時には5秒毎とし、原子炉出力変化時には出力の時間変化割合でその直前の拡散計算時の出力の10倍又は0.1倍毎に拡散計算を実行する(図4.7参照)。

(8) 設定出力分布(1点近似解析)

設定出力分布として、制御棒引抜き前の分布を用いる。

4.3.2 各パス毎の解析条件

(1) DBEケース

① 制御棒引抜き停止信号

SURMの「原子炉周期短」信号で制御棒の引抜きが停止される。設定値は原子炉周期で20秒相当である。なお、信号が発信してから実際に制御棒が引抜き停止されるまでの遅れ時間を考慮する。

② スクラム信号

原子炉出力が定格出力の10^{-4}%以上でSURMの「原子炉周期短短」信号により原子炉はスクラムされる。設定値は、原子炉周期で10秒相当である。また、安全保護系の応答遅れ時間としては、スクラム設定値に到達した時間から、停止棒駆動装置の電磁クラッチ開放信号が発生するまでの遅れ時間を考慮する。

(2) BDBEケース

① 制御棒引抜き停止信号

DBEケースと同様に、SURMの「原子炉周期短」信号で制御棒の引抜きが停止される。設定値は原子炉周期で20秒相当である。なお、信号が発信してから実際に制御棒が引抜き停止されるまでの遅れ時間を考慮する。

② スクラム信号

SURMの「原子炉周期短短」信号の不作動を仮定しているため、全出力検出装置(TPM)の「中性子束高高(原子炉モードスイッチ「運転」以外)」信号で原子炉はスクラムされる。設定値は、原子炉の出力レベルが定格出力の15%である。スクラム時には安全保護系の応答遅れ時間を考慮し、これは(1)の②と同様である。

(3) BDBE参考ケース

① 制御棒引抜き停止信号

SURMの「原子炉周期短」信号の不作動を仮定しているため、制御棒引抜き停止信号は発信されない。

② スクラム信号

DBEケースと同様に、原子炉出力が定格出力の10^{-4}%以上でSURMの「原子炉周期短短」信号により原子炉はスクラムされる。設定値は、原子炉周期で10秒相当である。スクラム時には安全保護系の応答遅れ時間を考慮し、これは(1)の②と同様である。

4.3.3 感度解析条件

(1) 3次元及び1点近似解析共通

① 制御棒反応度価値(反応度投入率)

本感度解析では、投入反応度の大小による事象パターンの変化も考慮して、投入反応度を大きくする場合(過大投入反応度)と小さくする場合(過小投入反応度)の2つを採用する。本解析に用いた反応度投入量の制御棒引抜き長又は引抜き時間依存性を、基準ケース(ランプ反応度)、過小投入反応度(S字反応度)及び過大投入反応度(ランプ反応度)の場合と比較して図4.8に示す。

i) 過大投入反応度

基準ケースでは、引抜き制御棒の反応度価値は引抜きパターンの中で最大となる基準値を使用するが、感度解析ではこの基準値を1.5倍した値($1.8\times10^{-4}\Delta k/k/s$)を過大投入反応度としてDBE及びBDBEの各ケースで用いる。ただし、制御棒引抜き速度は基準ケースの場合と同一である。

ii) 過小投入反応度

DBEケースでは、基準ケースに比べて制御棒引抜きに伴う出力分布の歪みが極力大きくなるように、実際の制御棒引抜き位置で計算された反応度投入曲線(S字)を過小投入反応度として用いる。S字反応度投入率を採用すれば、ランプ反応度と比べて全引抜き時の反応度価値と同一であっても、制御棒引抜き長は大きくなり、出力分布の歪はより大きくなることが考えられる。なお、過小投入反応度の場合、反応度投入曲線の傾きが最大となる値は$0.67\times10^{-4}\Delta k/k/s$で、この値は基準値の約56%である。また、全引抜き時の制御棒反応度価値は基準値の約0.7倍に相当する。

② 反応度係数

BDBEケースでは、制御棒引抜きに伴う出力上昇時に熱的諸量(燃料温度、冷却材温度等)が変化する。基準ケースでは、これらの諸量の変化に伴って炉心に投入されるフィードバック反応度(ドップラー反応度及び冷却材温度反応度)に基準値を使用するが、感度解析では、これらの基準値に核拡散計算誤差相当の値を含む正側値を使用する。ドップラー反応度及び冷却材温度反応度の基準値及びその正側値と各温度との関係を図4.9及び図4.10に示す。

i) ドップラー係数

ドップラー係数は基準値を0.8倍した値を用いる。

ii) 冷却材温度係数

冷却材温度係数は、基準値に$5\times10^{-5}\Delta k/k/^{\circ}C$を加えた値を用いる。

(2) 3次元解析

① 拡散計算ステップ数

感度解析では基準ケースで採用した拡散計算ステップ数の妥当性を確認する。このため、拡散計算を行う時間間隔を基準ケースの場合より細分化し、拡散計算ステップ数を基準ケースのそれの約2倍にする。

② 制御棒引抜き場所

基準ケースにおける引抜き制御棒は、周辺部4本であるが、感度解析では炉心中央部の4本とする。図4.2に制御棒パターン及び引抜き制御棒を示す。

(3) 1点近似解析

① 設定出力分布

基準ケースでは制御棒引抜き前の出力分布を設定するが、感度解析では制御棒引抜き停止時及び制御棒全引抜き時の各出力分布を設定する。

② 総合反応度

基準ケースでは、反応度投入率及びフィードバック反応度に基準値を使用するが、感度解析では投入反応度、全反応度ともになるべく大きくなるようにこれらのパラメータを組合せる。具体的には、反応度投入率及び反応度係数に、それぞれ(1)で述べた過大投入反応度、正側反応度係数を使用する。

表４．１　起動時制御棒引抜事象の主な解析条件

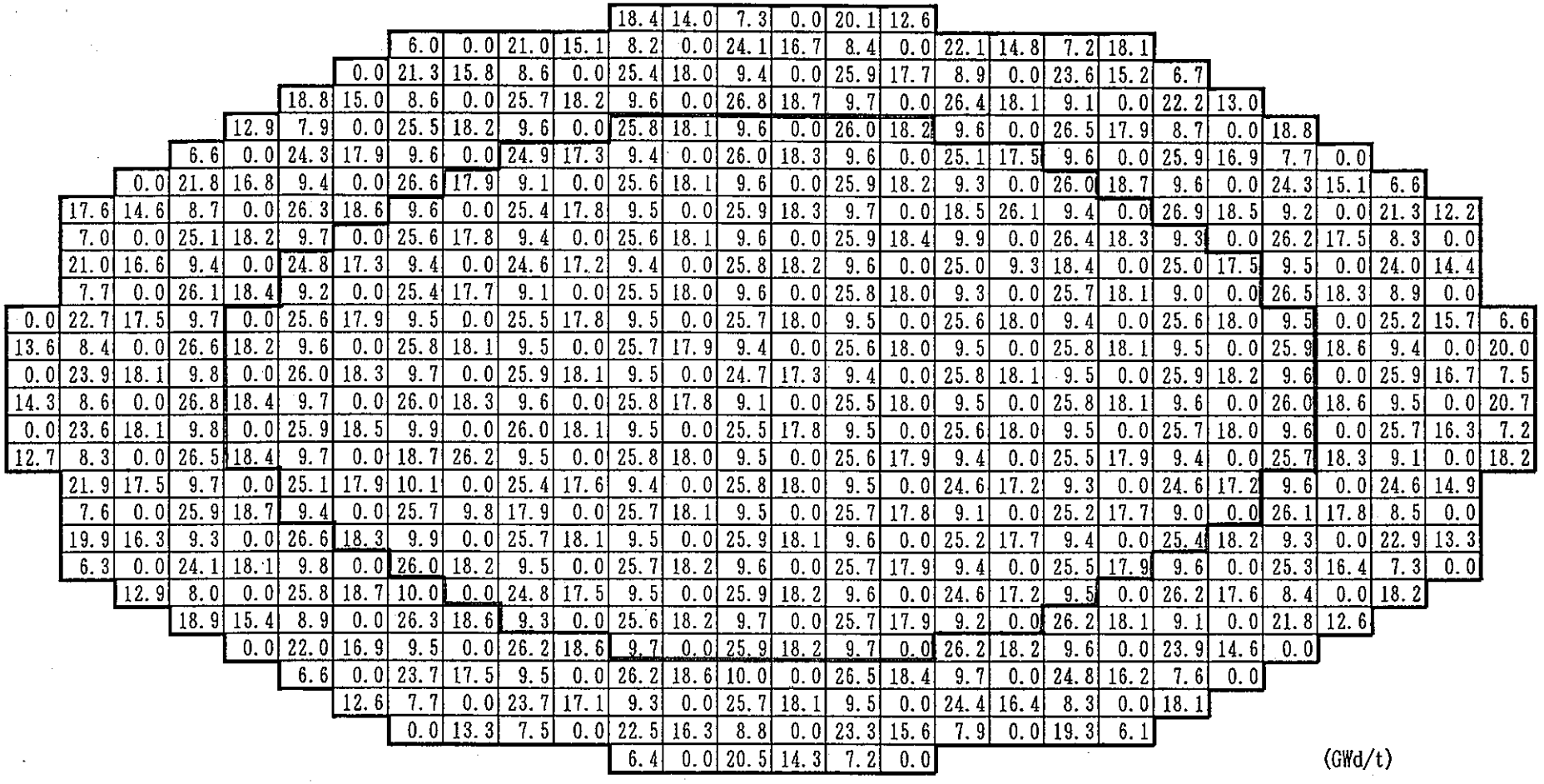
No	項　目	値	選定理由
1	想定事象	炉心周辺領域の停止棒４本引抜き	投入反応度が最大となる事象
2	解析対象炉心	取替炉心サイクル初期	
3	初期条件		
	(1)原子炉出力	定格値の10^{-9}%	起動時最低出力
	(2)再循環流量	定格値の５８%	原子炉出力に対応する最低流量
	(3)蒸気ドラム圧力	1kg/cm²a	
	(4)炉心入口エンタルピー	２０kcal/kg	
4	炉心特性		
	(1)フィードバック反応度		低温臨界条件での基準値
	ドップラー係数	-2.6×10^{-5} Δk/k/℃	100℃での値
	冷却材温度係数	1.1×10^{-5} Δk/k/℃	50℃での値
	(2)スクラム反応度	-4.48×10^{-2} Δk/k	起動途中において、停止棒が炉内に挿入されていることを考慮した最小値，１ロッドスタック考慮
	(3)動特性パラメータ		
	即発中性子寿命	1.49×10^{-4}s	原子炉出力の上昇を過大に見積る値
	実効遅発中性子発生割合	4.39×10^{-3}	
5	停止棒引抜停止信号	原子炉周期短（２０秒相当）	
6	安全保護系作動信号	・原子炉周期短短（１０秒相当）且つ定格値の10^{-4}%出力 ・ＴＰＭ高高（原子炉モードスイッチ「運転」以外;定格値の１５%出力）	
7	引抜制御棒		
	(１)引抜速度	６ｃｍ／ｓ	停止棒引抜速度の上限値
	(２)反応度価値（反応度投入率）	1.2×10^{-4} Δk/k/s	実際に考えられる反応度投入曲線の最大値を採用

表４．２　起動時制御棒引抜事象の主なパラメータ条件

項目			3次元解析	1点近似解析
基準ケース パス⑤⑥⑧	制御棒反応度価値		1.2×10⁻⁴Δk/k/s(2.7¢/s)　(基準値)　(図４．８参照)	
	反応度係数	ﾄﾞｯﾌﾟﾗｰ係数	-2.6×10⁻⁵Δk/k/℃(-0.59¢/℃)(基準値)　(図４．９参照)	
		冷却材温度係数	1.1×10⁻⁵Δk/k/℃(0.25¢/℃)(基準値)　(図４．１０参照)	
	動特性パラメータ	l	1.49×10⁻⁴s　(表４．３参照)	
		β_{eff}	4.39×10⁻³　(表４．３参照)	
	制御棒引抜場所		炉心周辺部停止棒４本	――
	設定出力分布		――	制御棒引抜前の分布
	拡散計算ステップ数		反応度投入後３５秒までは５秒毎、以降は、出力上昇割合が１０倍毎または、出力下降割合が０．１倍毎	――
感度ケース	制御棒反応度価値	ﾊﾟｽ ⑤⑥	過大投入反応度：基準値×1.5　(図４．８参照)	
		ﾊﾟｽ ⑤	過小投入反応度：基準値×0.7（S字）　(図４．８参照)	
	反応度係数	ﾊﾟｽ ⑥	ﾄﾞｯﾌﾟﾗｰ係数　：基準値×0.8　(図４．９参照)	
			冷却材温度係数：基準値+5×10⁻⁵Δk/k/℃(1.1¢/℃)　(図４．１０参照)	
	拡散計算ｽﾃｯﾌﾟ数	ﾊﾟｽ ⑤	反応度投入後スクラム時刻までのタイムステップ：基準ケースの約２倍	――
	制御棒引抜場所	ﾊﾟｽ ⑤	炉心中央部停止棒４本	――
	設定出力分布	ﾊﾟｽ ⑤⑥	――	制御棒引抜停止時の分布
				制御棒全引抜時の分布
	総合反応度	ﾊﾟｽ ⑤⑥⑧	――	制御棒反応度価値　：基準値×1.5 ﾄﾞｯﾌﾟﾗｰ係数　：基準値×0.8 冷却材温度係数： 基準値+5×10⁻⁵Δk/k/℃(1.1¢/℃)

表4.3　ＡＴＲ実証炉の取替炉心サイクル初期における動特性パラメータ

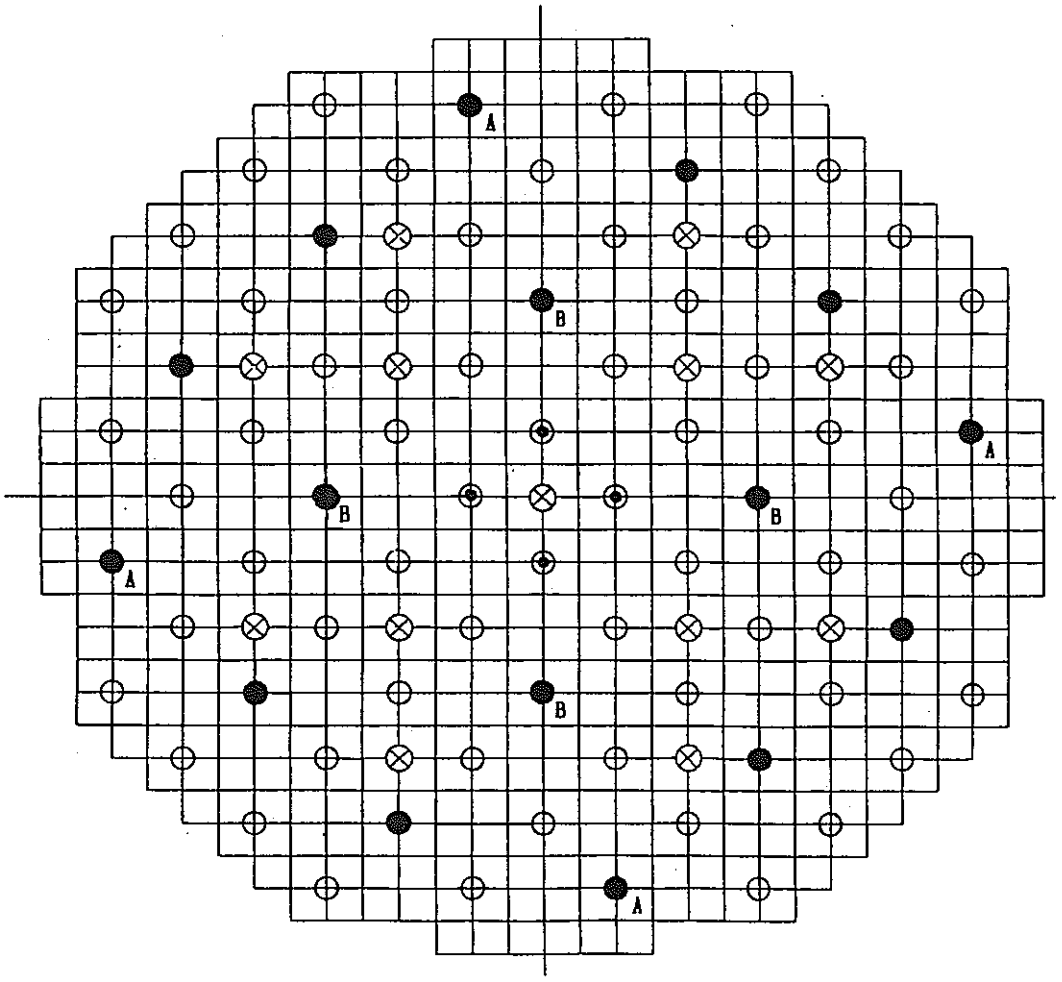
項目		数値
即発中性子寿命　（ℓ：秒）		1.49×10^{-4}
遅発中性子発生割合（β_i）	β_1	3.34×10^{-4}
	β_2	9.23×10^{-4}
	β_3	7.82×10^{-4}
	β_4	1.56×10^{-3}
	β_5	6.35×10^{-4}
	β_6	1.51×10^{-4}
	β_{eff}	4.39×10^{-3}
遅発中性子先行核崩壊定数（λ_i:秒$^{-1}$）	λ_1	1.01×10^{-2}
	λ_2	3.11×10^{-2}
	λ_3	1.26×10^{-1}
	λ_4	3.34×10^{-1}
	λ_5	1.42
	λ_6	3.66



										18.4	14.0	7.3	0.0	20.1	12.6																	
					6.0	0.0	21.0	15.1	8.2	0.0	24.1	16.7	8.4	0.0	22.1	14.8	7.2	18.1													
				0.0	21.3	15.8	8.6	0.0	25.4	18.0	9.4	0.0	25.9	17.7	8.9	0.0	23.6	15.2	6.7												
			18.8	15.0	8.6	0.0	25.7	18.2	9.6	0.0	26.8	18.7	9.7	0.0	26.4	18.1	9.1	0.0	22.2	13.0											
		12.9	7.9	0.0	25.5	18.2	9.6	0.0	25.8	18.1	9.6	0.0	26.0	18.2	9.6	0.0	26.5	17.9	8.7	0.0	18.8										
	6.6	0.0	24.3	17.9	9.6	0.0	24.9	17.3	9.4	0.0	26.0	18.3	9.6	0.0	25.1	17.5	9.6	0.0	25.9	16.9	7.7	0.0									
	0.0	21.8	16.8	9.4	0.0	26.6	17.9	9.1	0.0	25.6	18.1	9.6	0.0	25.9	18.2	9.3	0.0	26.0	18.7	9.6	0.0	24.3	15.1	6.6							
17.6	14.6	8.7	0.0	26.3	18.6	9.6	0.0	25.4	17.8	9.5	0.0	25.9	18.3	9.7	0.0	18.5	26.1	9.4	0.0	26.9	18.5	9.2	0.0	21.3	12.2						
7.0	0.0	25.1	18.2	9.7	0.0	25.6	17.8	9.4	0.0	25.6	18.1	9.6	0.0	25.9	18.4	9.9	0.0	26.4	18.3	9.3	0.0	26.2	17.5	8.3	0.0						
21.0	16.6	9.4	0.0	24.8	17.3	9.4	0.0	24.6	17.2	9.4	0.0	25.8	18.2	9.6	0.0	25.0	9.3	18.4	0.0	25.0	17.5	9.5	0.0	24.0	14.4						
7.7	0.0	26.1	18.4	9.2	0.0	25.4	17.7	9.1	0.0	25.5	18.0	9.6	0.0	25.8	18.0	9.3	0.0	25.7	18.1	9.0	0.0	26.5	18.3	8.9	0.0						
0.0	22.7	17.5	9.7	0.0	25.6	17.9	9.5	0.0	25.5	17.8	9.5	0.0	25.7	18.0	9.5	0.0	25.6	18.0	9.4	0.0	25.6	18.0	9.5	0.0	25.2	15.7	6.6				
13.6	8.4	0.0	26.6	18.2	9.6	0.0	25.8	18.1	9.5	0.0	25.7	17.9	9.4	0.0	25.6	18.0	9.5	0.0	25.8	18.1	9.5	0.0	25.9	18.6	9.4	0.0	20.0				
0.0	23.9	18.1	9.8	0.0	26.0	18.3	9.7	0.0	25.9	18.1	9.5	0.0	24.7	17.3	9.4	0.0	25.8	18.1	9.5	0.0	25.9	18.2	9.6	0.0	25.9	16.7	7.5				
14.3	8.6	0.0	26.8	18.4	9.7	0.0	26.0	18.3	9.6	0.0	25.8	17.8	9.1	0.0	25.5	18.0	9.5	0.0	25.8	18.1	9.6	0.0	26.0	18.6	9.5	0.0	20.7				
0.0	23.6	18.1	9.8	0.0	25.9	18.5	9.9	0.0	26.0	18.1	9.5	0.0	25.5	17.8	9.5	0.0	25.6	18.0	9.5	0.0	25.7	18.0	9.6	0.0	25.7	16.3	7.2				
12.7	8.3	0.0	26.5	18.4	9.7	0.0	18.7	26.2	9.5	0.0	25.8	18.0	9.5	0.0	25.6	17.9	9.4	0.0	25.5	17.9	9.4	0.0	25.7	18.3	9.1	0.0	18.2				
	21.9	17.5	9.7	0.0	25.1	17.9	10.1	0.0	25.4	17.6	9.4	0.0	25.8	18.0	9.5	0.0	24.6	17.2	9.3	0.0	24.6	17.2	9.6	0.0	24.6	14.9					
	7.6	0.0	25.9	18.7	9.4	0.0	25.7	9.8	17.9	0.0	25.7	18.1	9.5	0.0	25.7	17.8	9.1	0.0	25.2	17.7	9.0	0.0	26.1	17.8	8.5	0.0					
	19.9	16.3	9.3	0.0	26.6	18.3	9.9	0.0	25.7	18.1	9.5	0.0	25.9	18.1	9.6	0.0	25.2	17.7	9.4	0.0	25.4	18.2	9.3	0.0	22.9	13.3					
	6.3	0.0	24.1	18.1	9.8	0.0	26.0	18.2	9.5	0.0	25.7	18.2	9.6	0.0	25.7	17.9	9.4	0.0	25.5	17.9	9.6	0.0	25.3	16.4	7.3	0.0					
		12.9	8.0	0.0	25.8	18.7	10.0	0.0	24.8	17.5	9.5	0.0	25.9	18.2	9.6	0.0	24.6	17.2	9.5	0.0	26.2	17.6	8.4	0.0	18.2						
		18.9	15.4	8.9	0.0	26.3	18.6	9.3	0.0	25.6	18.2	9.7	0.0	25.7	17.9	9.2	0.0	26.2	18.1	9.1	0.0	21.8	12.6								
			0.0	22.0	16.9	9.5	0.0	26.2	18.6	9.7	0.0	25.9	18.2	9.7	0.0	26.2	18.2	9.6	0.0	23.9	14.6	0.0									
				6.6	0.0	23.7	17.5	9.5	0.0	26.2	18.6	10.0	0.0	26.5	18.4	9.7	0.0	24.8	16.2	7.6	0.0										
					12.6	7.7	0.0	23.7	17.1	9.3	0.0	25.7	18.1	9.5	0.0	24.4	16.4	8.3	0.0	18.1											
						0.0	13.3	7.5	0.0	22.5	16.3	8.8	0.0	23.3	15.6	7.9	0.0	19.3	6.1											
										6.4	0.0	20.5	14.3	7.2	0.0															

(GWd/t)

図4．1　取替炉心サイクル初期の径方向燃焼度分布



● 停止棒（全挿入）

◉ 停止棒（半挿入）

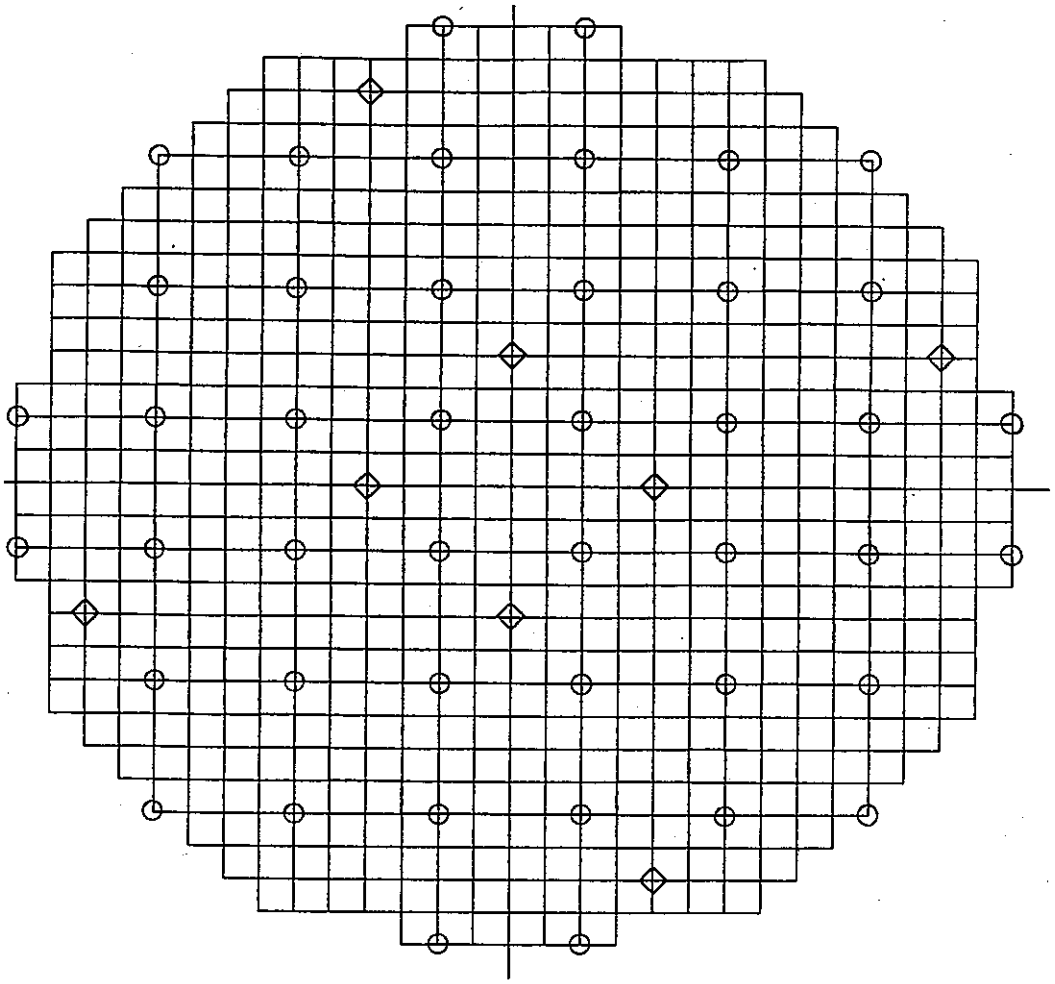
○ 停止棒（全引抜）

⊗ 調整棒（半挿入）

●A 基準ケースにおける引抜制御棒

●B 感度解析における引抜制御棒

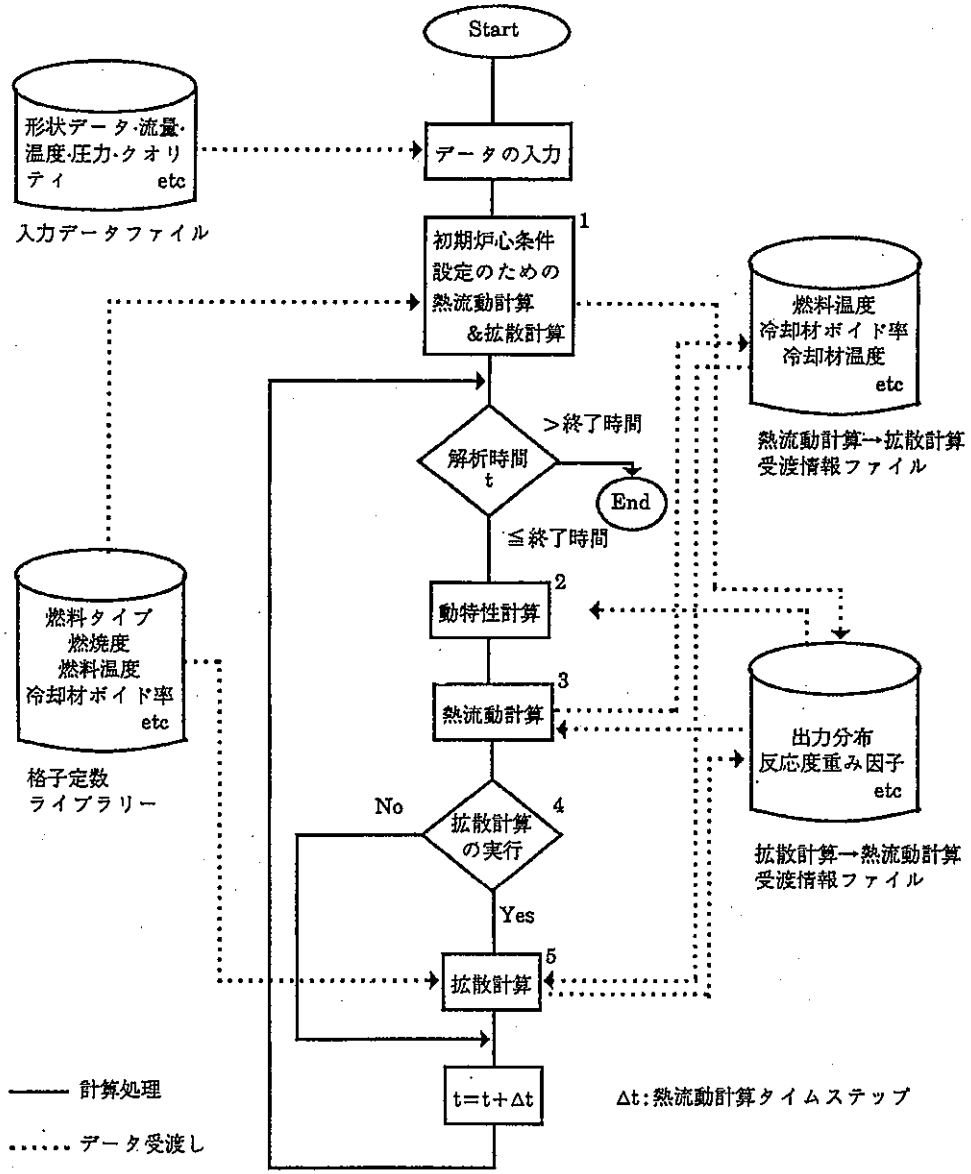
図4．2　引抜制御棒の炉心径方向位置



◇：ＳＵＲＭ（軸方向中央位置）　　８本

○：ＬＰＭストリング　　４４本

図４．３　ＳＵＲＭ及びＬＰＭの炉心径方向位置



1. 初期設定

① 入力された初期状態量より、圧力、流量等を再設定

入力された初期状態量は定常と仮定。

② 3次元拡散計算による出力分布・反応度重み因子の計算

燃料温度・冷却材ボイド率・冷却材温度は入力値を使用。

③ 燃料棒内温度分布・燃料エンタルピーの計算

各ノードの出力は、拡散計算で求めた出力分布を使用して算出。

2. 動特性方程式(1点近似)による炉出力絶対値計算

フィードバック反応度は、拡散計算で求めた反応度重み因子を使用して算出。

3. 熱流動計算

① 冷却材圧力・温度・流量・ボイド率等の計算

1次元均質熱平衡流を仮定。質量保存式・運動量保存式・エネルギー保存式をノードジャンクション法で計算。

② 燃料棒内温度分布、燃料エンタルピーの計算

半径方向1次元時間依存熱伝導方程式で計算。各ノードの出力は、拡散計算で求めた出力分布を使用して算出。

4. 拡散計算の実行の判定(ただし、1点近似解析では反応度投入後は拡散計算をバイパス)

① 入力指定時間

② 制御棒引抜き停止信号発生

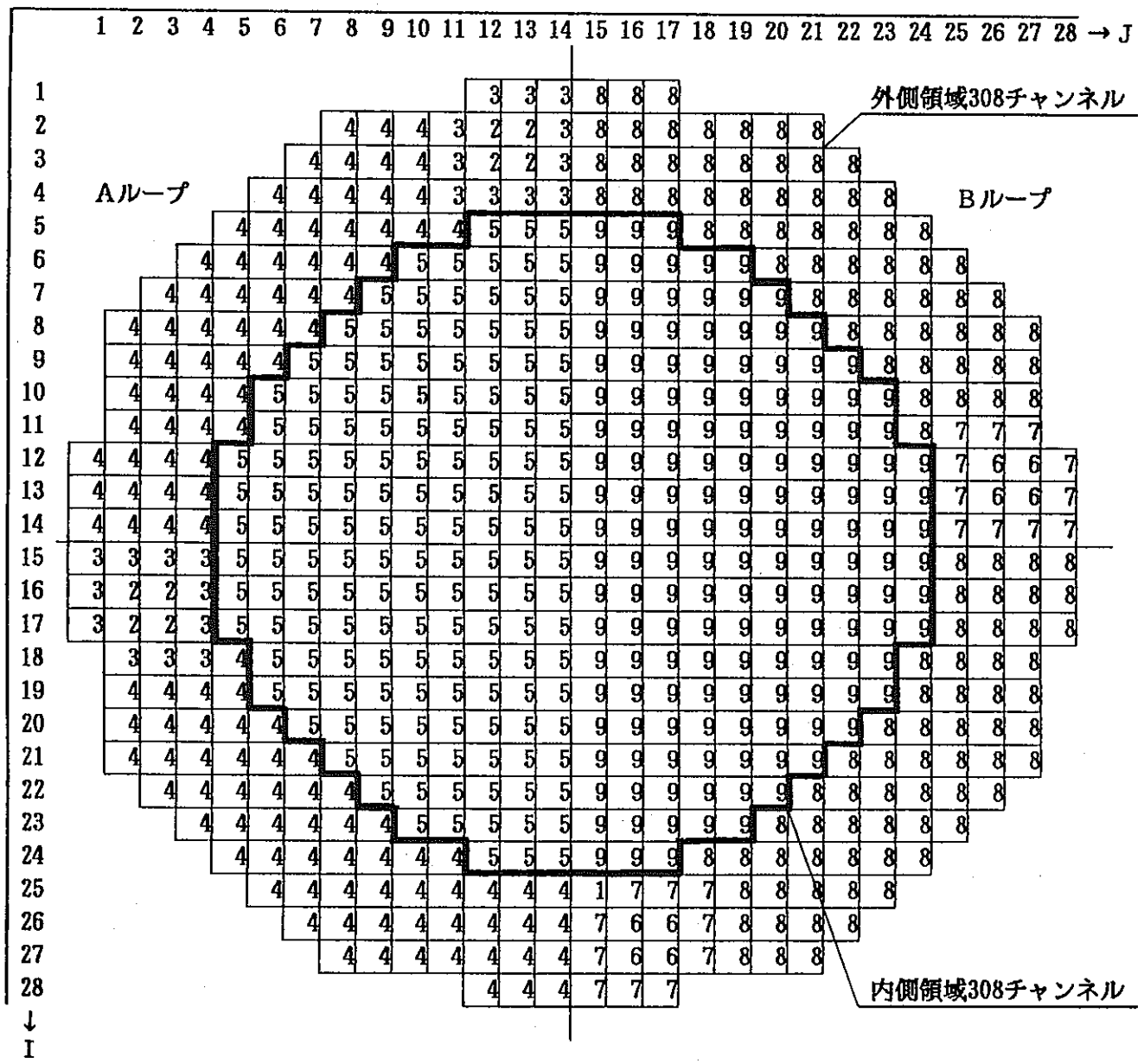
③ スクラム信号発生

④ 出力上昇又は出力下降の割合

5. 3次元拡散計算による出力分布、反応度重み因子の計算

格子定数は熱流動計算で求めた燃料温度・冷却材ボイド率・冷却材温度を基に格子断面積ライブラリーより内外挿して算出。

図4.4 EUREKA－ATRコードにおける解析フローチャート



1：ホッテストチャンネル
2：Aループ側引抜き制御棒隣接チャンネル
3：Aループ側引抜き制御棒隣接外側チャンネル
4：Aループ側外側領域チャンネル
5：Aループ側内側領域チャンネル
6：Bループ側引抜き制御棒隣接チャンネル
7：Bループ側引抜き制御棒隣接外側チャンネル
8：Bループ側外側領域チャンネル
9：Bループ側内側領域チャンネル

図4.5　炉心径方向拡散計算メッシュ及び熱流動計算チャンネル分割

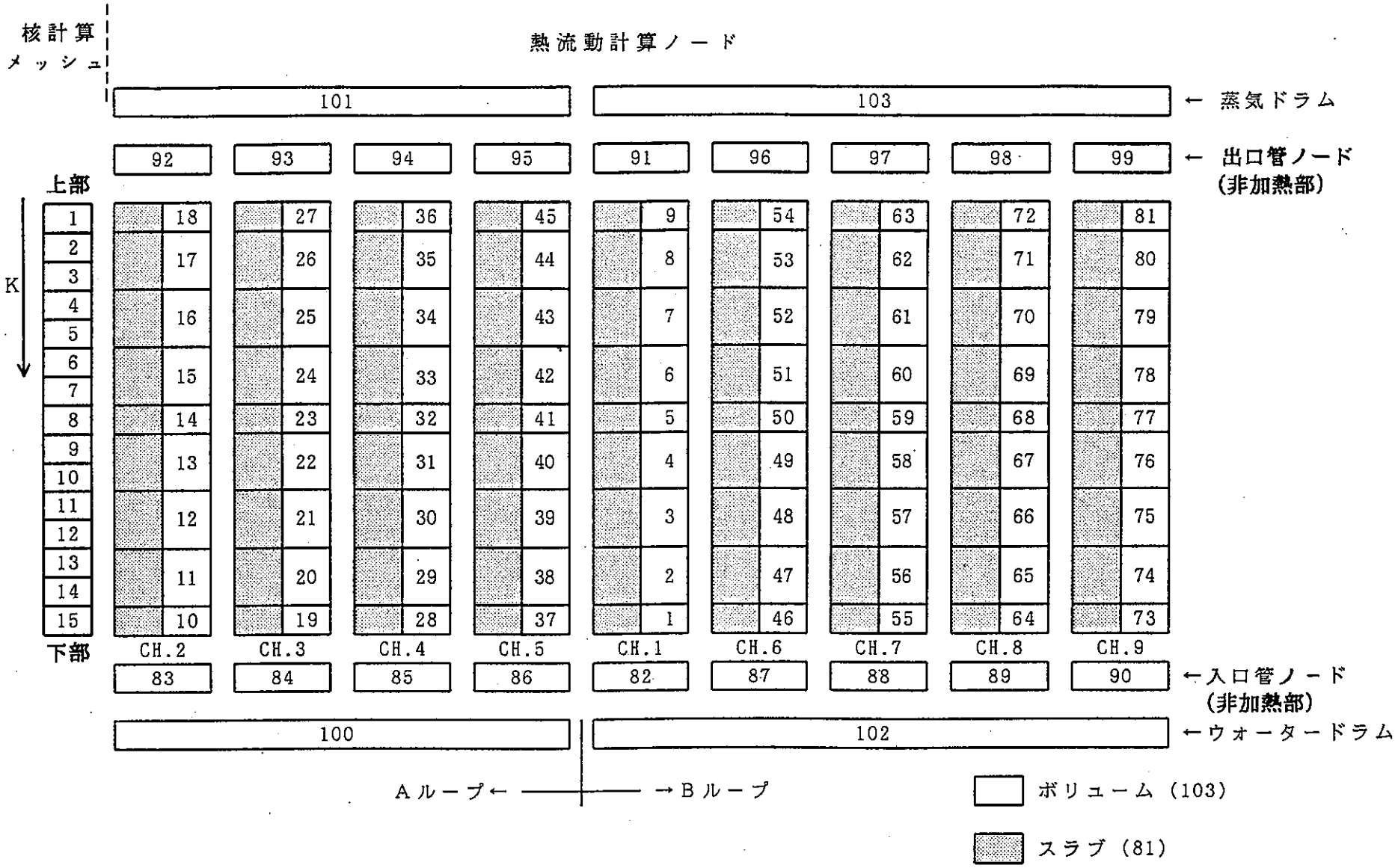


図4.6 炉心軸方向の拡散計算メッシュ及び熱流動計算ノード分割

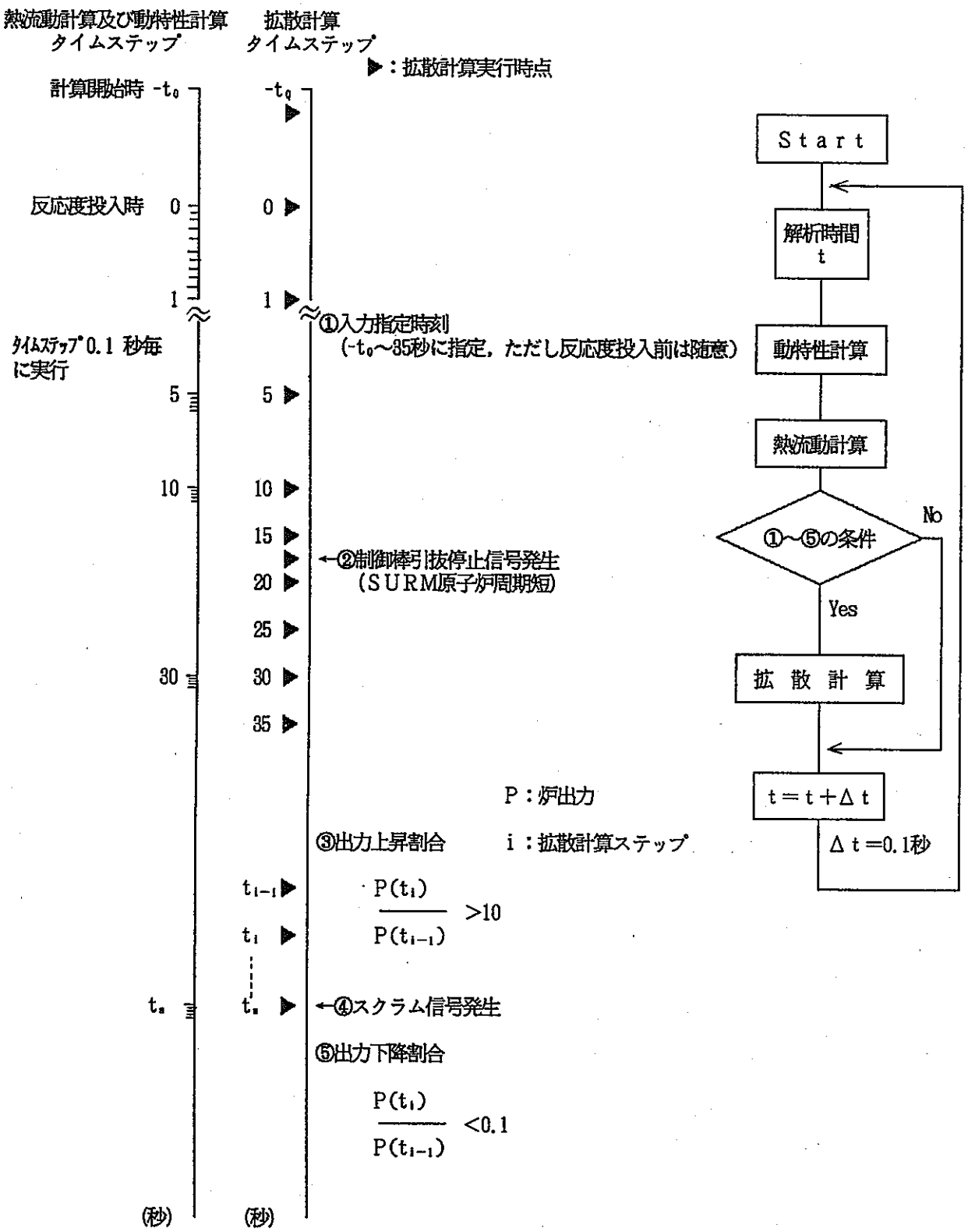


図４．７　熱流動計算及び拡散計算における
タイムステップ

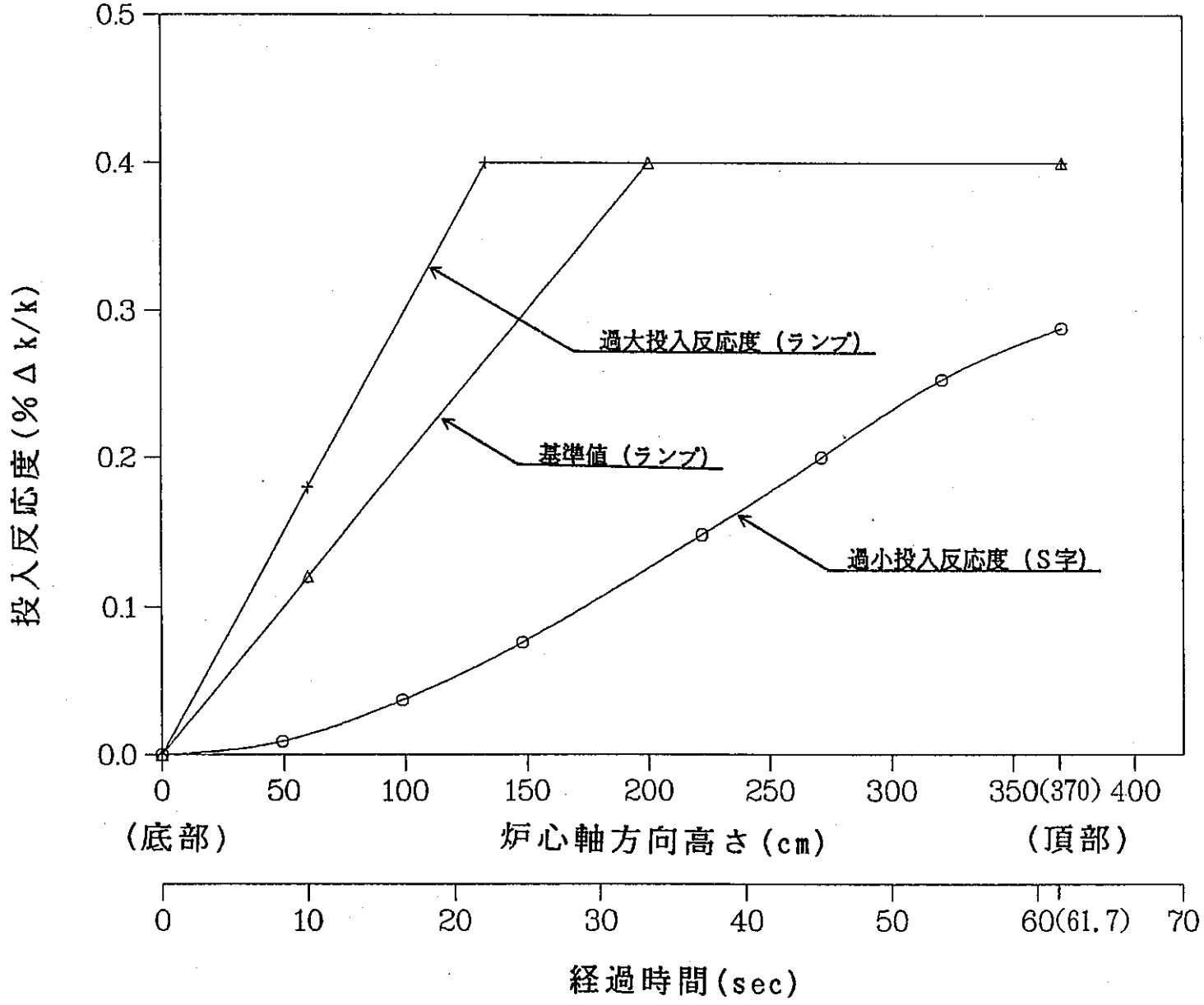


図４．８　引抜制御棒の投入反応度特性

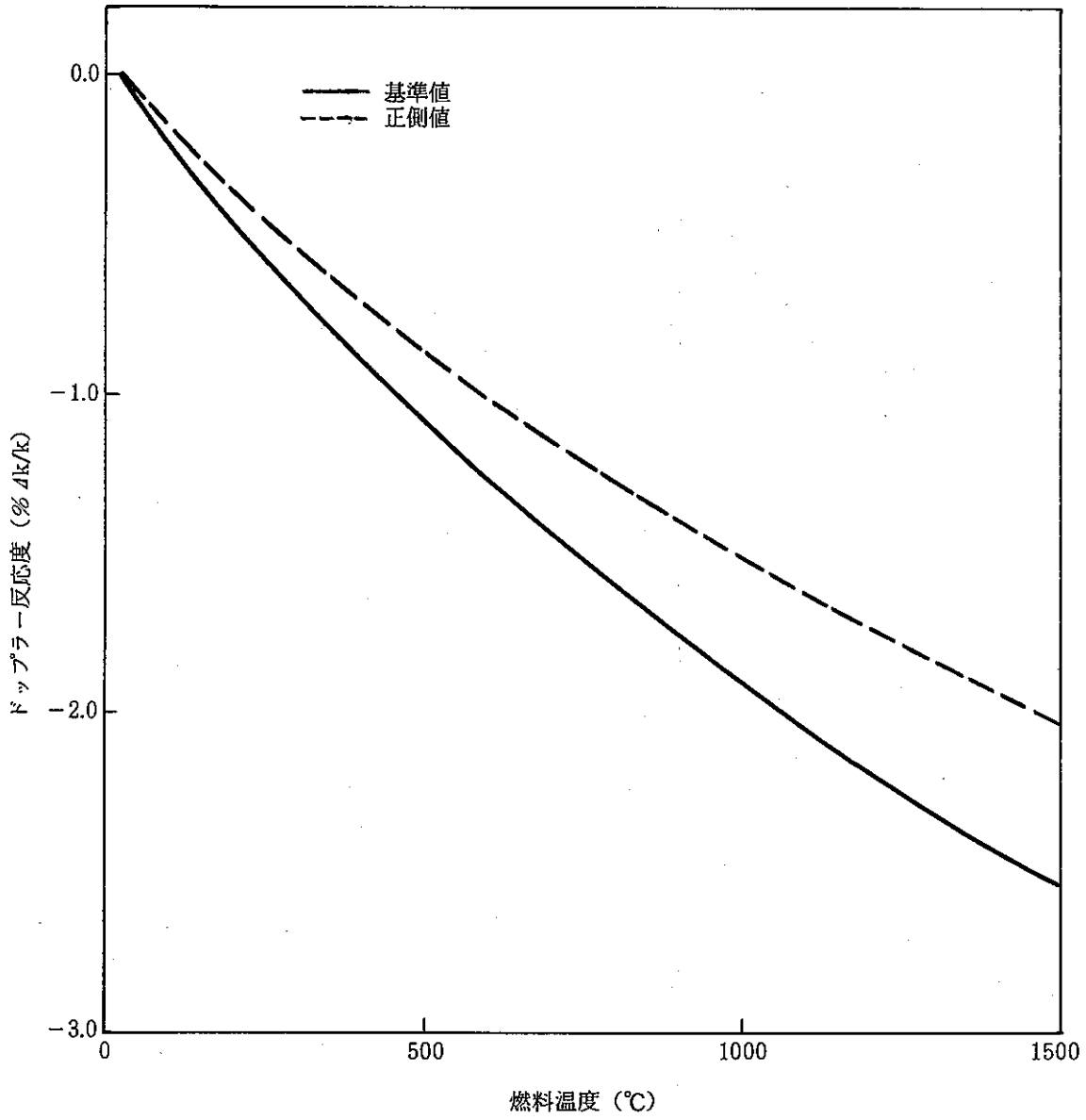


図4.9　ドップラー反応度の燃料温度依存性

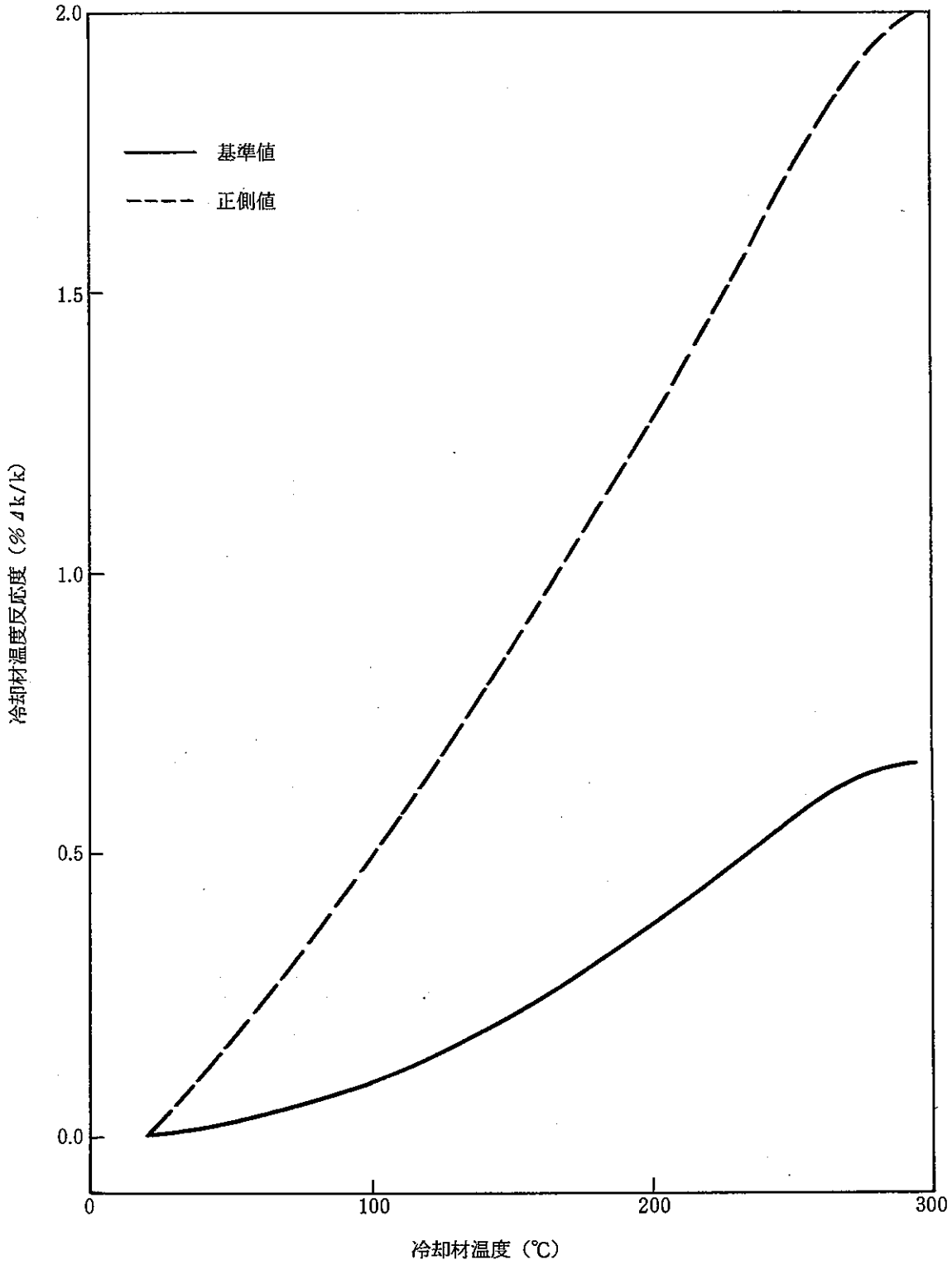


図 4.10 冷却材温度反応度の温度依存性

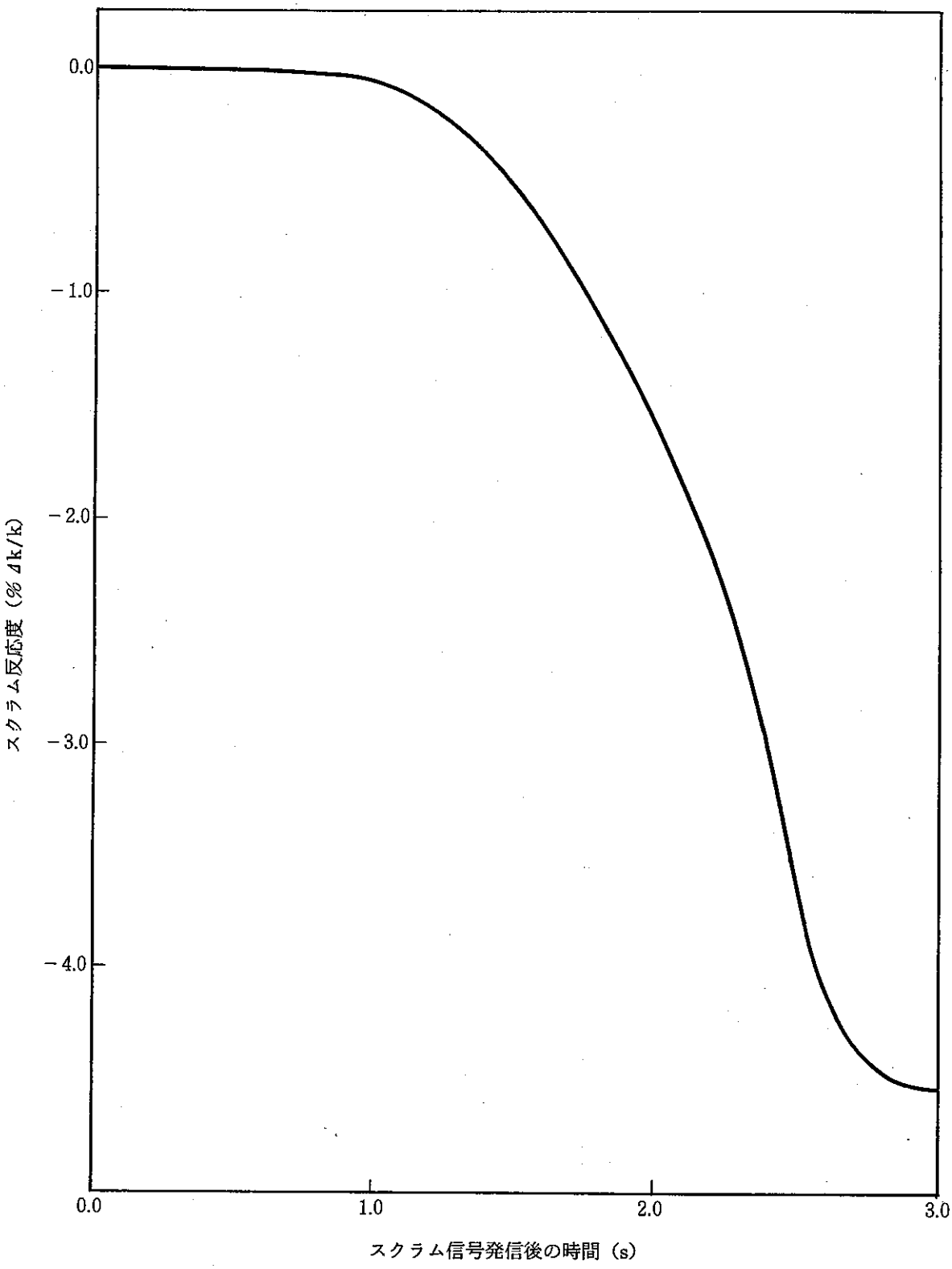


図 4.11 スクラム反応度の投入曲線

5. 解析結果及び考察

5.1 DBE解析(パス⑤)

DBE解析の基準ケース及び感度解析ケースにおける計算結果をまとめて表5.1に示す。

5.1.1 基準ケース解析

基準ケースにおける炉出力、燃料・冷却材温度の変化及び反応度の変化を図5.1~図5.4に示す。

基準ケースにおける0°方向及び45°方向の炉心径方向出力分布を炉心高さ毎に図5.5~図5.8に、引抜き制御棒近傍のホッテストチャンネル(I=25,J=15)及び引抜き制御棒から離れた他のチャンネルにおける軸方向出力分布を図5.9及び図5.10に示す。なお、出力分布は各経過時間毎に炉心平均出力で規格化している。1点近似解析に用いた出力分布は、制御棒引抜き前の分布であるため、図5.7及び図5.8に示す1点近似解析における出力分布は、3次元解析の分布のうち初期(t=0)での分布に等しい。制御棒引抜き高さの中間位置における制御棒引抜き開始時及び引抜き停止時の3次元出力分布を図5.11に示す。なお、引抜き停止時の出力分布は、引抜き開始時の出力に対する変化率で示した。

制御棒の引抜きに伴う全出力ピーキング係数(TPF)の引抜き長依存性を図5.12に示す。制御棒引抜き長が200cm前後で、TPF発生位置は軸方向メッシュ点でK=3からK=10に変化する。

(1) 事象の特徴

パス⑤では、制御棒引抜き開始後約16秒という短時間で「炉周期短」に達し、制御棒引抜き停止がかかる。約90秒で「炉周期短短」且つ定格出力の10^{-4}%(以下出力は定格出力に対する割合で示す)のスクラム出力レベルに達して事象が収束する。最大出力はどのケースでもスクラム出力レベルにほぼ等しく、十分低い出力レベルであるので、燃料温度は初期状態のまま変化しない。従って、この事象では反応度フィードバックもなく、制御棒引抜き停止までの時間と投入反応度(炉周期)が各ケースの着目点となる。

(2) 出力分布の変化

図5.5(1)に示すように、制御棒引抜き高さの中間位置における3次元解析の径方向出力分布は、制御棒の引抜きとともに制御棒近傍チャンネルでのみ変化していることを示している。本事象では、制御棒の引抜き長は全長の約1/4(約1m)であるため、図5.5(2)及び(3)に示すように、炉心中央部より上部では径方向出力分布の変化は極めて小さい。

同様に、3次元解析における軸方向出力分布から、制御棒の引抜かれる炉心下部のみ引抜きに伴う出力の増大がみられる。従って、SURMの高さで

は中性子束分布の変化は無視できる。制御棒引抜き前の軸方向出力分布をみれば、炉心上部にピーキングを生じているので、引抜きに伴いTPFは一旦低下し、再び上昇して引抜き時に最大(2.45)になる(図5.12参照)。

(3) 1点近似と3次元解析との比較

制御棒引抜きに伴う出力分布の歪を考慮しない1点近似解析では、3次元解析に比べわずかに制御棒引抜き停止時間が遅れ、そのため投入反応度が0.3¢だけ大きくなる。その結果、逆にスクラムに到る時間(以下スクラム時間と呼ぶ、約91秒)が1.3秒早まる。しかし、いずれの結果も十分低出力のため燃料及び冷却材の温度上昇はなく、燃料エンタルピーは初期状態のままである。

1点近似解析の方がわずかに制御棒引抜き停止が遅れた理由は、制御棒引抜き停止までの制御棒引抜き長が全長の約1/4で出力分布の歪は小さいが、引抜きに伴う分布の歪がSURM位置での中性子束時間変化に影響を与え、3次元解析のSURM位置での中性子束の変化が1点近似解析のそれよりわずかに大きくなったためと考えられる。

5.1.2 DBE感度解析

(1) 制御棒反応度価値(3次元及び1点近似解析)

① 過大投入反応度

反応度投入率が基準値の1.5倍である過大投入反応度を使用した感度解析における炉出力、燃料・冷却材温度の変化及び反応度の変化を図5.13～図5.16にそれぞれ基準ケースの結果と比較して示す。

基準ケースとの比較で明らかなように、過大投入反応度を使用すれば、それに応じて投入反応度も大きくなるので、基準ケースに比べて制御棒引抜き停止レベルに達する時間が短くなり、スクラムによる収束も早まる。この結果、制御棒引抜き停止時間及びスクラム時間は、基準ケースの場合に比べて26%短縮する。しかし、反応度投入率を1.5倍大きくしたにも拘わらず、投入反応度の増加量はわずか11%にとどまっている。投入反応度が11%大きくなった理由は、初期炉周期が基準ケースに比べて短いため、引抜き停止信号発生後の遅れ時間内でのオーバーシュートが大きくなるためである。投入反応度が大きくてもスクラム下限の出力レベルでスクラムするため、最大出力は基準ケースの場合とほぼ同じであり、温度やエンタルピーも変化しない。

1点近似及び3次元両解析結果を比較すれば、基準ケースの場合と同様に投入反応度で1%以下(0.4¢)で大きな差はなく、3次元解析の方がやや制御棒引抜き停止時間が早くなっている(0.1秒)。

② 過小投入反応度(S字反応度)

制御棒反応度価値が基準値の0.7倍である過小投入反応度を使用したDBEケースの感度解析を行った結果、制御棒引抜き停止はかかるものの炉周期が10秒以下になることはないので、「炉周期短短」のスクラム条件に達せず、15%出力まで出力上昇後TPM高高でスクラムする結果となった。

過小投入反応度を使用した場合の解析結果を表5.1に示す。炉出力及び燃料・冷却材温度の変化及び反応度の変化を図5.17~図5.20に示す。0°方向及び45°方向の炉心径方向出力分布を炉心高さ毎に図5.21~図5.24に示す。引抜き制御棒近傍のホッテストチャンネル及び制御棒から離れた他のチャンネルにおける軸方向出力分布を図5.25及び図5.26に示す。制御棒引抜き高さの中間位置における制御棒引抜き開始時及び引抜き停止時の3次元出力分布を図5.27に示す。また、炉心高さ毎の径方向燃料温度分布の変化及び径方向炉心各チャンネルにおける軸方向燃料温度分布の変化を、図5.28~図5.30に示す。

i) 事象の特徴

過小投入反応度を使用すれば、単位引抜き長当たりの反応度投入率は基準ケースより小さくなるので、投入反応度はパス⑤の基準ケースに比べ約20%小さくなる。しかし、過小投入反応度を使用の場合、パス⑤の基準ケースに比べて制御棒引抜き長が大きくなり炉心高さの約2/3に達する。この結果、出力分布は径方向、軸方向ともに基準ケースに比べて変化が大きい。

投入反応度が小さくなるほど事象の進展が緩慢になるので、制御棒引抜き停止時間は基準ケースに対する時間より2倍以上遅れる。初期は十分ゆっくり出力上昇し、引抜き途中から上昇率がやや加速されるが、結果的にはスクラム条件に到るまで時間がかかり、6~7分を要する。このためパス⑤の基準ケースに比べて事象の収束が遅れ、燃料最高温度は約100°C上昇して、パス⑥の基準ケース程度のフィードバック反応度が投入される。

ii) 1点近似と3次元解析との比較

表5.1及び図5.17~図5.20に示すように、過小投入反応度を使用した場合、1点近似及び3次元両解析手法の差が基準ケースに比べて、制御棒引抜き停止時間、スクラム時間及び投入反応度に大きく現れる結果になっている。制御棒引抜き停止検出時間は3次元解析の方が1点近似解析に比べ約7%(3秒)早くなっているので、投入反応度は約4¢小さくなる。従って、スクラム時間については、逆に3次元解析の方が約30%(100秒)も遅くなっている。更に燃料温度や燃料エンタルピーも3~4%異なる。

このように反応度投入が緩やかで引抜き長が大きい場合には、引抜きに伴うSURM位置での中性子束の変化率及び出力ピーキング係数がそれぞれの解析手法で異なる傾向が大きいため、両解析結果の差は拡大する。この結果、投入反応度が小さいことも相まって特に「TPM高高」によるスクラム時間では、その差がさらに拡大し約100秒に及ぶ。しかし、スクラム信号発信後のオーバーシュートは無視できることやスクラムまでの時間が6~7分にも及ぶことを考えれば、最高温度や燃料エンタルピーについての両手法間での差は大きくはないといえる。

以上のように1点近似解析において、出力分布を制御棒引抜き前の分布に設定すれば、投入反応度は3次元解析に比べて11%過大評価するが、燃料温度やエンタルピーは最大4%過小評価となる。この投入反応度の増大は、事象の収束までの時間を逆に短縮させるので、結果的には燃料エンタルピーの過小評価の程度は投入反応度の相違ほどには波及していない。

(2) 拡散計算ステップ数(3次元解析)

3次元解析において拡散計算ステップ数を基準ケースより約2倍細分化した場合の炉出力、燃料・冷却材温度の変化及び反応度の変化を図5.31及び図5.32に示す。

拡散計算ステップ数を約2倍に細分化して解析した結果は、基準ケース(3次元)の結果と比べ若干の感度をもつ。即ち、基準ケースより詳細な時間ステップにしたため、より厳密な出力分布にもとづいて過渡計算が実行されて制御棒引抜き停止条件に達する結果、制御棒引抜き停止が若干早くなり、それに応じて投入反応度もやや小さくなっている。投入反応度が小さくなれば炉周期が長くなるので、スクラム出力レベルに達するのに時間がかかる結果になる。投入反応度、制御棒引抜き停止時間及びスクラム時間を基準ケースの結果と比べれば、約0.45$の投入反応度で0.4%(0.2¢)、約90秒と長いスクラム時間でも1.4%(1.3秒)の差しかない。従って、基準ケースにおける拡散計算ステップ数でも十分な計算精度の結果を与えていると判断できる。

(3) 制御棒引抜き場所(3次元解析)

制御棒引抜き場所を、炉心周辺部から炉心中央部に変更した場合の炉出力、燃料・冷却材温度の変化及び反応度の変化を基準ケースと比較して図5.33及び図5.34に示す。0°方向及び45°方向の炉心径方向出力分布を炉心高さ毎に図5.35及び図5.36に、引抜き制御棒近傍のチャンネル及び制御棒から離れた他のチャンネルにおける軸方向出力分布の変化を図5.37に示す。また、制御棒引抜き高さの中間位置における制御棒引抜き開始時及び引抜き停止時の3次元出力分布を図5.38に示す。なお、制御棒引抜き場所を炉心周辺部から中央部に変更すれば、ホッテストチャンネルの径方向位置は、基準

ケースの場合とは異なり炉心中心部の(I=15,J=15)チャンネルへ移動する。

制御棒引抜き場所を変化させた結果、図5.35及び図5.36に示すように径方向出力分布は、基準ケースとは異なり炉心中央部で変化が大きくなっている。周辺部での制御棒引抜きに比べ、引抜き制御棒近傍の軸方向出力分布は炉心下部での変化が特に大きい。この理由は、引抜き制御棒の更に内側に、半挿入制御棒があるからと考えられる。

計算結果は表5.1に示すように、基準ケースと同一の値になっている。これは出力が十分小さく、反応度フィードバックも生じないため、動特性計算が支配的になっているからである。即ち、引抜き場所が異なっても反応度投入率は基準ケースと同一であること、更にSURMの位置が両者とも引抜き高さの上部にあることから、引抜きによる出力分布の歪の影響を受けにくいからである。

従って、パス⑤のDBEケースでは、SURMの高さが一定であるので、制御棒引抜き場所は計算結果に影響を与えない。

(4) 設定出力分布(1点近似解析)

1点近似解析における設定出力分布を制御棒引抜き停止時又は全引抜き時の各分布とした場合の炉出力、燃料・冷却材温度及び反応度の変化を図5.39~図5.42に示す。制御棒引抜き停止時及び全引抜き時の各炉心における0°方向及び45°方向の炉心径方向出力分布を図5.43~図5.46に、それぞれのケースの引抜き制御棒近傍のホッテストチャンネル及び制御棒から離れた他のチャンネルにおける軸方向出力分布を図5.47及び図5.48に示す。

出力分布に、制御棒引抜き停止時の分布又は全引抜き時の分布を設定したいずれのケースでも、制御棒引抜き停止時間、投入反応度等の基準値は基準ケース(1点近似)の場合と同一の値となっている。この理由は、反応度投入を出力分布とは独立に入力すること及び出力が十分低くフィードバック反応度がないことで、これらの計算結果はほぼ動特性計算によって決まるためである。従って、温度上昇を伴わないパス⑤の事象では、解析結果に設定出力分布の感度はないことを示している。

(5) 総合反応度

1点近似解析において総合反応度を使用したケースにおける炉出力、燃料・冷却材温度の変化及び反応度の変化を図5.49及び図5.50に示す。

総合反応度使用の場合は、基準ケースに比べて投入反応度が大きくなるので、制御棒引抜き停止及びスクラムまでの事象の推移が早くなる。即ち制御棒引抜き停止時間及びスクラム時間は、基準ケースに比べ26%短くなり、それぞれ4秒、24秒短縮する。過大投入反応度及び正側反応度係数を使用しても、スクラム時の最大出力レベルは基準ケースと共通である。何故なら基準ケースと同様に、スクラム制限出力レベル(10^{-4}%)に達してすぐスクラム

が生じるからである。最大出力は十分小さいため、燃料温度やエンタルピーは基準ケースの場合と変わらない。

5.1.3 DBE解析のまとめ

(1) 投入反応度は約0.45$となり、約90秒でスクラムするが、最大出力は$10^{-4}$%で十分低いので燃料温度上昇を伴わない。

(2) 最大出力が十分小さくフィードバック反応度も加わらないので、結果的に殆んど動特性計算によって事象が支配される。

(3) 制御棒引抜き長が全長の約1/4と小さく、1点近似及び3次元両解析でSURM位置での中性子束の変化にわずかな差が生じるものの、投入反応度、制御棒引抜き停止時間、スクラム時間についての両解析結果の差は小さい。

(4) 過小投入反応度を使用すれば、「炉周期短短」の条件には到らない。制御棒引抜き長が大きく引抜きに伴う出力分布の歪が大きくなるため、特に反応度、制御棒引抜き停止時間及びスクラム時間について1点近似解析と3次元解析の差は大きい。

(5) 過小投入反応度を使用した1点近似解析では、出力分布を制御棒引抜き前の分布に設定すれば、3次元解析に比べて投入反応度は大きくなるが、燃料エンタルピーは逆に小さくなる。

(6) 制御棒引抜き停止及びスクラムが各信号設定条件に従って作動し、炉周期、投入反応度及びイベント(機器作動)時間との対応関係も物理的にみて妥当であると考えられる。スクラム時の最大出力もスクラム設定出力レベルと整合がとれている。

(7) 投入反応度又は全反応度が大きくなれば、スクラム時間が短縮し、かつスクラム後の出力オーバーシュートが大きくなる感度解析結果は物理的にみて妥当な挙動を示すものと考えられる。

5.2 BDBE解析(パス⑥)

BDBE解析の基準ケース及び感度解析ケースにおける計算結果をまとめて表5.2に示す。

5.2.1 基準ケース解析

炉出力、燃料・冷却材温度の変化及び反応度の変化を図5.51～図5.54に示す。0°方向及び45°方向の炉心径方向燃料温度分布の変化及び径方向炉心各チャンネルにおける軸方向燃料温度分布の変化を、図5.55～図5.57に示す。

(1) 事象の特徴

制御棒引抜き停止時まではパス⑤と同一事象であり、短時間(約16秒)で引抜き停止がかかるが、最大出力は15%まで達するので、制御棒引抜き前に比べて燃料温度で約100°C、エンタルピーで約4cal/gそれぞれ上昇する。制御棒引抜き停止以降、事象の後半からフィードバックが加わり、ドップラー反応度で最大約20¢投入される。

スクラム信号発生後の出力オーバーシュートが若干生じるが、最大出力はほぼスクラム出力レベルである。

(2) 1点近似と3次元解析との比較

制御棒引抜き長が炉心高さの約1/4と小さく、SURM位置での中性子束分布に影響を与えにくいので、引抜き停止時の投入反応度の計算結果には1点近似及び3次元両解析の差が殆んど生じていない。ただ、SURM位置での中性子束の変化に若干の差がでるため、制御棒引抜き停止時間は、1点近似解析の方がわずかに遅れる傾向を示す。そのため、投入反応度は1点近似解析の方がわずかに大きくなるので、「TPM高高」によるスクラム時間で約3秒(1.5%)の差を生じている。一方、1点近似解析の方が3次元解析よりスクラム時間が早いにも拘らず、燃料温度は高くなっている。この理由は、3次元解析では制御棒引抜き前の炉心で出力ピーキング係数が最大(1.92)であり、制御棒引抜き停止時にはそれが低下する(1.88)ためである。

取替炉心サイクル初期の対象炉心では、制御棒引抜き前よりも引抜き停止時の方が出力ピーキングが小さくなるので、引抜き前の出力分布を設定した1点近似解析の方が3次元解析に比べて燃料エンタルピーはやや大きくなる。

5.2.2 BDBE感度解析

(1) 制御棒反応度価値(3次元及び1点近似解析)

制御棒反応度価値を基準値の1.5倍に設定した場合の炉出力、燃料・冷却材温度の変化及び反応度の変化を基準ケースと比較して図5.58～図5.61に示す。

① 基準ケースとの比較

制御棒反応度価値を基準値の1.5倍とすれば、制御棒引抜き停止時での投入反応度は基準ケースに比べて11%(5¢)増加する。基準ケースに比べて、投入反応度が5¢大きくなった分だけスクラム出力レベルに達する時間は56秒も早くなり、フィードバック反応度も6.5¢小さい。この結果、燃料温度は基準ケースに比べて、約6~8℃緩和される。

② 1点近似と3次元解析との比較

1点近似解析の結果は、他ケースと同様に3次元解析に比べて、SURM位置での中性子束の変化に若干の差がでるため、わずかに投入反応度が大きくなる。このわずかな投入反応度の差が結局はスクラム時間を早め、燃料温度上昇もわずかに緩和されるものの、熱的諸量に対する両解析手法の差は殆んど無視できる。この理由は、基準ケースに比べてスクラム時間が約1分早いので、燃料温度上昇は出力ピーキング係数の大小に追随するというよりも、むしろスクラム時間の長さに依存するためと考えられる。即ち、燃料温度の上昇は出力上昇より時間遅れがあるからである。

(2) 反応度係数(3次元及び1点近似解析)

ドップラー係数、冷却材温度係数のそれぞれの基準値に正側の値を考慮した場合の炉出力、燃料・冷却材温度の変化及び反応度の変化を図5.62~図5.69に示す。

フィードバック反応度係数の感度解析については、制御棒引抜き停止まではフィードバックが加わらないのでそれまでの結果は基準ケースと変わらない。従って、本感度解析については、制御棒引抜き停止以降の結果を考察する。

①.ドップラー係数

ドップラー係数に20%正側の値を考慮した値を使用すれば、スクラム時のドップラー反応度は、基準ケースに比べて25~30%減少するのでスクラム信号発生時刻は早まる。その結果、温度やエンタルピー上昇は緩和されるとともに、冷却材温度反応度もわずかに抑制される。

SURMが制御棒引抜き長より上部にあるので、SURM位置での中性子束の変化に3次元及び1点近似各解析手法で差が生じにくく、投入反応度はほぼ等しくなっており、両手法間での差は燃料温度で約1℃と小さい。しかし、熱的諸量については、制御棒引抜き前と引抜き停止時での出力ピーキング係数(各1.92、1.88)の差だけ1点近似解析の方が3次元解析に比べて大きくなっている。

② 冷却材温度係数

ドップラー係数に比べて、冷却材温度係数の正側値は相対的に大きいので(図4.9及び図4.10参照)、この正側値を使用すれば冷却材温度反応度は基準

ケースに比べて約9¢正側になり、結果的に全反応度が大きくなってスクラム時刻は約13秒早まる。スクラム時刻が早くなることはドップラー反応度も抑制されるので、温度上昇を抑制させ、基準ケースに比べて熱的諸量は小さくなっている。

3次元解析、1点近似解析の各投入反応度の差は、①と同様に、SURM位置での中性子束の変化の相異によるものであるが、制御棒引抜き前と引抜き停止時での出力ピーキング係数の差の分だけ、熱的諸量は1点近似解析の方が大きくなることを示している。

(3) 設定出力分布(1点近似)

出力分布を制御棒引抜き停止時の分布又は全引抜き時の分布にそれぞれ設定した場合の炉出力、燃料・冷却材温度の変化及び反応度の変化を基準ケースと比較して図5.70~図5.73に示す。

制御棒引抜き停止時までは、設定出力分布をいずれの引抜き位置での分布にしても、投入反応度や引抜き停止時間は全く変化しないことが分る。この理由は、5.1.2 DBE感度解析 (4)設定出力分布 で述べたように、制御棒引抜き停止までは反応度フィードバックがなく、反応度投入を設定出力分布とは独立に入力しているためである。

しかし、パス⑤の事象とは異なり、パス⑥の事象では、出力上昇が約200秒まで続くことから燃料温度が上昇し、制御棒引抜き停止以降は反応度フィードバックが生じる。この結果、出力分布に対応した炉心内温度分布を形成するため、最高温度やエンタルピーは設定出力分布によって変化している。即ち、出力分布に対応してフィードバック反応度(ドップラー反応度)が加わっており、最高温度やエンタルピーは出力ピーキング係数に応じて変化する結果となっている。

制御棒引抜き停止時までの出力ピーキング係数は、引抜き前のそれと比較して大きく変化していないので(図5.12参照)、ホッテストチャンネルの燃料温度や燃料エンタルピーは基準ケースと比べて殆んど変わらない。しかし、全引抜き時の出力分布を設定すれば、出力ピーキングが大きくなるので、他の出力分布設定のケースと比べて熱的諸量を大きくする結果になることを示している。

(4) 総合反応度(1点近似解析)

引抜き制御棒の反応度投入率及びフィードバック反応度係数を同時に正側に設定した場合の炉出力、燃料・冷却材温度の変化及び反応度の変化を基準ケースと比較して図5.74及び図5.75に示す。

総合反応度を用いた結果、投入反応度は基準ケースに比べて11%増加する。また、スクラム時間が大幅に短縮するため、燃料へのエネルギー蓄積は小さく、燃料温度は基準ケースに比べて約20%(25℃)小さくなる。

このように、起動時制御棒引抜き事象では総合反応度の使用はそのまま熱的諸量を大きくする結果には到らない。

5.2.3 1点近似解析の特性

パス⑥では、制御棒引抜き長はパス⑤と同様に小さいが、約20¢のフィードバック反応度が加わるほど最大出力が上昇するので、1点近似、3次元両解析結果の差はパス⑤の場合より大きくなる。

制御棒引抜き停止位置までは、制御棒引抜きとともに出力ピーキング係数は低下し、その後全引抜き時に向かって上昇してゆく(図5.12参照)ので、熱的諸量の計算結果を3次元解析結果に比べて過大評価し、その傾向は、出力分布をどのように設定するかによって変化する。即ち、パス⑥の場合は、設定出力分布を引抜き停止時、引抜き前、全引抜き時の各分布にした順に、熱的諸量の計算結果は大きくなる。

5.2.4 BDBE解析のまとめ

(1) 制御棒引抜き停止時まではDBEパス⑤と同一であるが、引抜き停止以降は最終的には15%出力まで達するので、温度上昇と反応度フィードバックを伴う。

(2) 制御棒引抜き長が小さいので、SURM位置での中性子束の変化に及ぼす出力分布の歪の影響は小さいが、フィードバック反応度や出力分布に依存するスクラム時間や熱的諸量については1点近似、3次元各解析モデルで若干の差が生じる。

(3) 1点近似解析における設定出力分布を制御棒引抜き前の分布とすれば(基準ケース)、3次元解析に比べて投入反応度はやや大きくなるが、熱的諸量に関しては出力ピーキング係数が最大となる全引抜き時の出力分布に設定した場合に最も大きくなる。

(4) 反応度投入率やフィードバック反応度係数を同時に正側値に設定すれば、基準ケースに比べて投入反応度は大きくなるが、スクラムが早くなるので逆に熱的諸量の計算結果は小さくなる。

(5) 最大出力の増加に伴って、燃料温度及び冷却材温度が上昇し、それぞれの温度上昇幅に対応したフィードバック反応度が加わっている。フィードバック反応度の大きさは、反応度係数と温度幅から判断して物理的にみて妥当であると考えられる。

(6) ホッテストチャンネルの燃料温度等熱的諸量の解析結果が、フィードバック反応度や出力分布の形状に対応して変化していることは、定性的に妥当な挙動を示すものと考えられる。

5.3 BDBE参考ケース解析(パス⑧)

BDBE参考ケース解析の基準ケース及び総合反応度感度解析ケースにおける計算結果をまとめて表5.3に示す。

5.3.1 基準ケース解析

炉出力、燃料・冷却材温度の変化及び反応度の変化を図5.76～図5.79に示す。0°方向及び45°方向の炉心径方向出力分布を炉心高さ毎に図5.80～図5.83に、引抜き制御棒近傍のホッテストチャンネル及び引抜き制御棒から離れた他のチャンネルにおける軸方向出力分布を図5.84及び図5.85にそれぞれ示す。また、制御棒引抜き高さの中間位置における制御棒引抜き開始時及びスクラム時の3次元出力分布を図5.86に示す。

(1) 事象の特徴

パス⑧では制御棒引抜き停止がないため、制御棒引抜き量は全長の約1/2とDBEケースに比べて大きくなり、投入反応度は約0.9$に達する。このため、炉周期はきわめて短くなり(<1秒)、DBEケースの場合の約1/3の時間(32秒)で10^{-4}%出力に達してスクラムする。DBEケースに比べ出力上昇が早いため、スクラム後の出力オーバーシュートが大きくなっているが、最大出力は10^{-4}%台に留まっており、反応度フィードバックも生じない。

投入反応度は0.88$でDBE解析の場合の約2倍(DBE解析では0.45$)、最大出力は同様に約3倍となった。最大出力がDBEケースに比べて大きくなったのは、スクラム信号発生後の出力オーバーシュートが大きいためである。パス⑧では投入反応度が1$近くであるにも拘らず事象の収束が早いため、燃料温度、燃料エンタルピー及び冷却材温度ともに初期状態から変化しない。

(2) 1点近似及び3次元解析との比較

1点近似解析と3次元解析とも計算結果はすべて一致している。本解析で、1点近似と3次元両解析結果に差異が見られない理由は、炉周期が1秒以下で極めて短いため、制御棒引抜きに伴う出力分布の歪の効果がSURM位置での中性子束の変化率に影響を与えにくいためと考えられる。

5.3.2 総合反応度感度解析

炉出力、燃料・冷却材温度の変化及び反応度の変化をそれぞれ図5.87、図5.88に示す。総合反応度使用の場合には基準ケースに比べ更に投入反応度が大きく、炉周期が益々短くなるので、スクラムによる事象の収束はより早くなる。しかし、反応度投入率は基準ケースの1.5倍であるにも拘らず、投入反応度は基準ケースの場合の7%(7¢)増加にとどまった。

基準ケースに比べてスクラム信号発生後の遅れ時間内でのオーバーシュートが更に大きくなるので、最大出力は約2倍に増加するものの、依

然として最大出力は10^{-4}%台で小さく基準ケース同様に温度上昇は生じない。

5.3.3 BDBE参考ケース解析のまとめ

(1) 投入反応度は1$近くになるが、スクラム出力レベルに達する時間が約32秒と短いため、燃料温度上昇まで到らない。

(2) 炉周期が極めて短いのでスクラム後の出力オーバーシュートはDBEケースに比べてかなり大きいが、最大出力は十分小さく10^{-4}%台に留まっている。

(3) 投入反応度が大きいものの事象の終結が早く温度上昇もないので、事象の推移は結果的に動特性計算によって支配されている。従って、1点近似及び3次元両解析結果に差は全く生じない。

(4) 設定スクラム条件からみて、DBEケースより投入反応度が大きくなり、しかも応答遅れ時間内での出力オーバーシュートが大きくなること、投入反応度を更に大きくすれば、スクラム時間が短縮し、オーバーシュートにより最大出力も増加することは定性的に妥当な挙動を示すものと考えられる。

5.4 感度解析結果のまとめ

実証炉の起動時制御棒引抜き事象(低温低出力時)におけるEUREKA-ATRコードを用いた感度解析から、以下のことが判明した。

(1) 3次元及び1点近似解析共通

① 反応度投入(反応度投入率)

i) 反応度投入率を大きくすると、投入反応度も大きくなる。

ii) DBE解析では、最大出力が低いため燃料エンタルピーに対する感度はない。しかし、最大出力が15%になるBDBE解析では、制御棒反応度投入が大きい方が燃料エンタルピーは小さくなる。

iii) DBE解析では投入反応度がある値より小さくなればスクラム信号が変化する。この場合、スクラム信号は「原子炉周期短短」から「TPM高高」となって、燃料エンタルピーは大きくなる。

iv) 投入反応度が大きくなると、3次元及び1点近似両解析結果の差は小さくなる傾向である。

② 反応度係数

i) 制御棒引抜き停止時の出力が低いため投入反応度に対する感度はない。

ii) DBE解析では、最大出力が低いためスクラム直前の全反応度に対する感度はない。しかし、最大出力が15%になるBDBE解析では、正側の反応度係数を使えば、全反応度が大きくなる。

iii) DBE解析では、最大出力が低いため燃料エンタルピーに対する感度はない。しかし、最大出力が15%になるBDBE解析では、正側の反応度係数を使えば、燃料エンタルピーは小さくなる。

iv) 正側の反応度係数を用いても3次元及び1点近似両解析結果の差は、基準ケースと同程度である。

(2) 3次元解析

① 拡散計算ステップ数

出力変化割合で10倍または1/10倍毎に拡散計算を実行させる現状の拡散計算ステップ数は妥当な設定である。

② 制御棒引抜き場所

反応度投入率を制御棒引抜き位置に対応させていないので、DBE解析では投入反応度に対する感度はない。

(3) 1点近似解析

① 設定出力分布

i) 反応度投入率が出力分布とは独立に入力されるので、投入反応度に対する感度はない。

ii) DBE解析では、最大出力が低いため燃料エンタルピーに対する感度はない。しかし、最大出力が15%になるBDBE解析では、出力ピーキング係数が大きい出力分布を設定した方が燃料エンタルピーは大きくなる。

② 総合反応度

i) 投入反応度及びスクラム直前の全反応度はともに、最も大きくなる。

ii) DBE解析では、最大出力が低いため燃料エンタルピーに対する感度はない。しかし、最大出力が15%になるBDBE解析では、燃料エンタルピーは最も小さくなる。

5.5 1点近似解析手法の特徴

DBE,BDBE及びBDBE参考各ケースの基準ケース又は感度解析ケースにおける1点近似及び3次元各解析結果から、本事象共通の1点近似解析手法上の特徴を3次元解析と比較して考察すれば以下のように要約される。

(1) 燃料温度上昇を伴わないDBE又はBDBE参考の各ケースでは、制御棒引抜き長の如何に拘らず、1点近似解析結果は3次元解析結果と有意な差はない。投入反応度が大きくなれば、制御棒引抜きに伴う出力分布の歪の効果が検出器位置での中性子束の変化率に影響を与えにくいため、両解析手法ともに同一の結果となる。

(2) 反応度投入が緩やかで、従って制御棒引抜き長が大きくなるケース(過小投入反応度)では、燃料温度上昇を伴うTPM高高のスクラムになるので、1点近似解析結果は3次元解析結果と異なる傾向になる。

(3) 燃料温度上昇を伴い、最大出力が高くなるBDBEケースでは、スクラム時の燃料温度、燃料エンタルピー等の熱的諸量に関する1点近似解析結果は、3次元解析結果と有意な差が生じる場合がある。特に、1点近似解析における設定出力分布については、その出力ピーキング係数が制御棒引抜き停止時の出力分布のそれより大きくなる分布に設定することにより、1点近似解析結果を3次元解析結果に比べて同等又は過大にすることができる。

(4) 燃料温度上昇を伴うBDBEケースでは、全反応度を小さくしてスクラムに至るまでの時間を長くするほど炉心への蓄積エネルギーが大きくなる。従って、1点近似解析における熱的諸量の結果を3次元解析のそれと比べて同等又は過大にするためには、過小反応度投入率又は/及び負側の反応度係数を用いればよい。

表5．1　起動時制御棒引抜事象ＤＢＥ（パス⑤）解析結果

解析項目			制御棒引抜停止時*1 時間 (sec)	制御棒引抜停止時*1 投入反応度 ($)	炉周期短短によるスクラム時*2 信号発生時間 (sec)	炉周期短短によるスクラム時*2 ﾌｨｰﾄﾞﾊﾞｯｸ反応度 ($)	炉周期短短によるスクラム時*2 最大出力 (×10⁻⁴%)	ホッテストチャンネル ペレット中心温度 (℃)	ホッテストチャンネル 燃料ｴﾝﾀﾙﾋﾟｰ (cal/g)	ホッテストチャンネル 冷却材温度 (℃)	ホッテストチャンネル 出力ﾋﾟｰｷﾝｸﾞ係数(ｽｸﾗﾑ時) (25,15,3)
基準ケース	3次元		16.5	0.453	91.6	0.0	1.09	20.0	1.07	20.0	1.88
	1点近似		16.6	0.456	90.3	0.0	1.09	20.0	1.07	20.0	1.92
感度ケース	制御棒反応度価値過大投入反応度（基準値 × 1.5）	3次元	12.2	0.504	67.7	0.0	1.13	20.0	1.07	20.0	1.89
		1点近似	12.3	0.508	66.4	0.0	1.13	20.0	1.07	20.0	1.92
	拡散計算ステップ数（3次元）		16.4	0.451	92.9	0.0	1.09	20.0	1.07	20.0	1.88
	制御棒引抜場所 （3次元）		16.5	0.453	91.6	0.0	1.09	20.0	1.07	20.0	1.91*3
	設定出力分布（1点近似）	引抜停止時	16.6	0.456	90.3	0.0	1.09	20.0	1.07	20.0	1.88
		全引抜時	16.6	0.456	90.3	0.0	1.09	20.0	1.07	20.0	2.45
	総合反応度*4 （1点近似）		12.3	0.508	66.4	0.0	1.13	20.0	1.07	20.0	1.92

解析項目		制御棒引抜停止時 時間 (sec)	制御棒引抜停止時 投入反応度 ($)	ＴＰＭ高高によるスクラム時 信号発生時間 (sec)	ＴＰＭ高高によるスクラム時 全反応度 ($)	ＴＰＭ高高によるスクラム時 ﾌｨｰﾄﾞﾊﾞｯｸ反応度*5 ($)	ＴＰＭ高高によるスクラム時 最大出力 (%)	ホッテストチャンネル ペレット中心温度 (℃)	ホッテストチャンネル 燃料ｴﾝﾀﾙﾋﾟｰ (cal/g)	ホッテストチャンネル 冷却材温度 (℃)	ホッテストチャンネル 出力ﾋﾟｰｷﾝｸﾞ係数(ｽｸﾗﾑ時) (25,15,3)
制御棒反応度価値過小投入反応度（基準値 × 0.7）	3次元	37.9	0.351	426.8	0.136	-0.231 0.016	15.0	127.3	5.52	59.8	1.93
	1点近似	40.6	0.390	329.0	0.174	-0.232 0.016	15.0	123.5	5.29	56.1	1.92

*1　炉周期＜２０秒　　*2　炉周期＜１０秒　＆　炉出力＞１０⁻⁴%
*3　位置：（１５，１５，１２）　　*4　制御棒反応度価値：基準値×１．５，ドップラー係数：基準値×0.8，冷却材温度係数：基準値＋5×10⁻⁵ΔK/K/℃
*5　上段：ドップラー反応度，下段：冷却材温度反応度

表５．２　起動時制御棒引抜事象ＢＤＢＥ（パス⑥）解析結果

解析項目			制御棒引抜停止時		ＴＰＭ高高によるスクラム時				ホッテストチャンネル			
			時間 (sec)	投入反応度 ($)	信号発生時間 (sec)	全反応度 ($)	ﾌｨｰﾄﾞﾊﾞｯｸ反応度*1 ($)	最大出力 (%)	ペレット中心温度 (℃)	燃料ｴﾝﾀﾙﾋﾟｰ (cal/g)	冷却材温度 (℃)	出力ﾋﾟｰｷﾝｸﾞ係数(ｽｸﾗﾑ時) (25,15.3)
基準ケース	３次元		16.5	0.453	203.6	0.250	-0.219 0.015	15.1	115.4	5.01	54.5	1.88
	１点近似		16.6	0.456	200.7	0.251	-0.221 0.015	15.1	117.2	5.04	54.2	1.92
感度ケース	制御棒反応度価値過大投入反応度（基準値 × 1.5）	３次元	12.2	0.504	147.8	0.314	-0.204 0.014	15.2	109.2	4.74	52.2	1.89
		１点近似	12.3	0.508	144.6	0.316	-0.207 0.014	15.2	108.9	4.69	51.7	1.92
	ドップラー係数（基準値 × 0.8）	３次元	16.5	0.453	195.8	0.304	-0.163 0.014	15.2	110.0	4.78	52.7	1.88
		１点近似	16.6	0.456	198.0	0.306	-0.164 0.014	15.2	111.1	4.81	52.2	1.92
	冷却材温度係数（基準値 $+5\times10^{-5}\Delta K/K/℃$）	３次元	16.5	0.453	190.4	0.356	-0.191 0.104	15.5	99.7	4.38	49.4	1.88
		１点近似	16.6	0.456	187.6	0.370	-0.190 0.104	15.4	102.1	4.42	49.3	1.92
	設定出力分布（１点近似）	引抜停止時	16.6	0.456	200.3	0.256	-0.215 0.015	15.1	115.8	5.02	54.6	1.88
		全引抜時	16.6	0.456	200.8	0.251	-0.221 0.015	15.1	146.1	6.22	63.1	2.45
	総合反応度*2	（１点近似）	12.3	0.508	135.6	0.464	-0.130 0.086	16.0	92.2	4.04	45.7	1.92

*1　上段：ドップラー反応度，下段：冷却材温度反応度
*2　制御棒反応度価値：基準値×１．５，ドップラー係数：基準値×0.8，冷却材温度係数：基準値$+5\times10^{-5}\Delta K/K/℃$

表５．３　起動時制御棒引抜事象ＢＤＢＥ参考ケース（パス⑧）解析結果

解析項目		炉周期短短によるスクラム				ホッテストチャンネル			
		信号発生時間 (sec)	投入反応度 ($)	ﾌｨｰﾄﾞﾊﾞｯｸ反応度 ($)	最大出力 (×10⁻⁴%)	ペレット中心温度 (℃)	燃料ｴﾝﾀﾙﾋﾟｰ (cal/g)	冷却材温度 (℃)	出力ﾋﾟｰｷﾝｸﾞ係数(ｽｸﾗﾑ時) (25,15,3)
基準ケース	3次元	32.2	0.880	0.0	3.8	20.0	1.07	20.0	1.88
	1点近似	32.2	0.880	0.0	3.8	20.0	1.07	20.0	1.92
総合反応度*1　（1点近似）		23.1	0.949	0.0	8.0	20.0	1.07	20.0	1.92

*1　制御棒反応度価値：基準値×１．５，ドップラー係数：基準値×0.8，冷却材温度係数：基準値＋5×10⁻⁵ΔK/K/℃

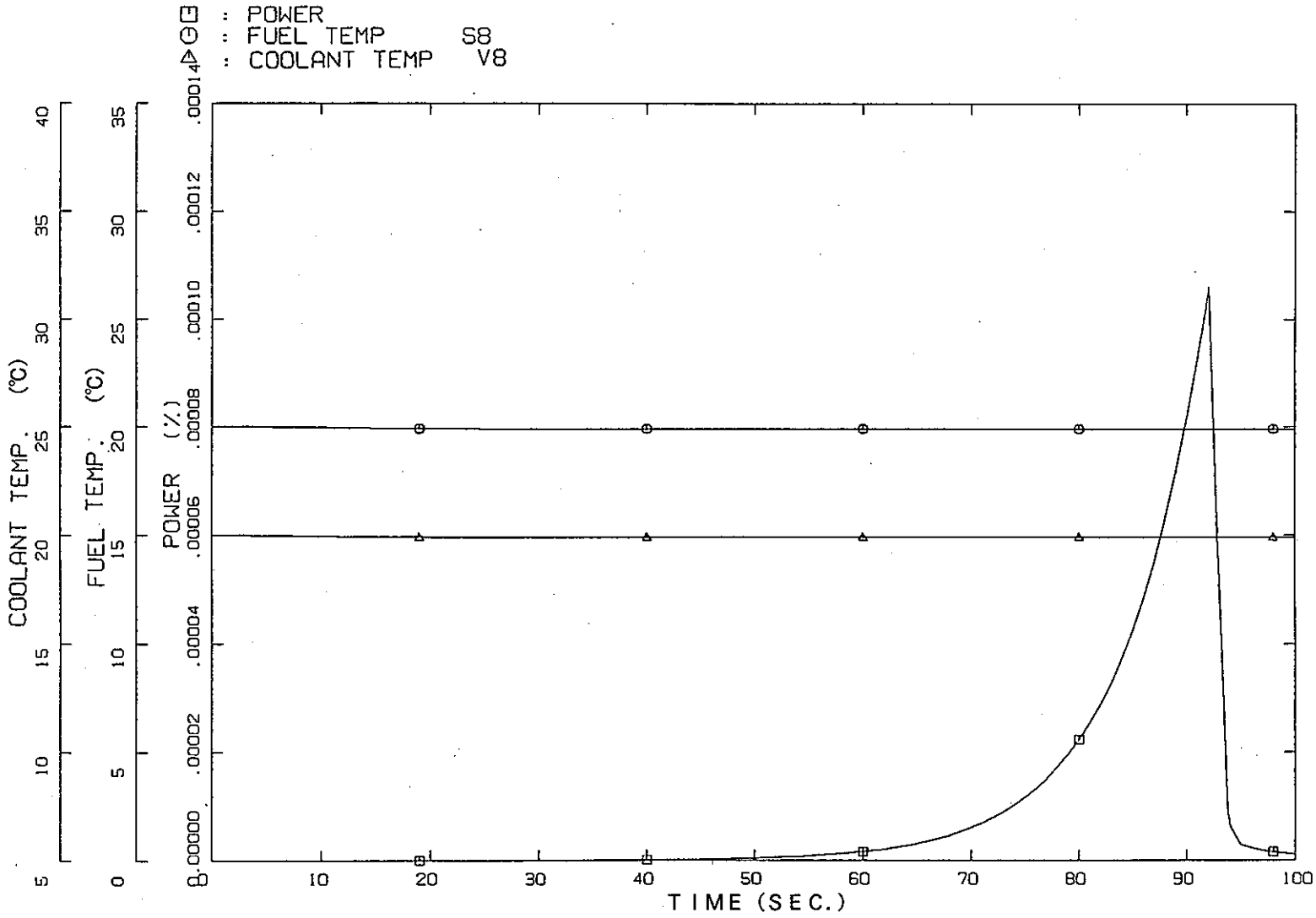


図5.1　ＤＢＥ(パス⑤)基準ケースの３次元解析における炉出力及び温度の変化

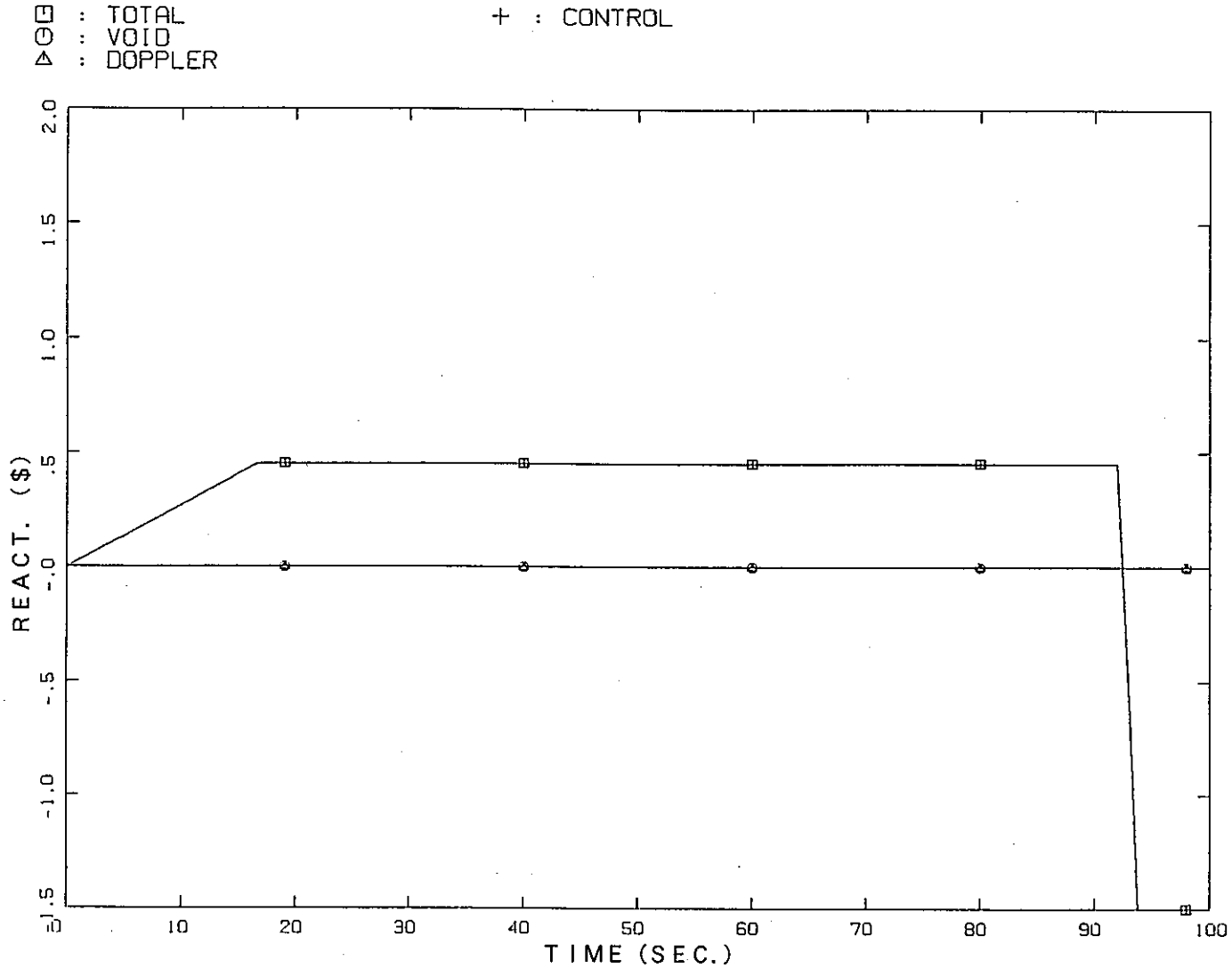


図5.2　ＤＢＥ(パス⑤)基準ケースの３次元解析における反応度の変化

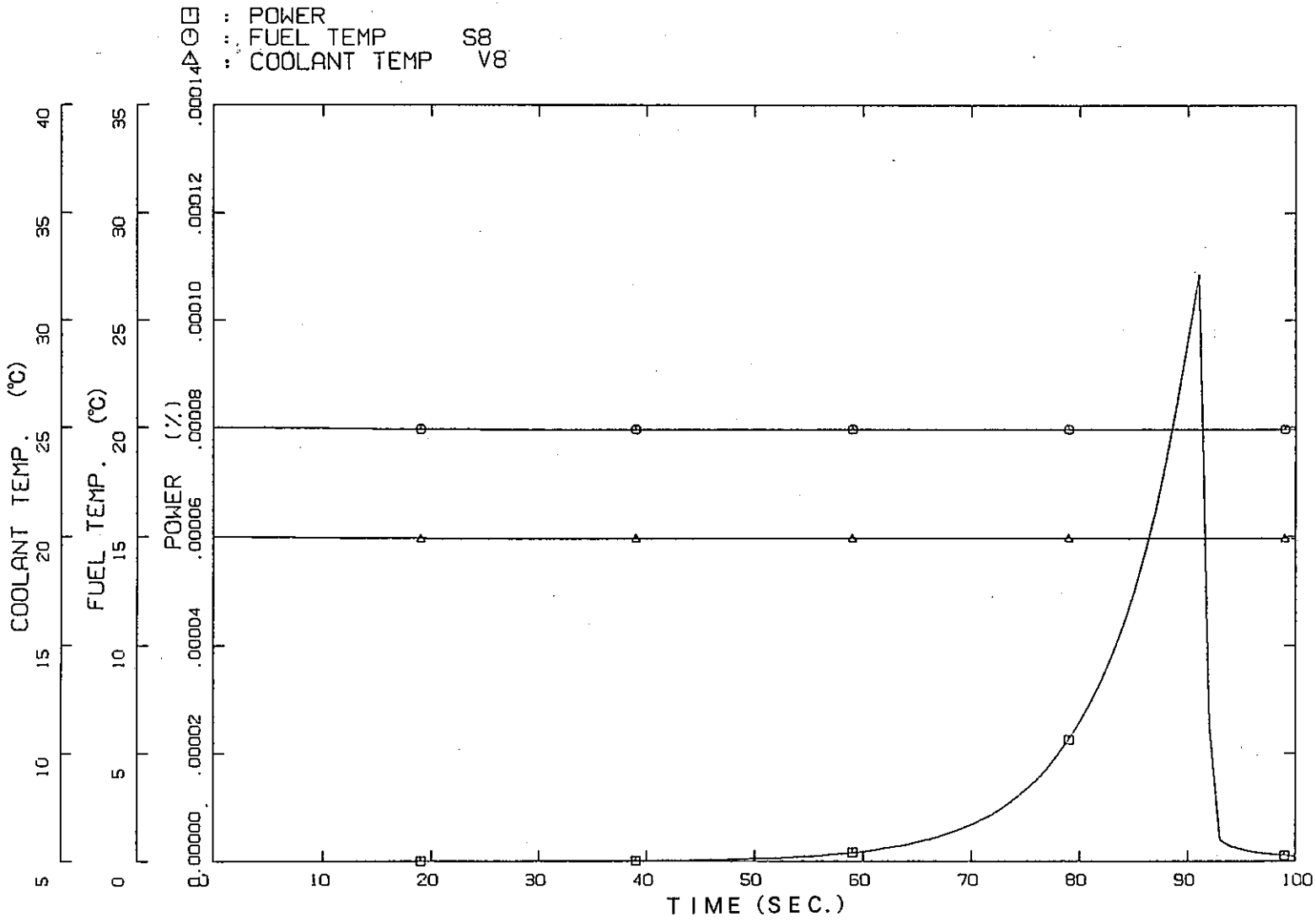


図5．3　ＤＢＥ(パス⑤)基準ケースの１点近似解析における炉出力及び温度の変化

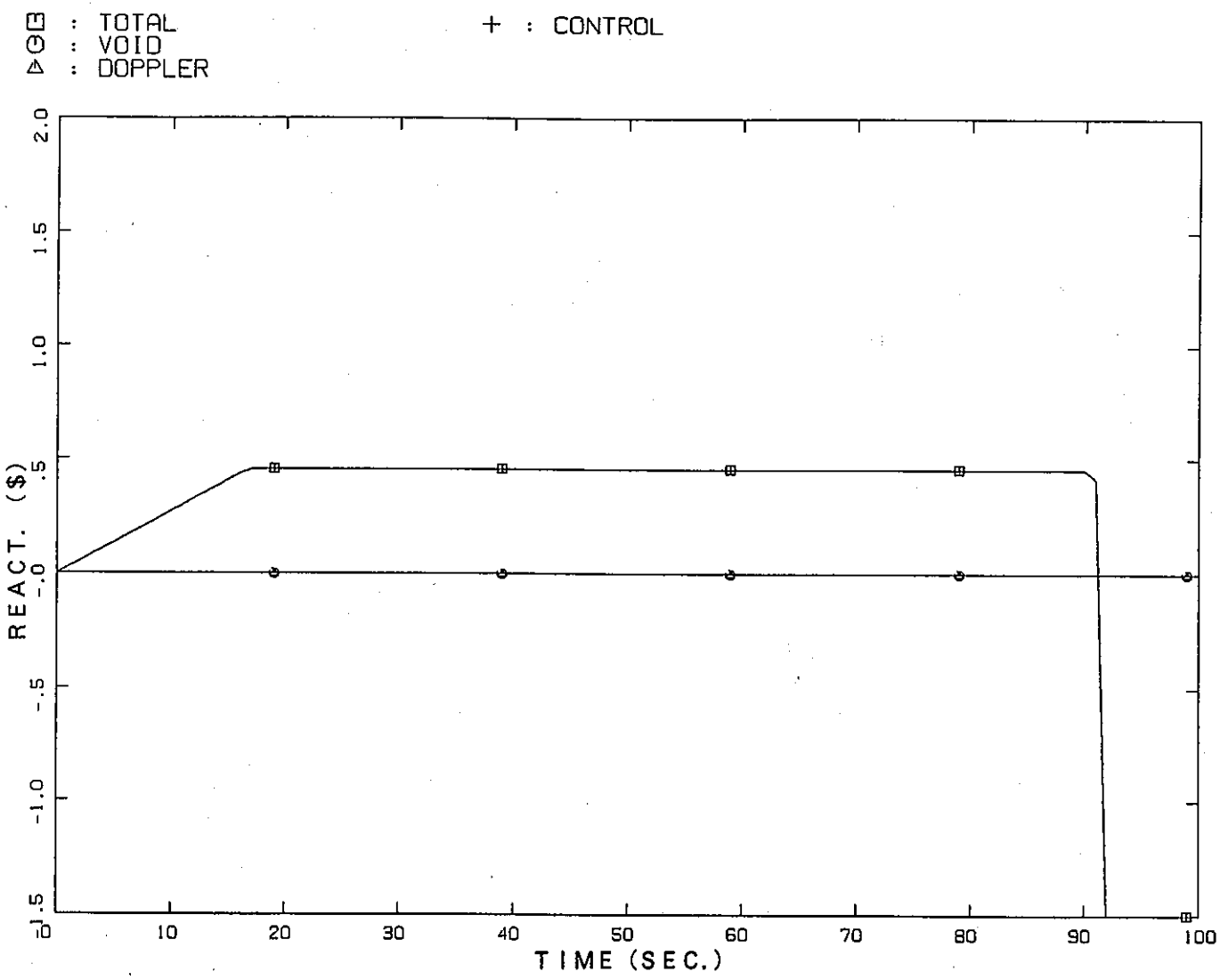
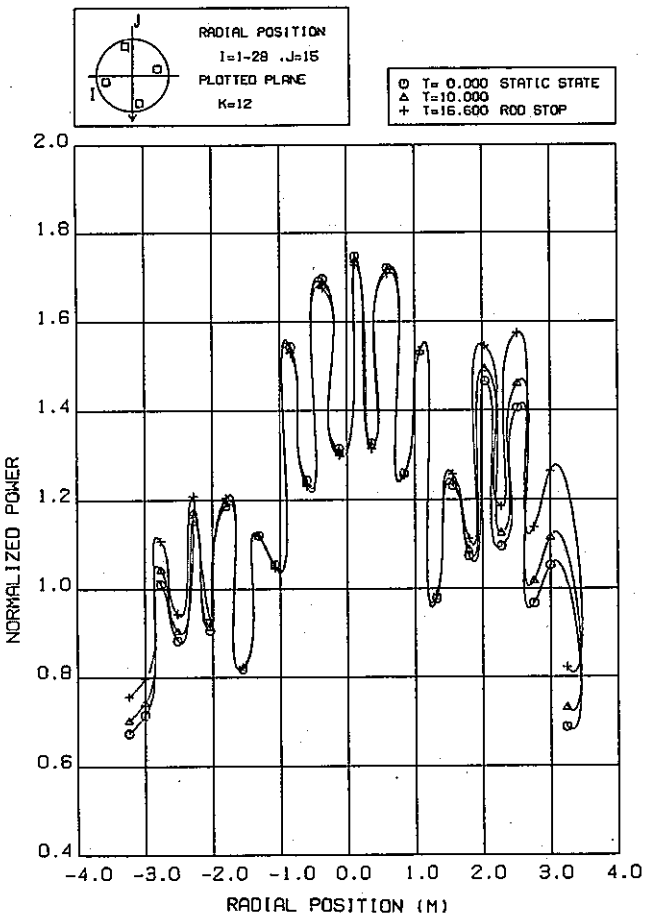
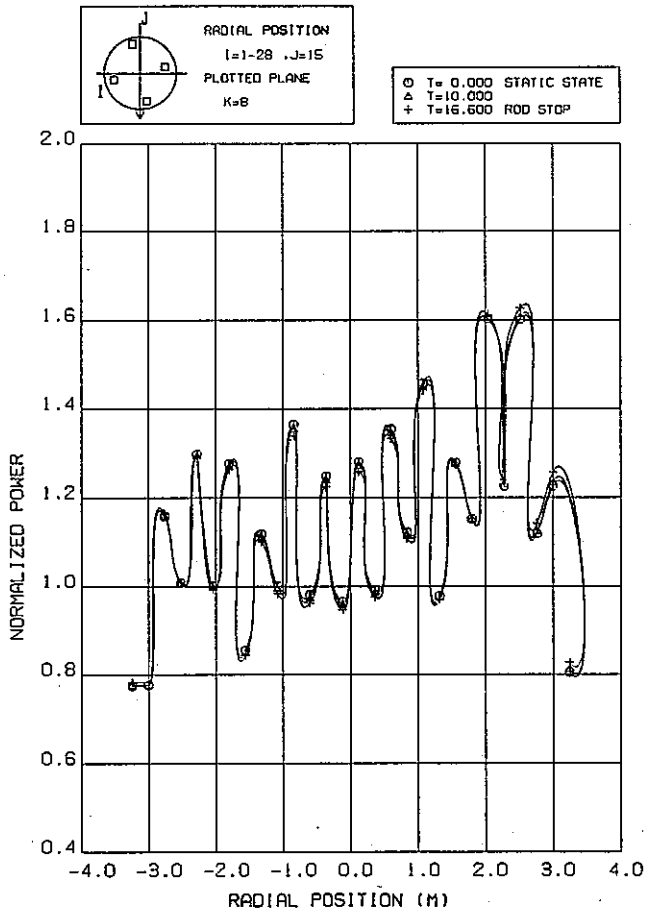


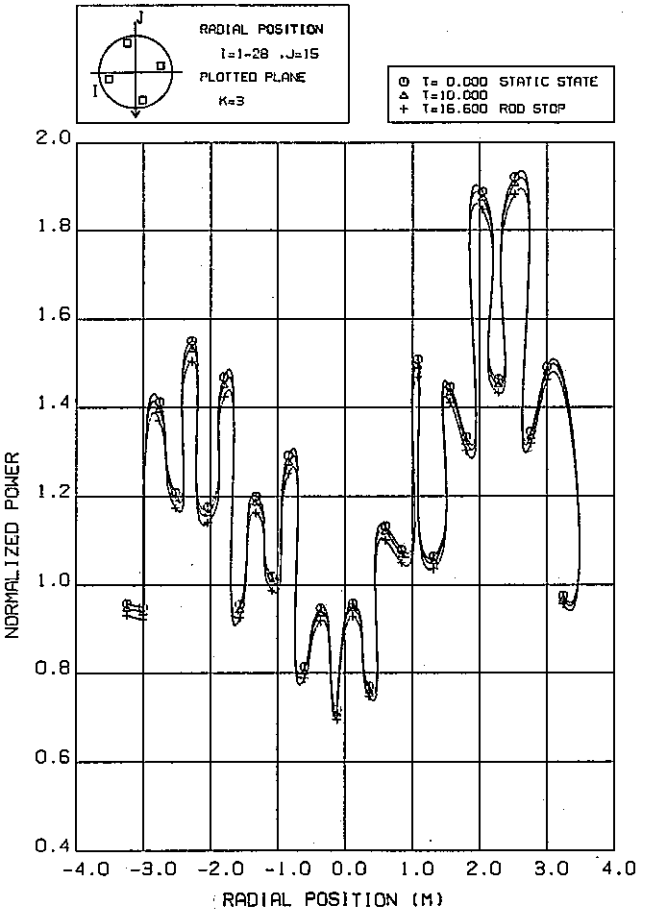
図5.4　ＤＢＥ(パス⑤)基準ケースの１点近似解析における反応度の変化



(1) 炉心下部（制御棒引抜高さの中間位置）

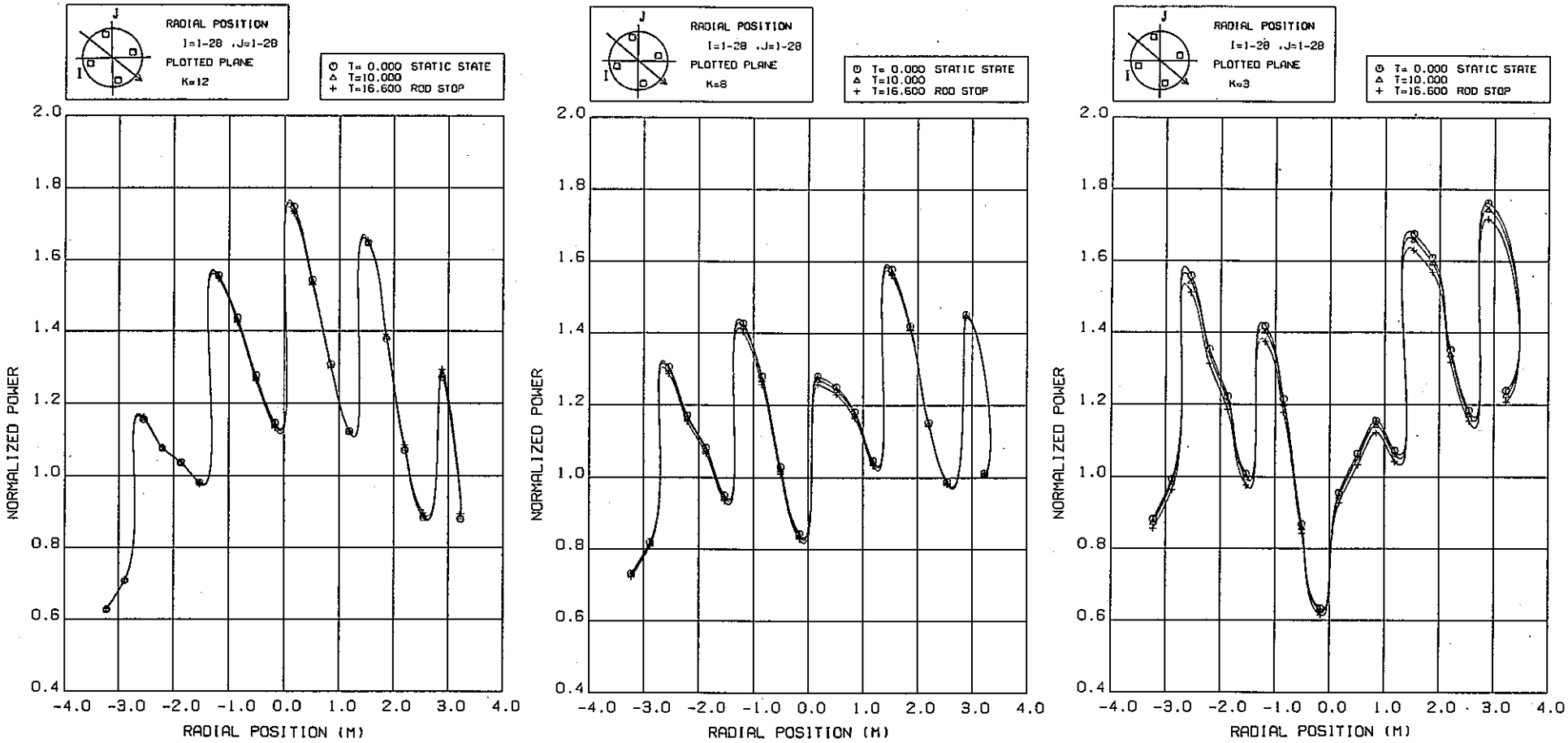


(2) 炉心中央部



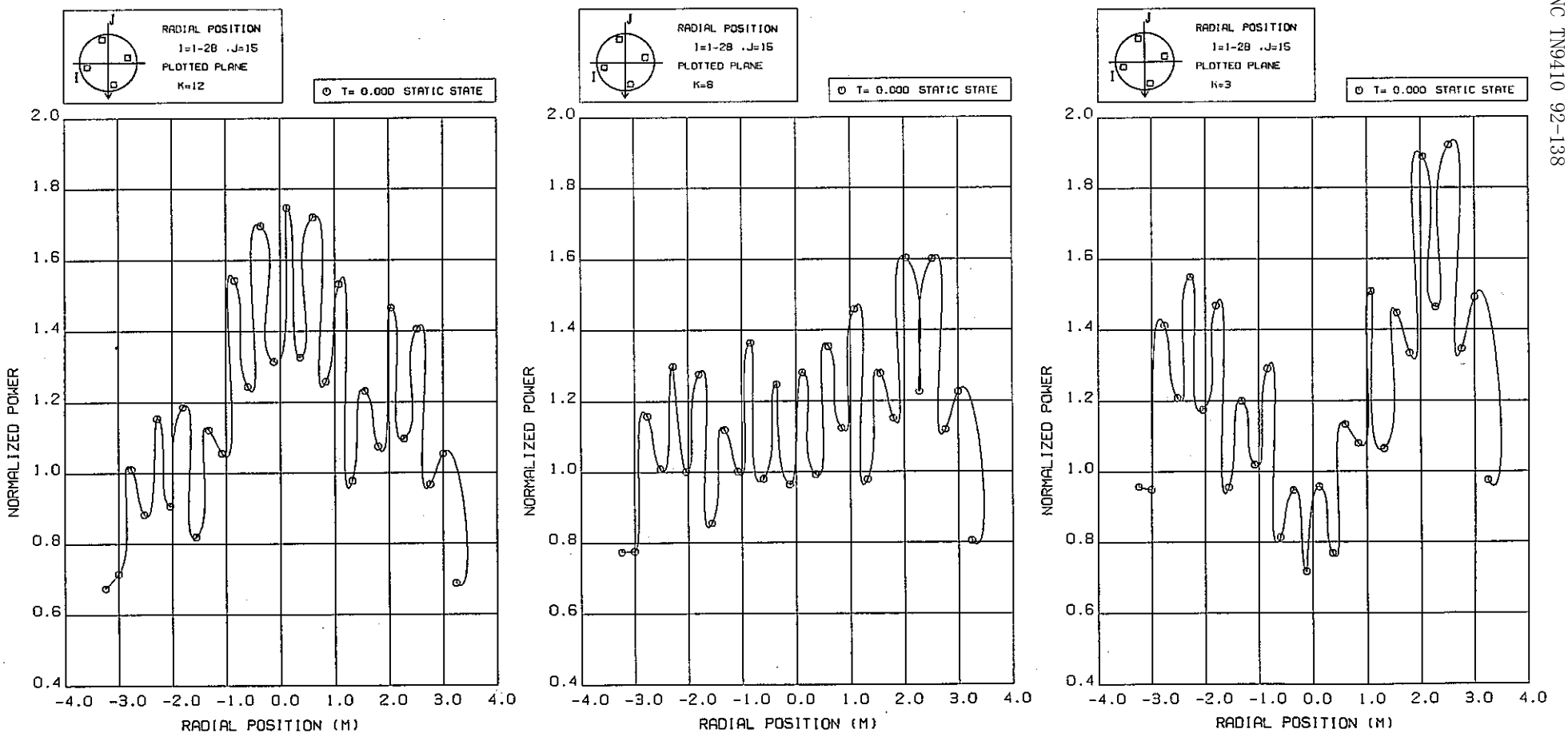
(3) 炉心上部

図5．5　ＤＢＥ（パス⑤）基準ケースの３次元解析における径方向出力分布の変化（０°方向）



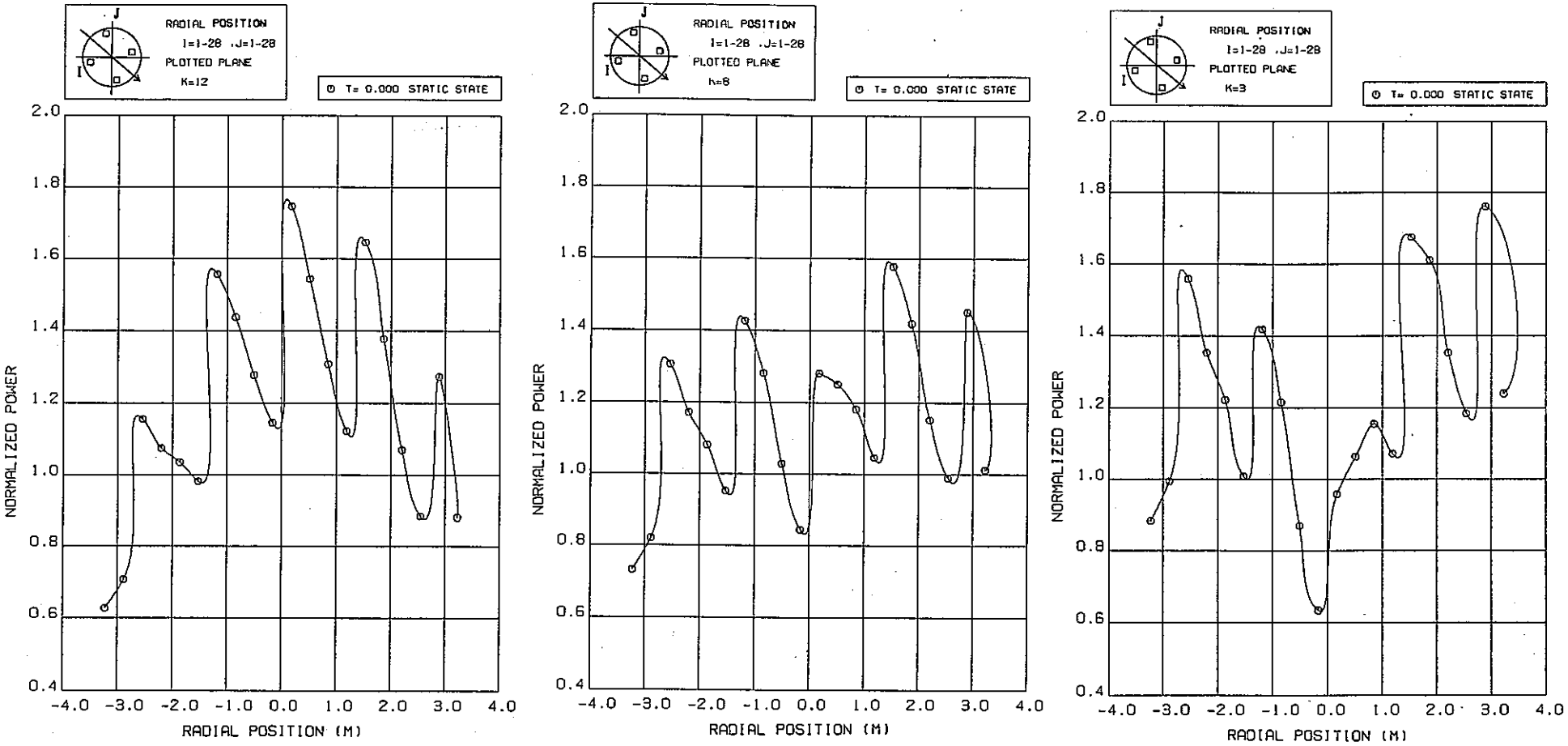
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.6　ＤＢＥ（パス⑤）基準ケースの３次元解析における径方向出力分布の変化（45° 方向）



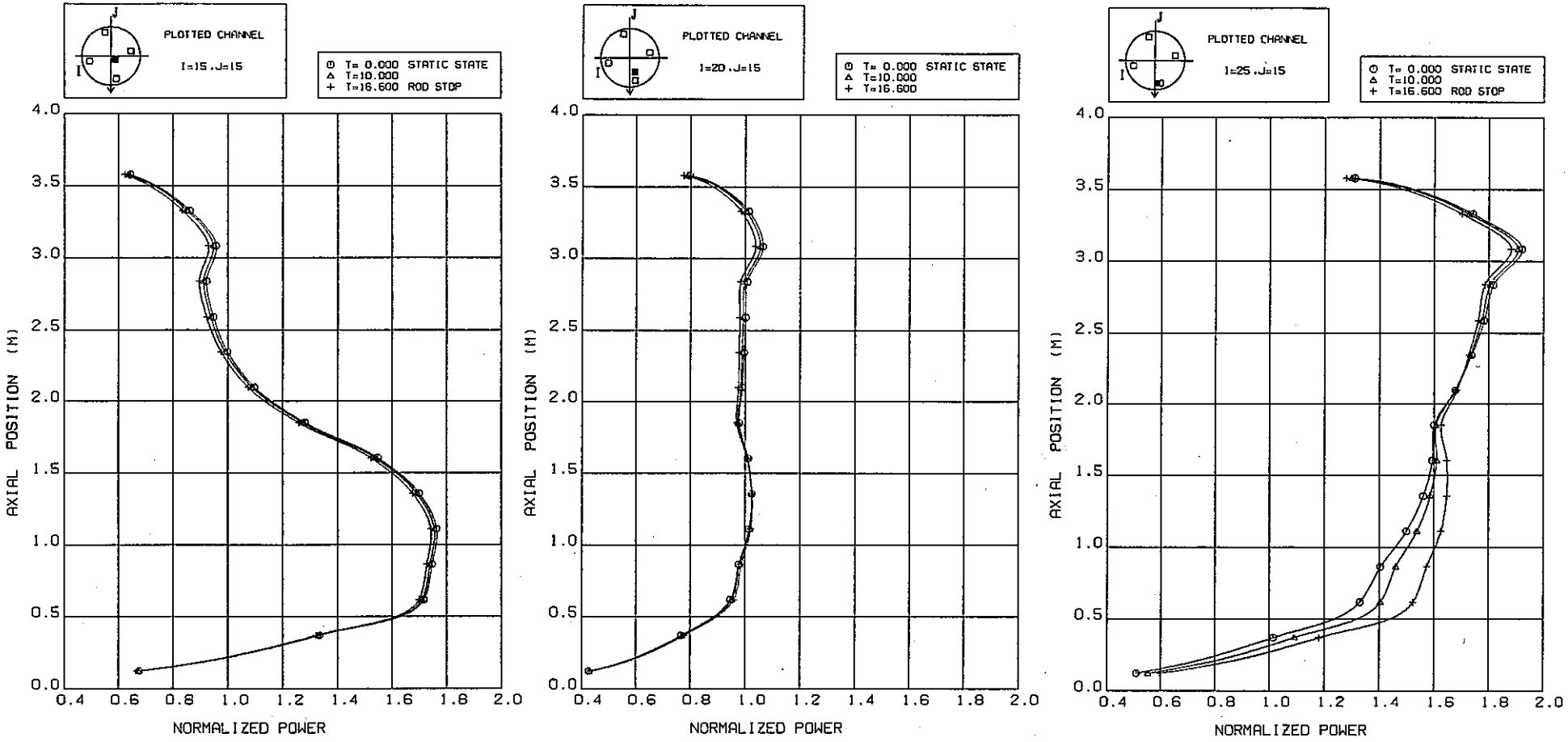
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.7　ＤＢＥ(パス⑤)基準ケースの１点近似解析における径方向出力分布（０°方向）



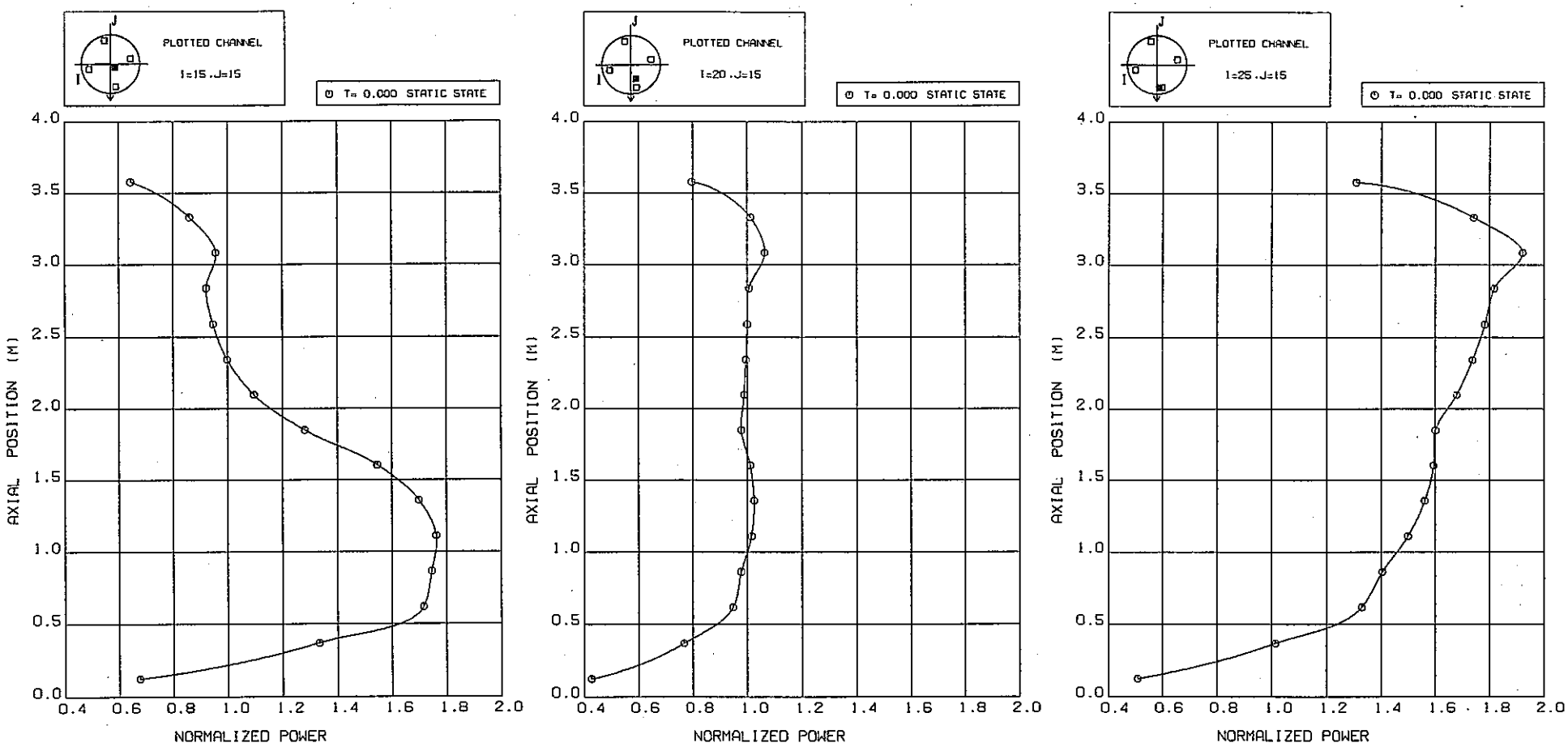
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.8　ＤＢＥ(パス⑤)基準ケースの１点近似解析における径方向出力分布（45°方向）



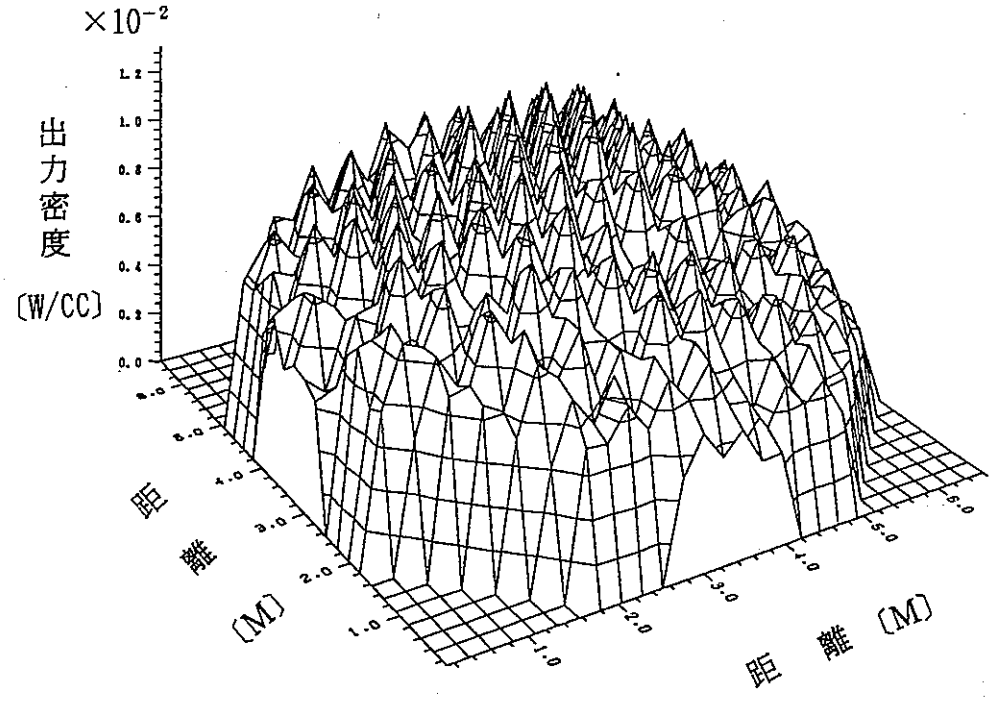
(1) 径方向中心部　　(2) 径方向中央部　　(3) 引抜制御棒近傍

図5.9　ＤＢＥ(パス⑤)基準ケースの３次元解析における径方向炉心各チャンネルの軸方向出力分布の変化

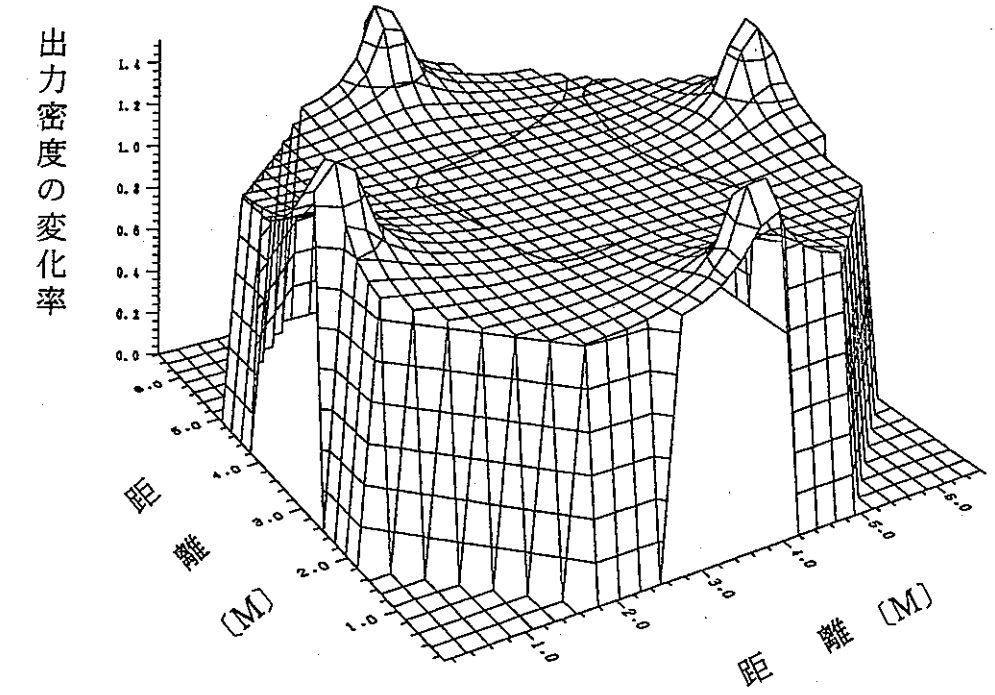


(1) 径方向中心部　　(2) 径方向中央部　　(3) 引抜制御棒近傍

図5.10　ＤＢＥ(パス⑤)基準ケースの１点近似解析における径方向炉心各チャンネルの軸方向出力分布



(1) 制御棒引抜開始時



(2) 制御棒引抜停止時（引抜開始時に対する変化率）

図5.11 ＤＢＥ（パス⑤）基準ケースの３次元解析における制御棒引抜高さの中間位置での空間出力分布

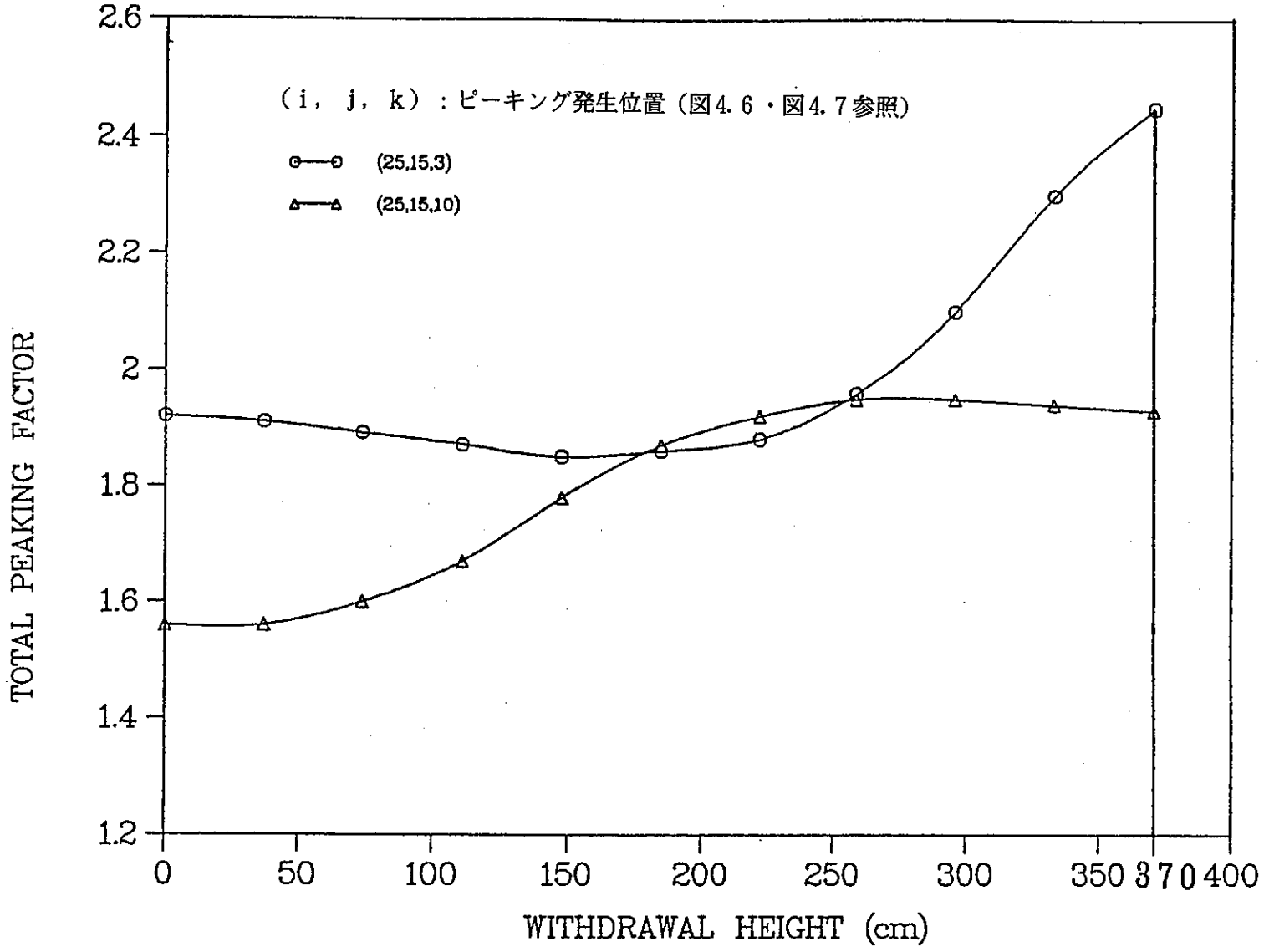


図5.12　炉心周辺部の制御棒4本の引抜きに伴う全出力ピーキング係数の変化

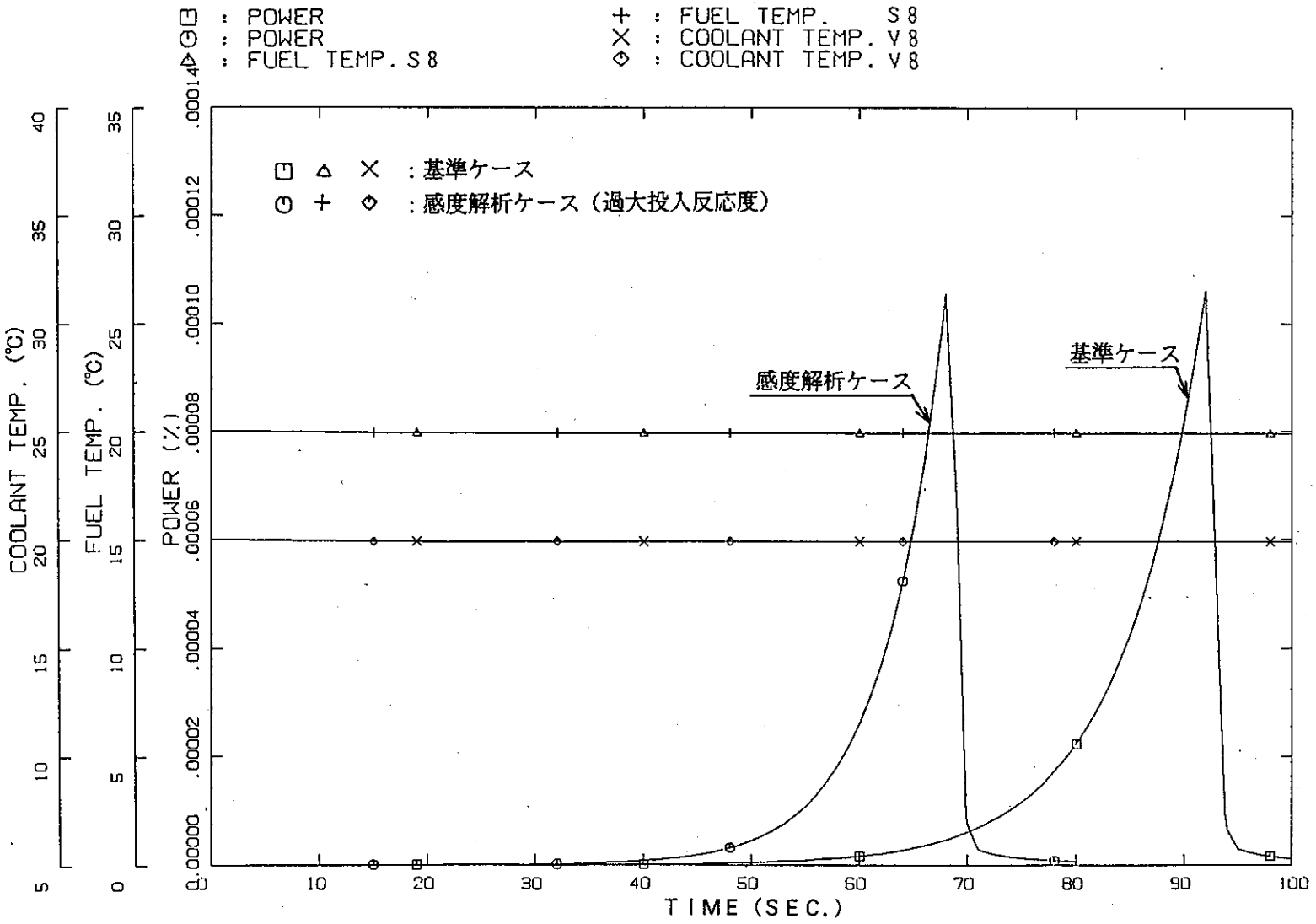


図5.13　過大投入反応度を用いたＤＢＥ（パス⑤）３次元感度解析における炉出力及び温度変化の比較

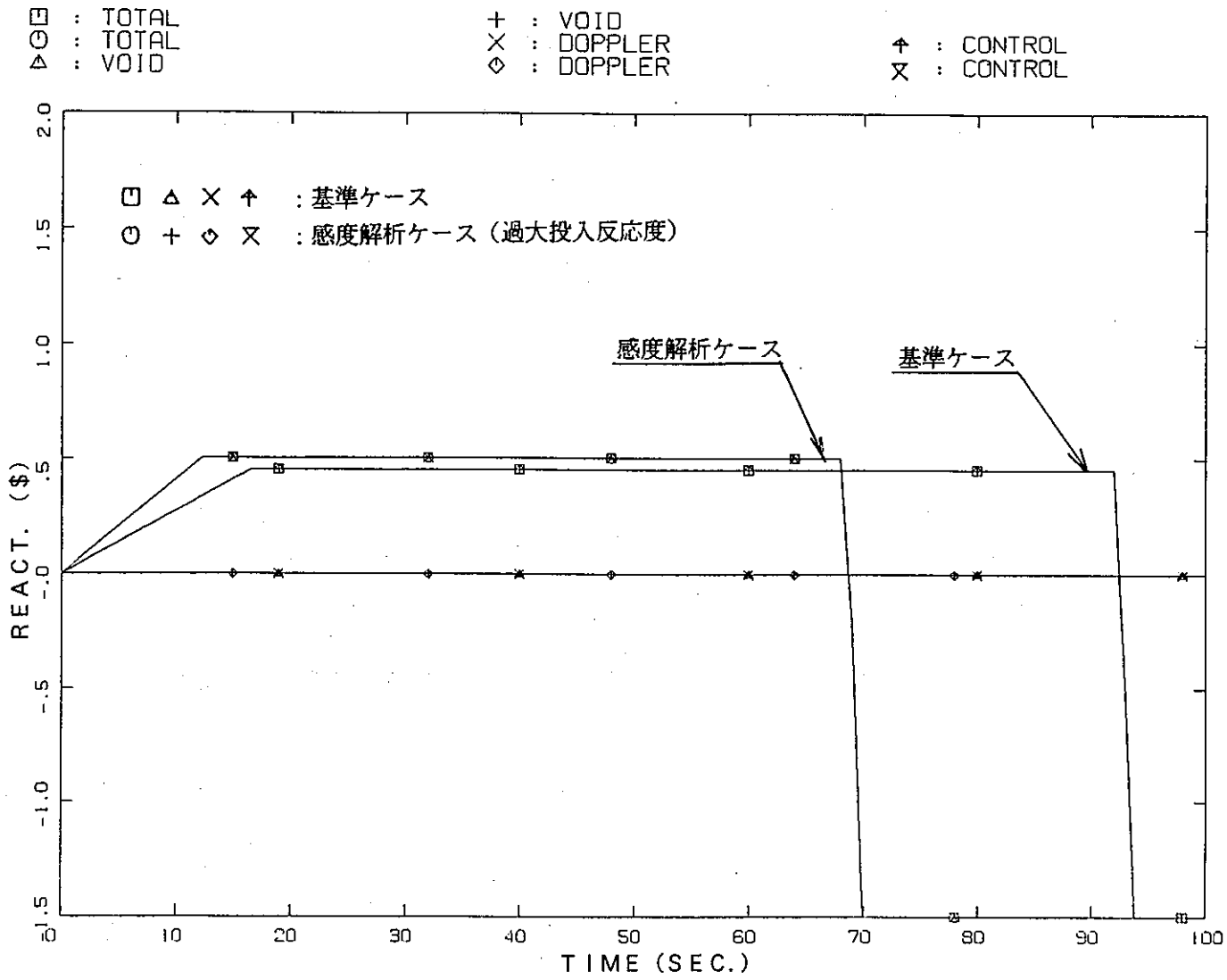


図5.14　過大投入反応度を用いたＤＢＥ（パス⑤）３次元感度解析における反応度変化の比較

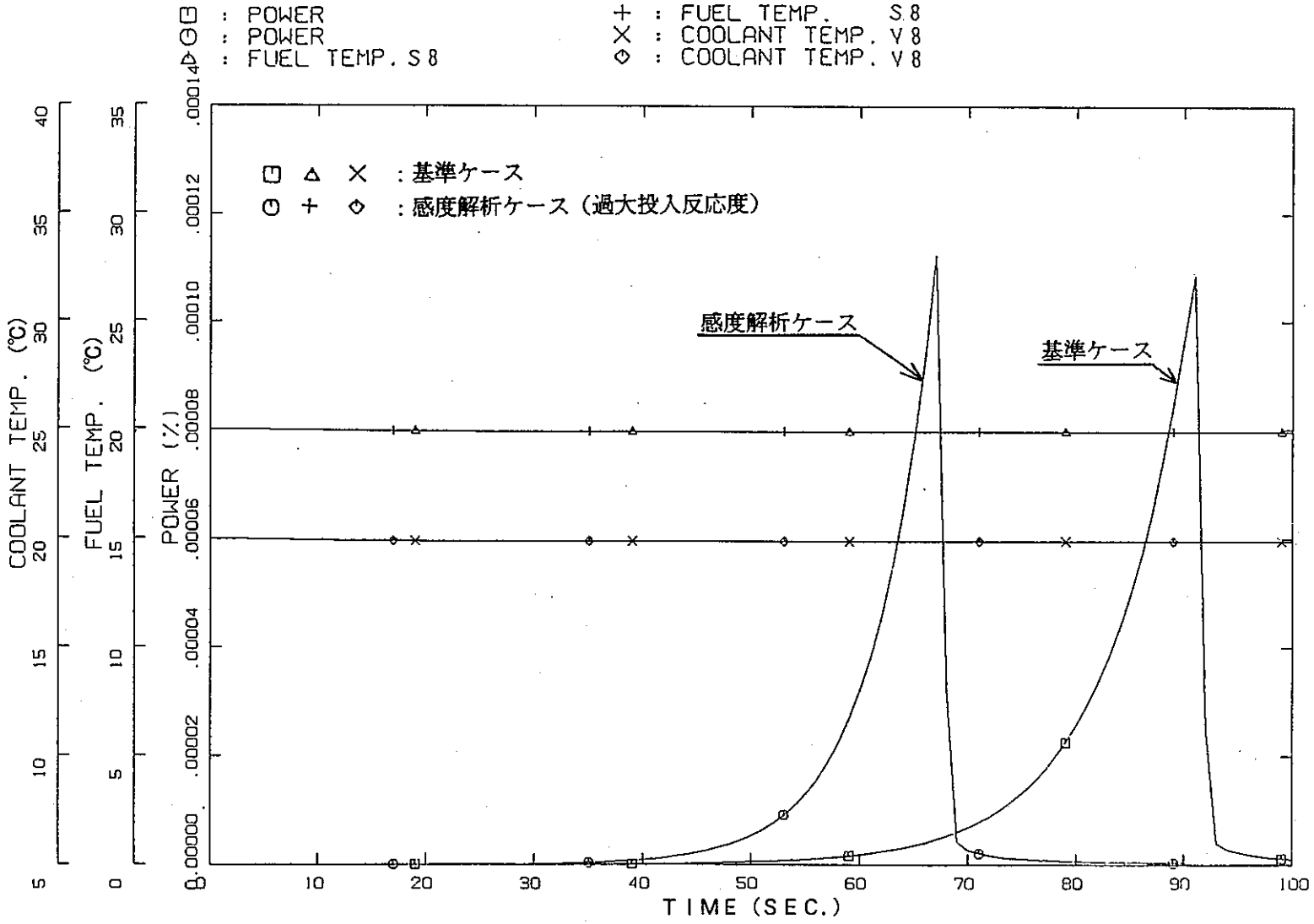


図5.15　過大投入反応度を用いたＤＢＥ（パス⑤）１点近似感度解析における炉出力及び温度変化の比較

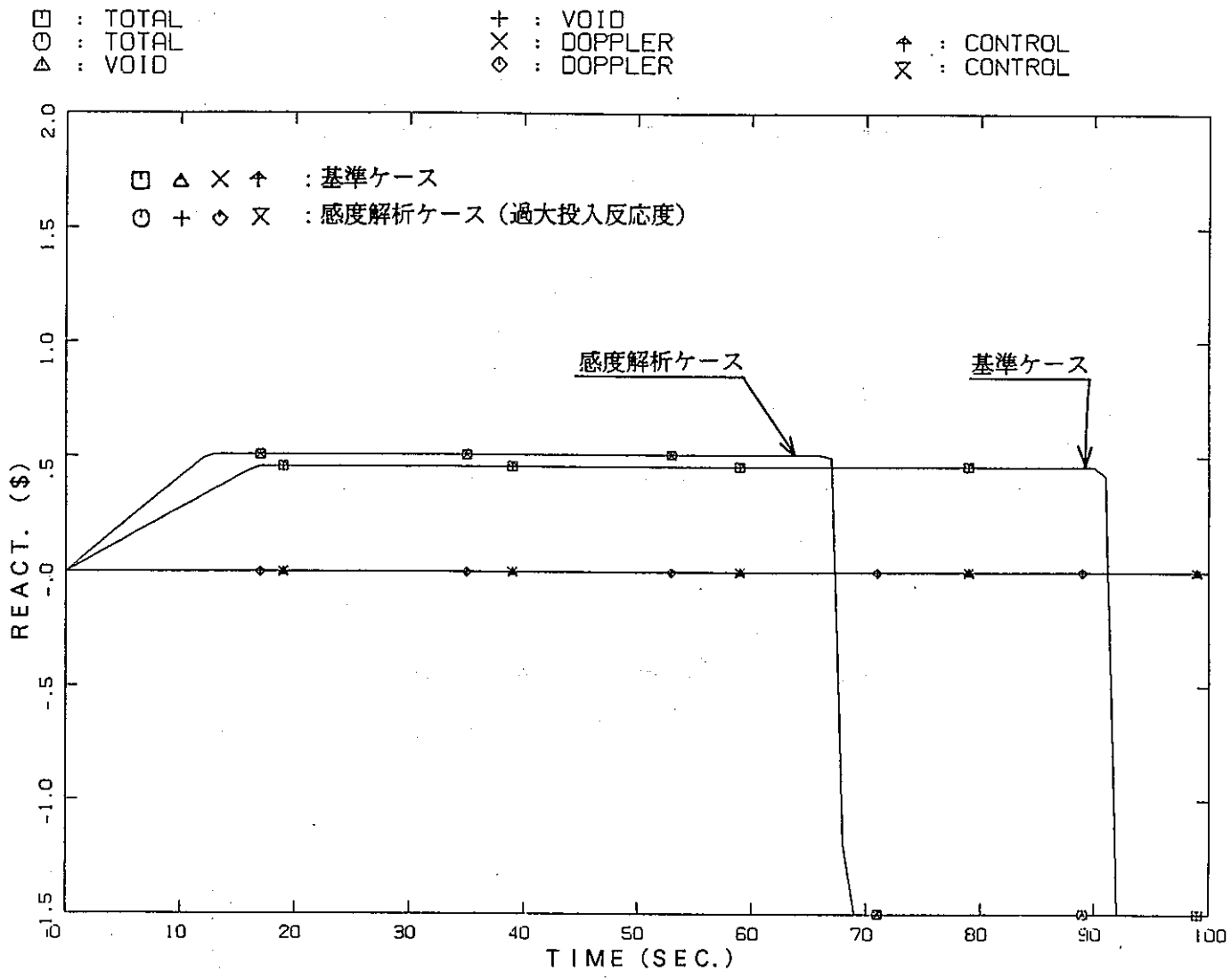


図5.16　過大投入反応度を用いたＤＢＥ（パス⑤）１点近似感度解析における反応度変化の比較

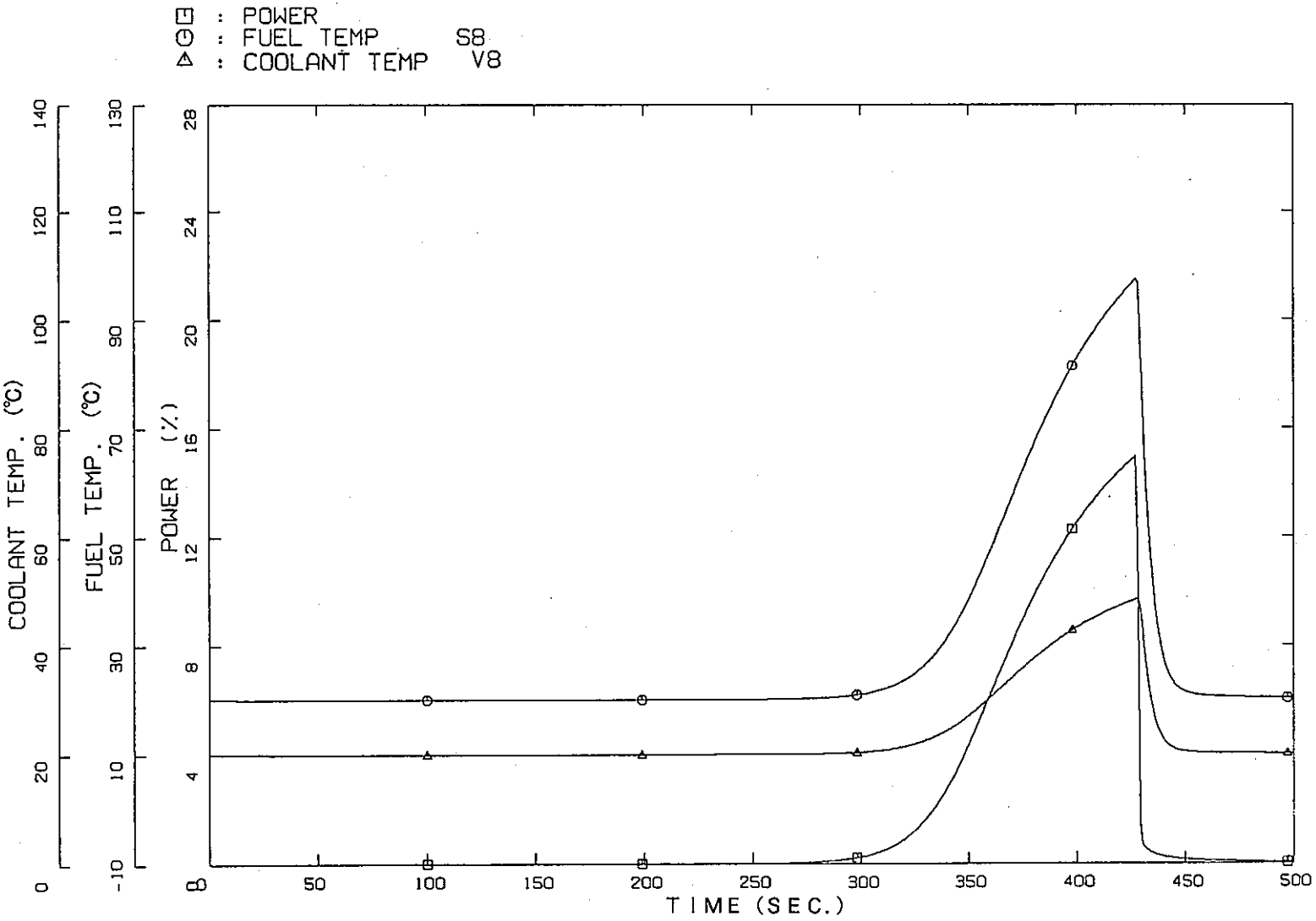


図5.17　過小投入反応度を用いたＤＢＥ（パス⑤）３次元感度解析における炉出力及び温度の変化

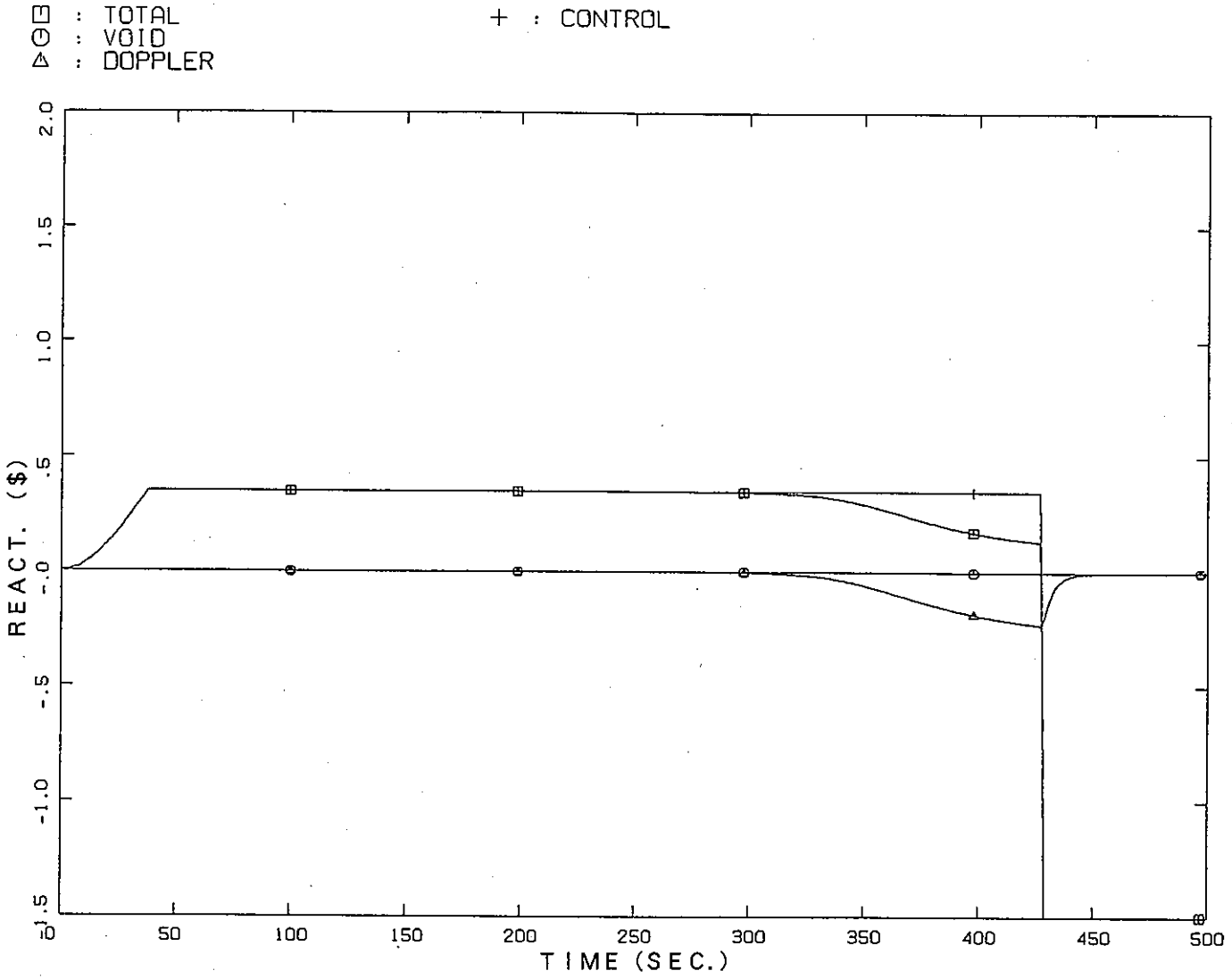


図5.18　過小投入反応度を用いたＤＢＥ（パス⑤）３次元感度解析における反応度の変化

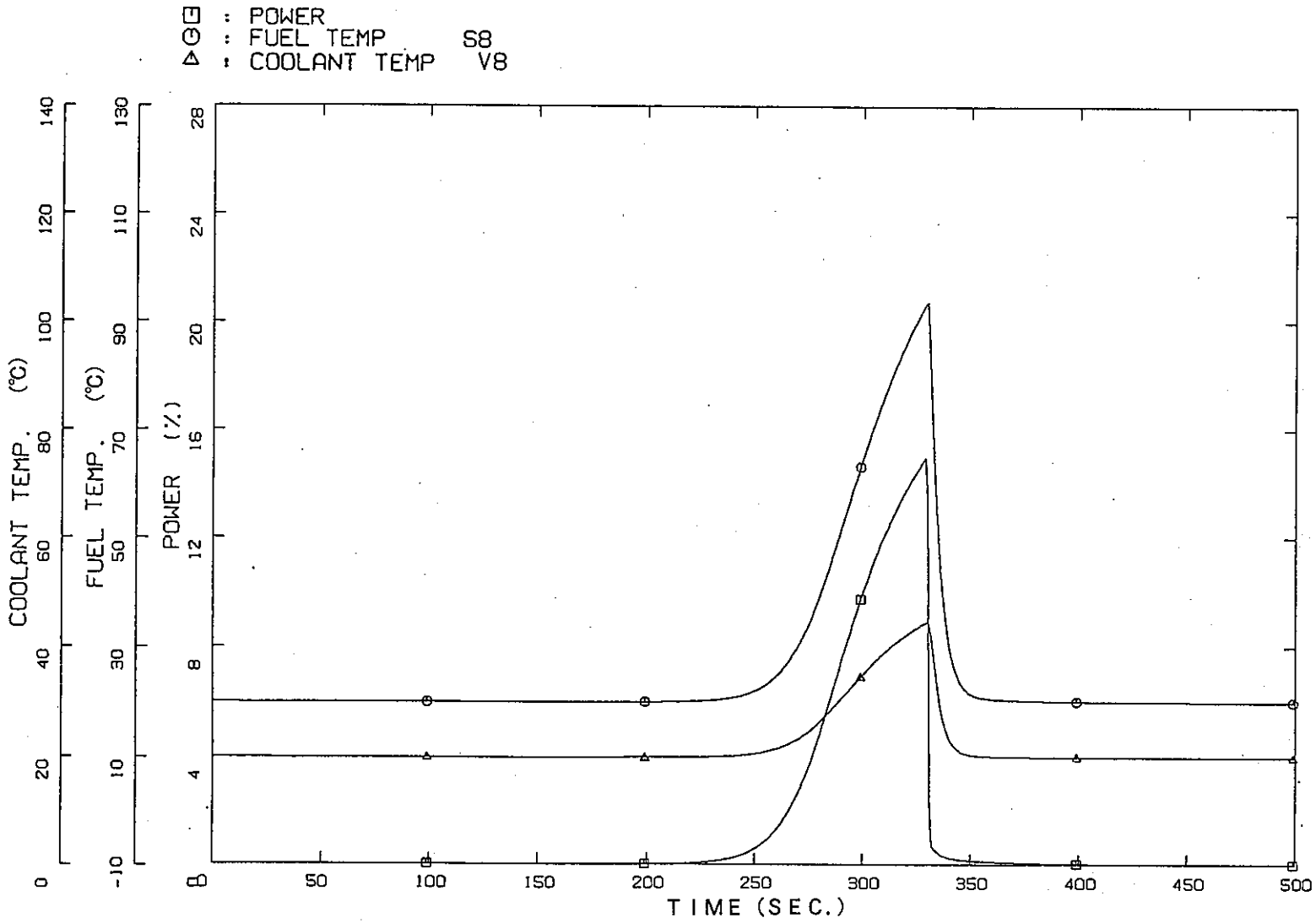


図5.19　過小投入反応度を用いたＤＢＥ（パス⑤）１点近似感度解析における炉出力及び温度の変化

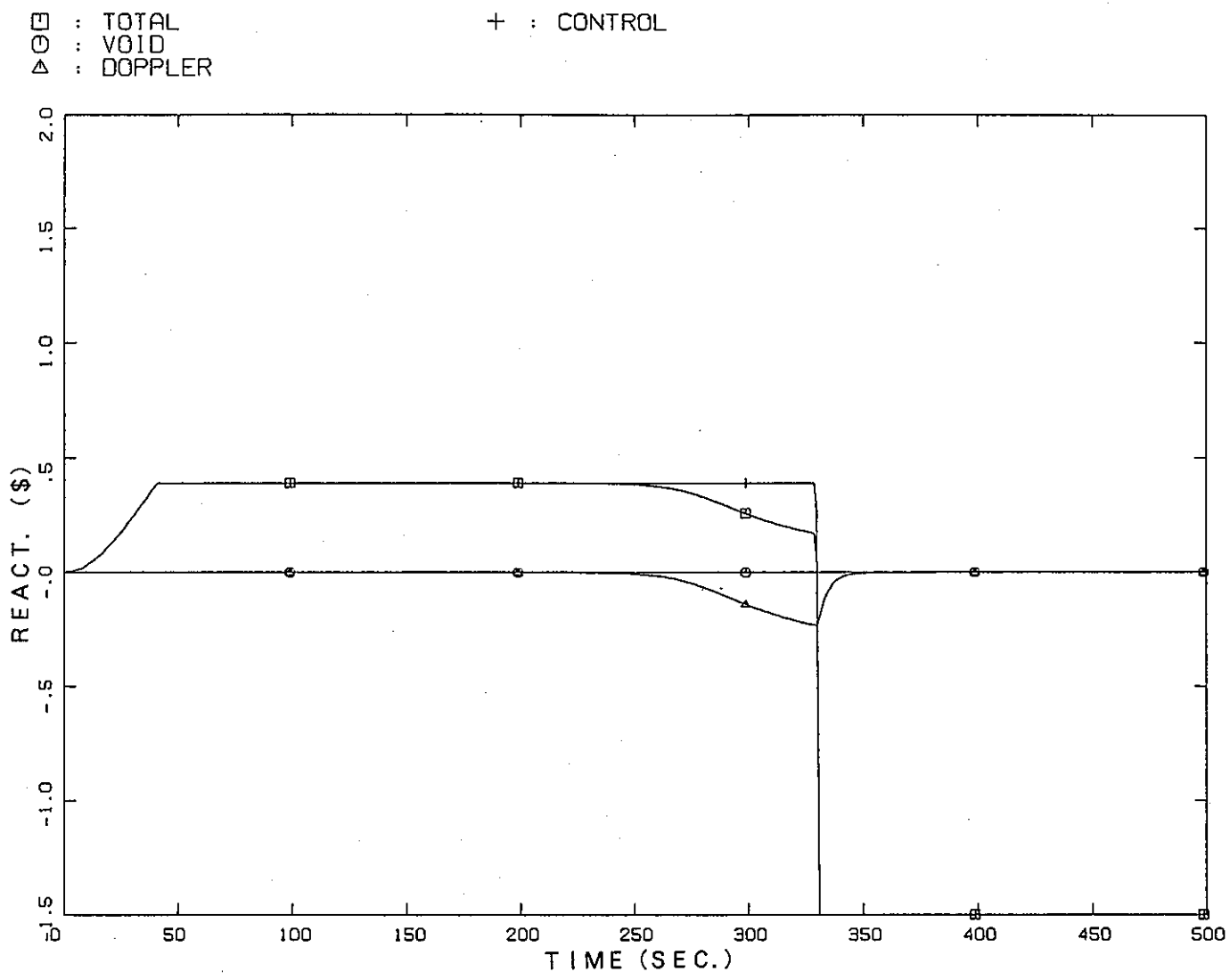
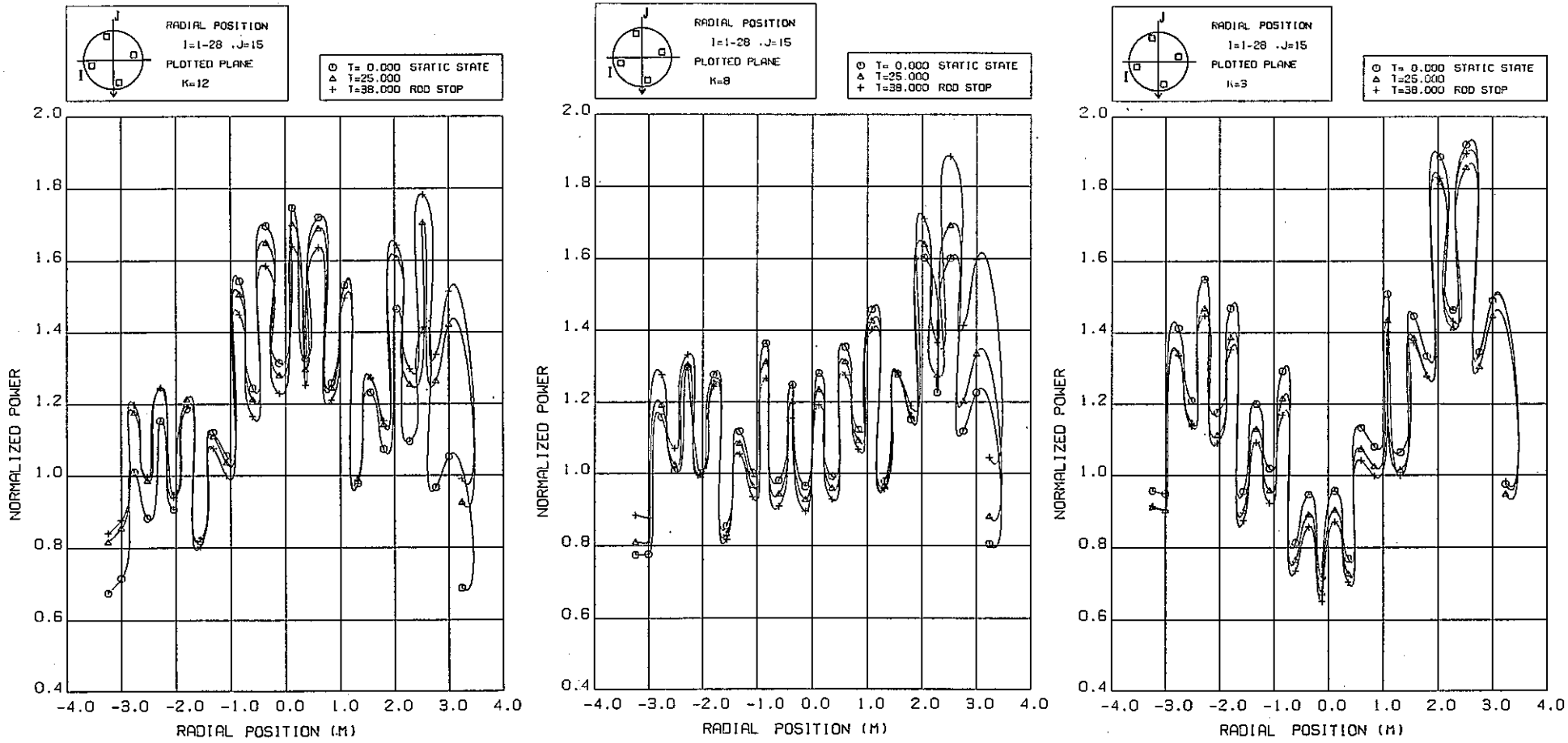
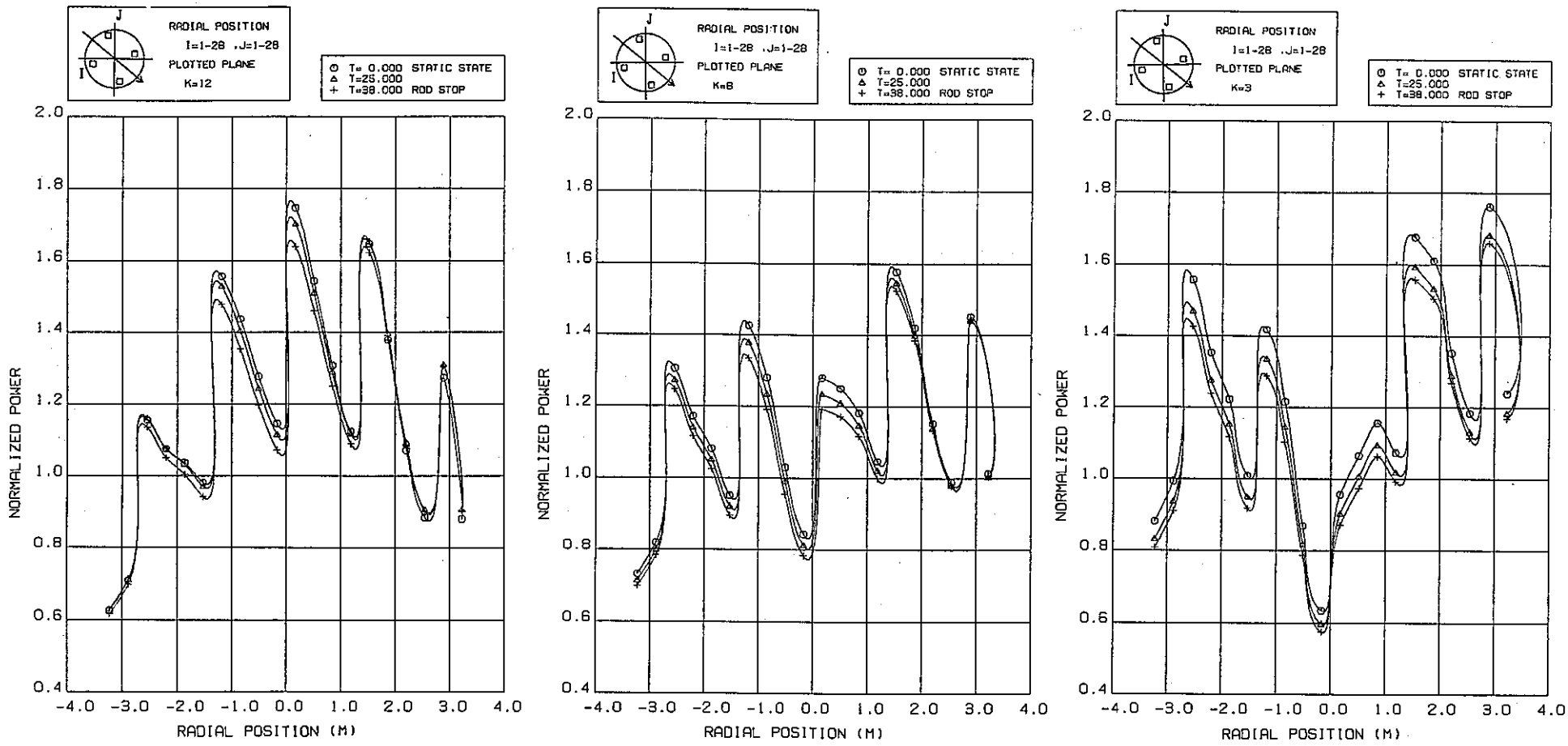


図5.20　過小投入反応度を用いたＤＢＥ（パス⑤）１点近似感度解析における反応度の変化



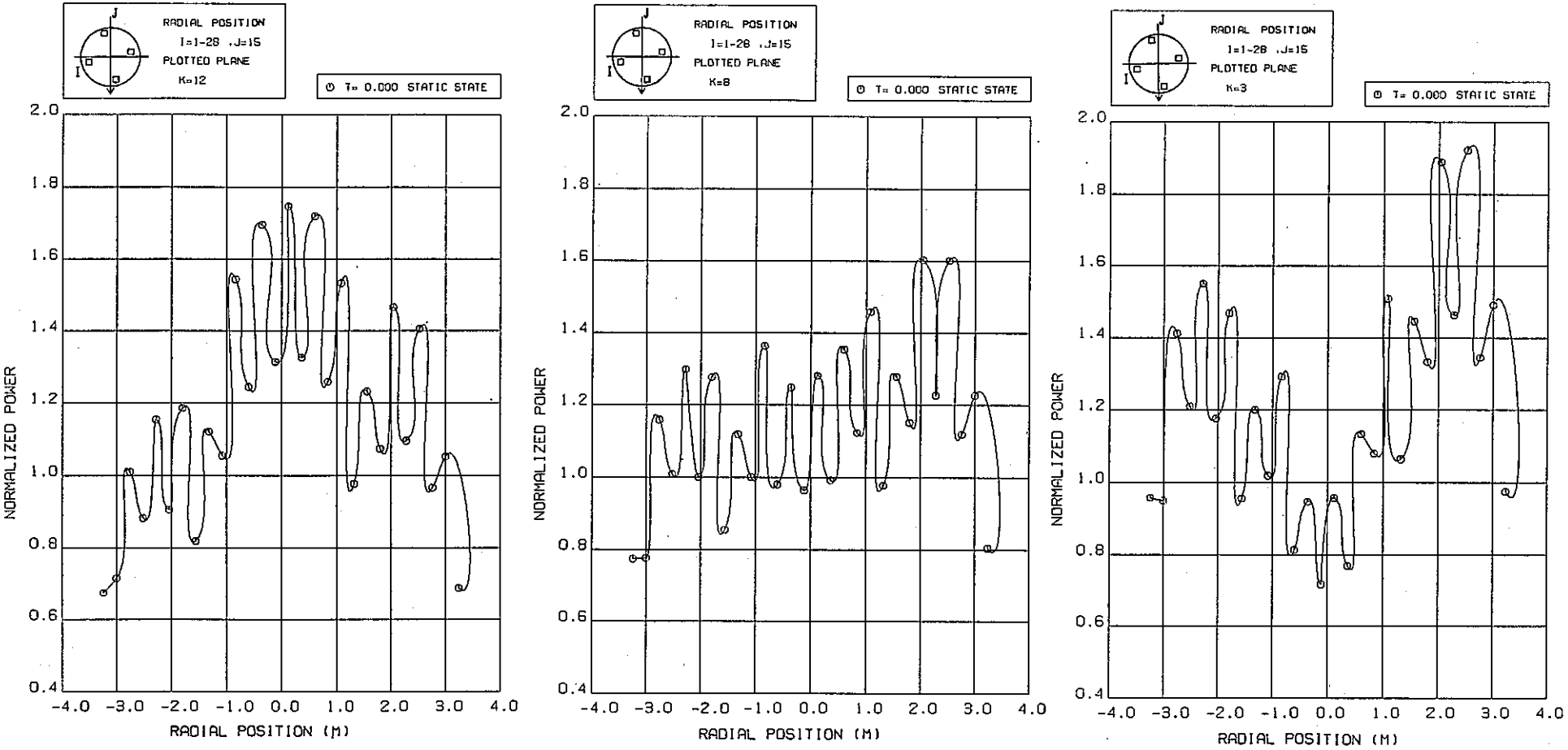
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.21　過小投入反応度を用いたＤＢＥ（パス⑤）３次元感度解析における径方向出力分布の変化（０°方向）



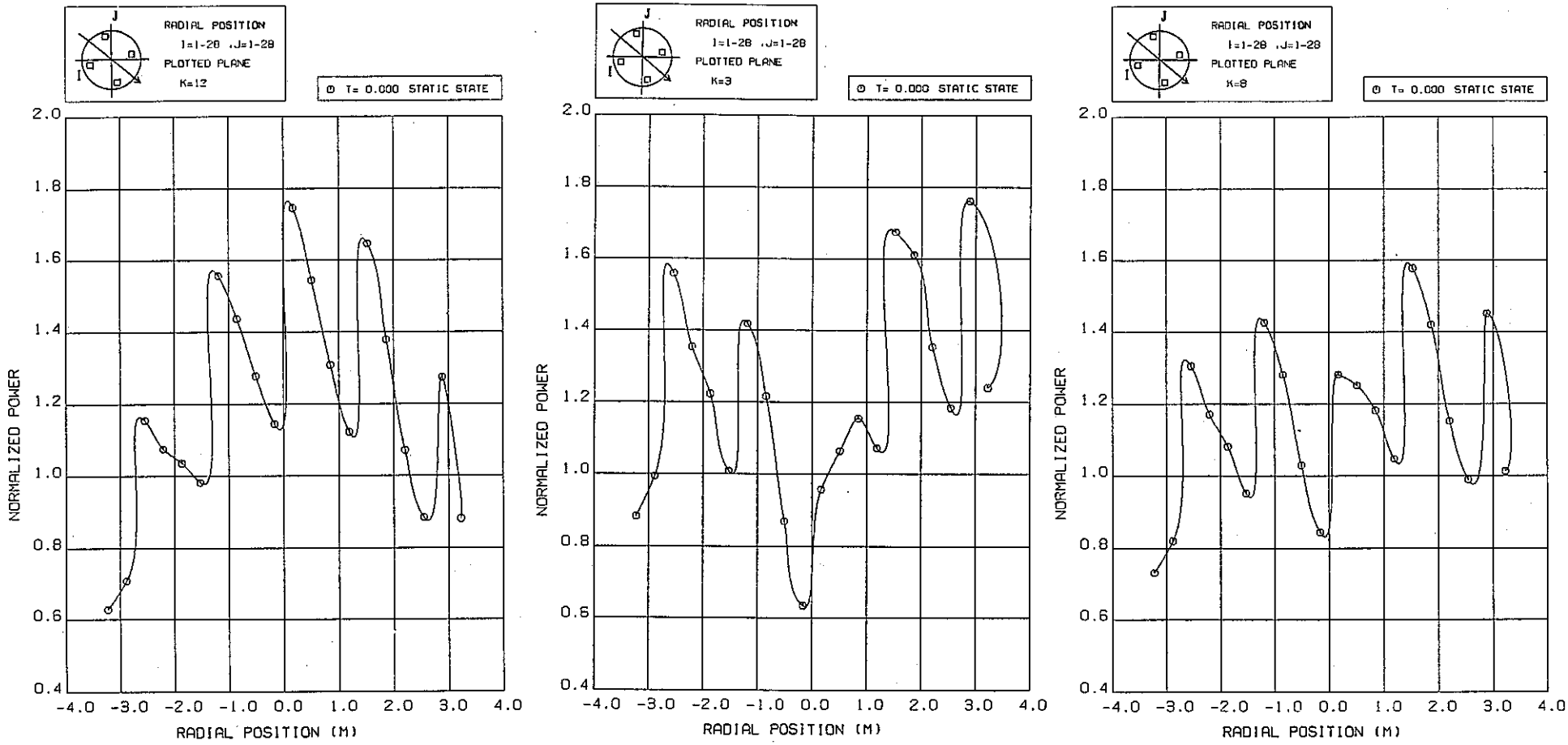
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.22　過小投入反応度を用いたＤＢＥ（パス⑤）３次元感度解析における径方向出力分布の変化（45° 方向）



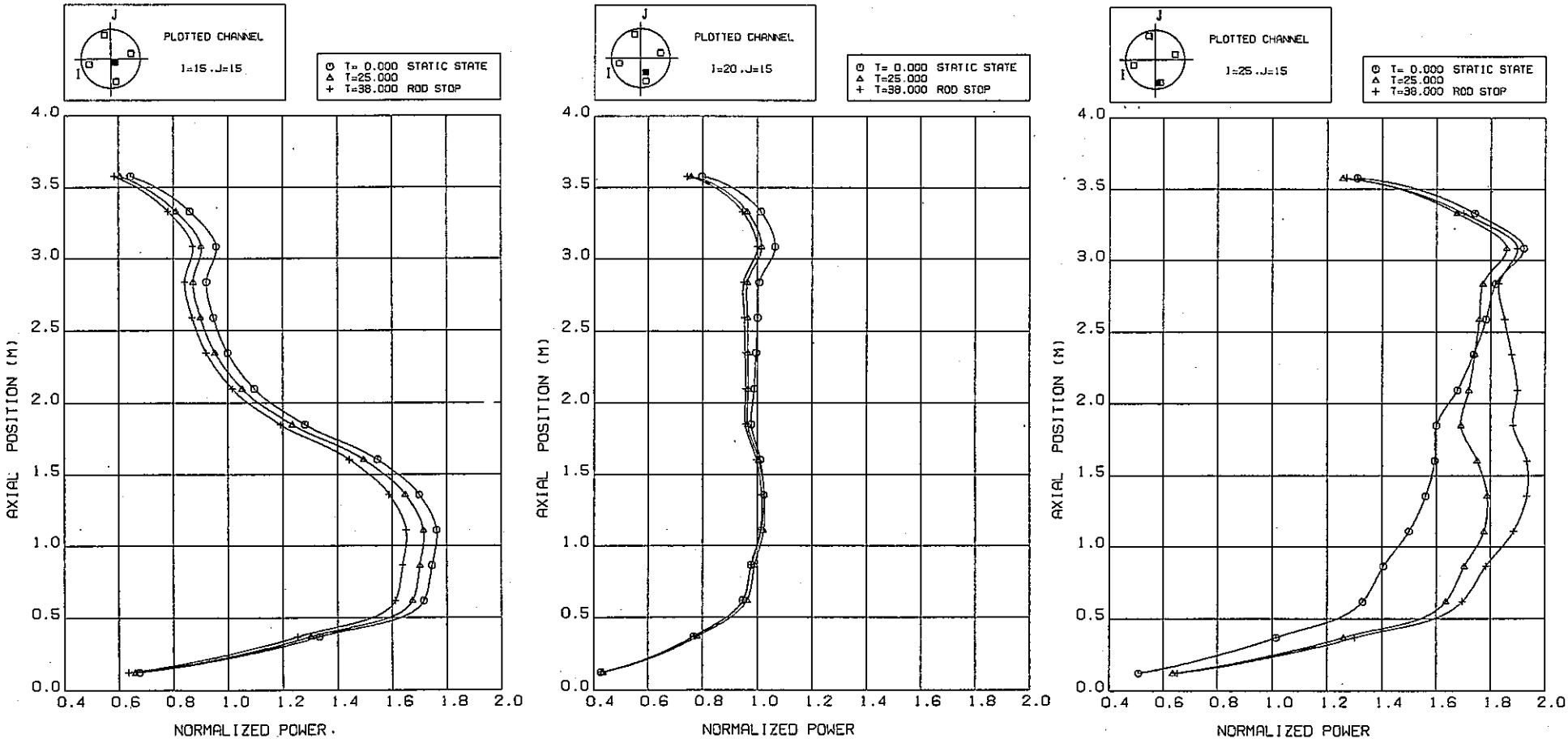
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.23　過小投入反応度を用いたＤＢＥ（パス⑤）１点近似感度解析における径方向出力分布（０°方向）



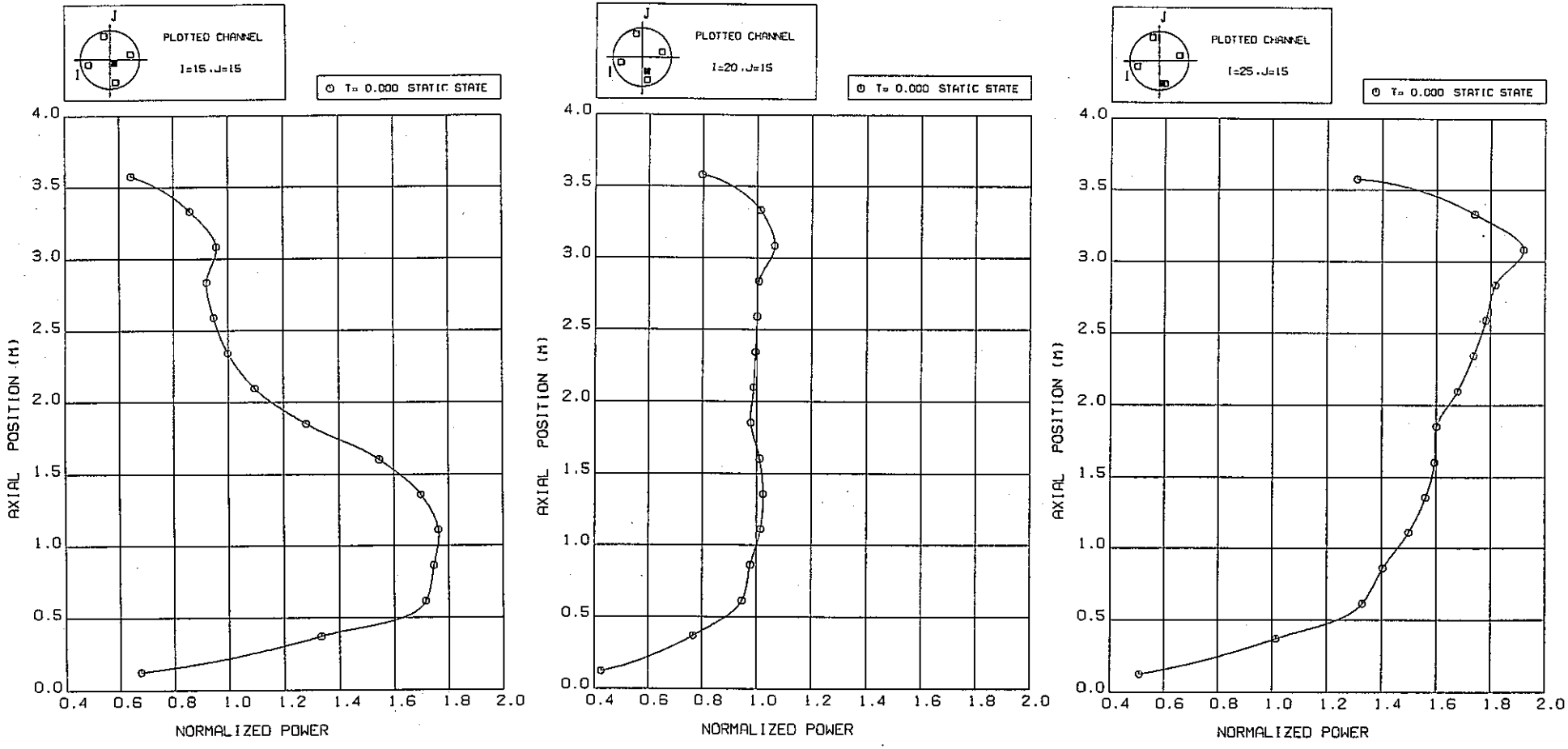
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.24　過小投入反応度を用いたＤＢＥ（パス⑤）１点近似感度解析における径方向出力分布（45°方向）



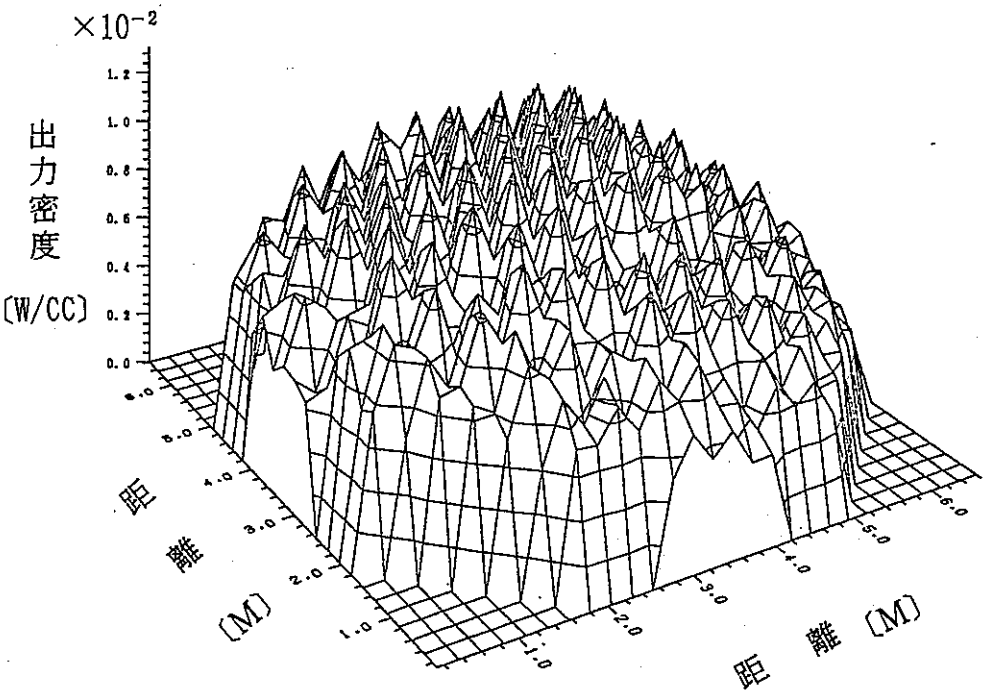
(1) 径方向中心部　　(2) 径方向中央部　　(3) 引抜制御棒近傍

図5.25　過小投入反応度を用いたＤＢＥ（パス⑤）３次元感度解析における径方向炉心各チャンネルの軸方向出力分布の変化

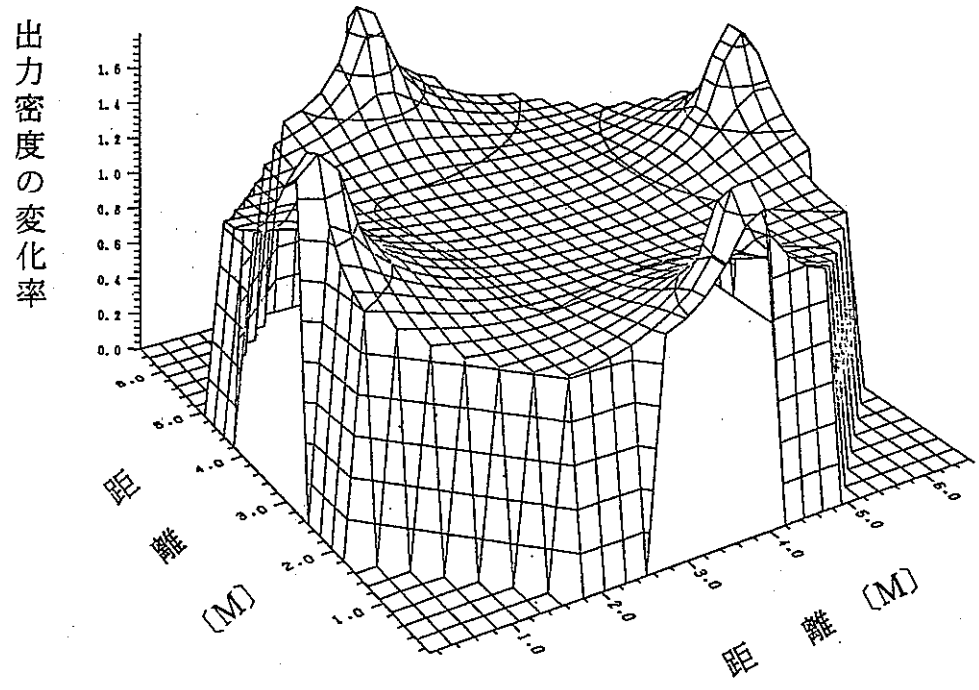


(1) 径方向中心部　　(2) 径方向中央部　　(3) 引抜制御棒近傍

図5.26　過小投入反応度を用いたＤＢＥ（パス⑤）１点近似感度解析における径方向炉心各チャンネルの軸方向出力分布

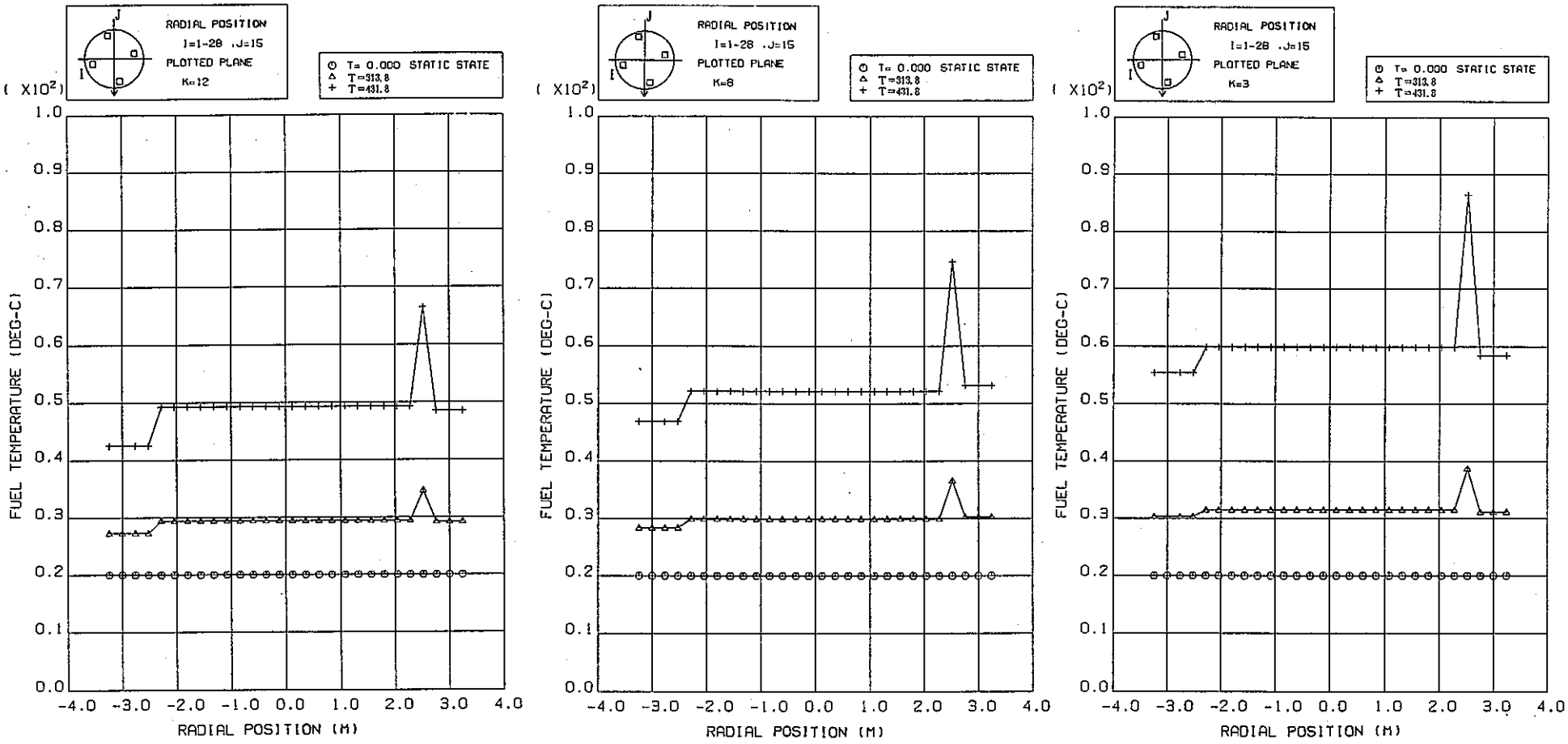


(1) 制御棒引抜開始時



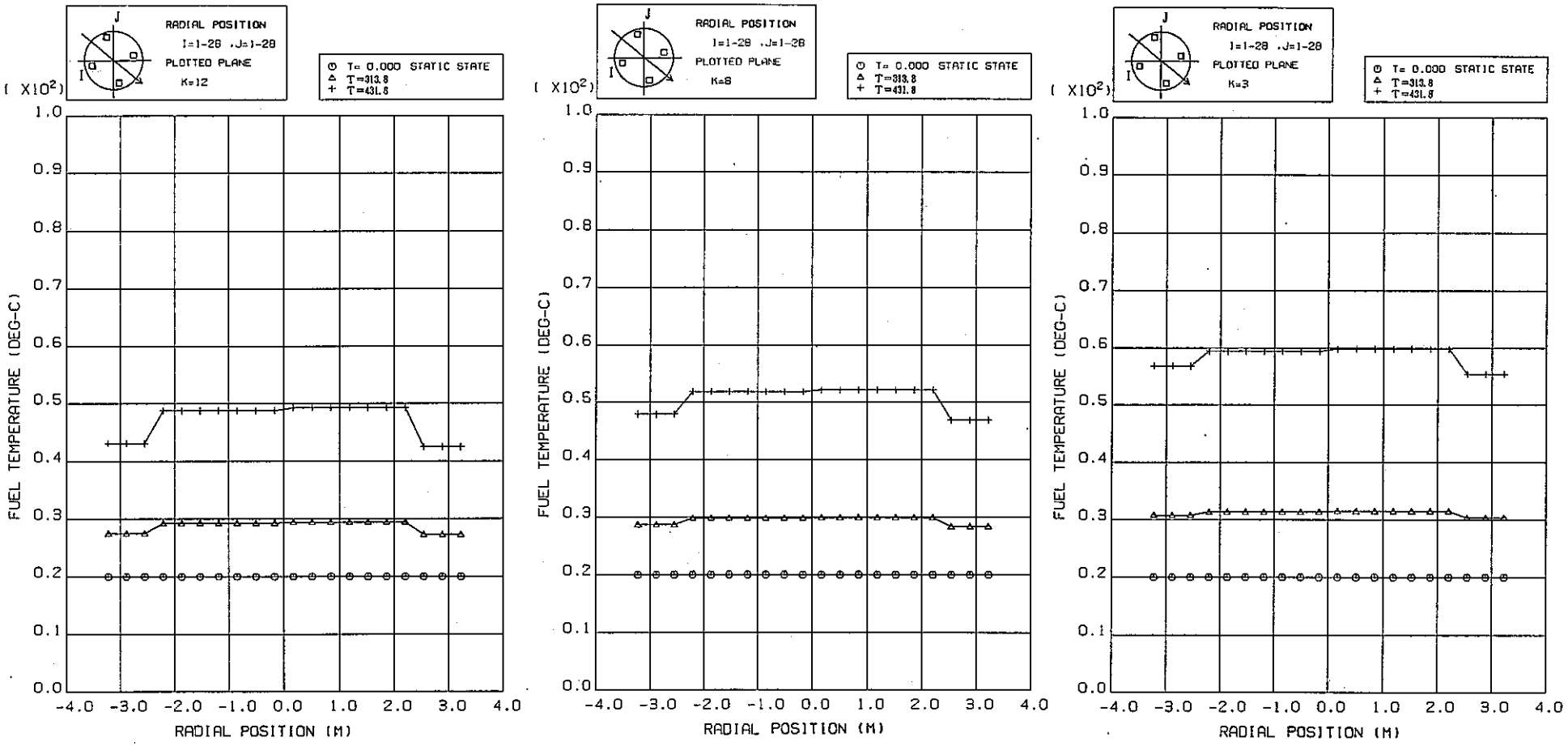
(2) 制御棒引抜停止時（引抜開始時に対する変化率）

図5.27 過小投入反応度を用いたＤＢＥ（パス⑤）３次元感度解析における制御棒引抜高さの中間位置での空間出力分布



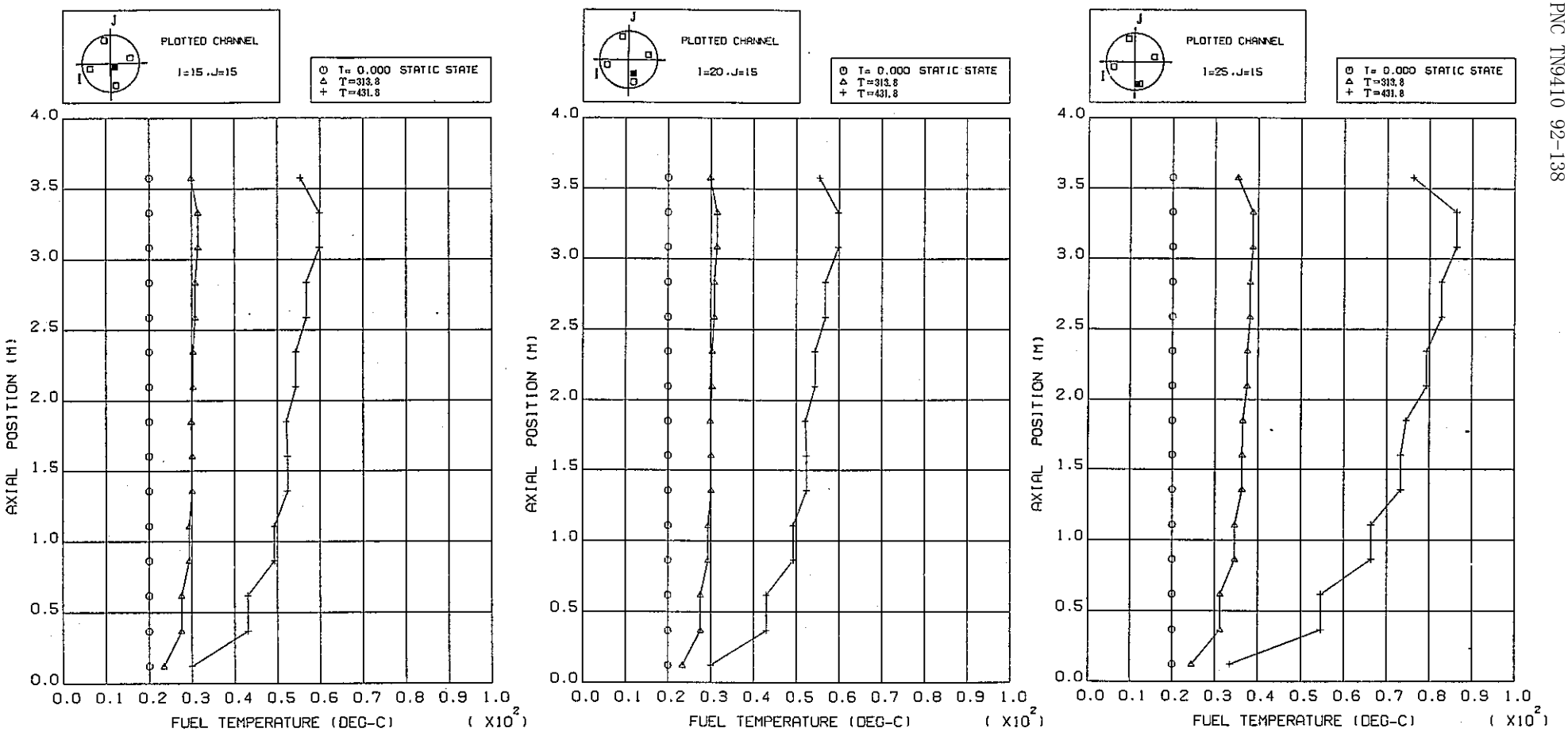
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.28　過小投入反応度を用いたＤＢＥ（パス⑤）３次元感度解析における径方向燃料温度分布の変化（０°方向）



(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.29　過小投入反応度を用いたＤＢＥ（パス⑤）３次元感度解析における径方向燃料温度分布の変化（45° 方向）



(1) 径方向中心部　　(2) 径方向中央部　　(3) 引抜制御棒近傍

図5.30　過小投入反応度を用いたＤＢＥ（パス⑤）３次元感度解析における径方向炉心各チャンネルの軸方燃料温度分布の変化

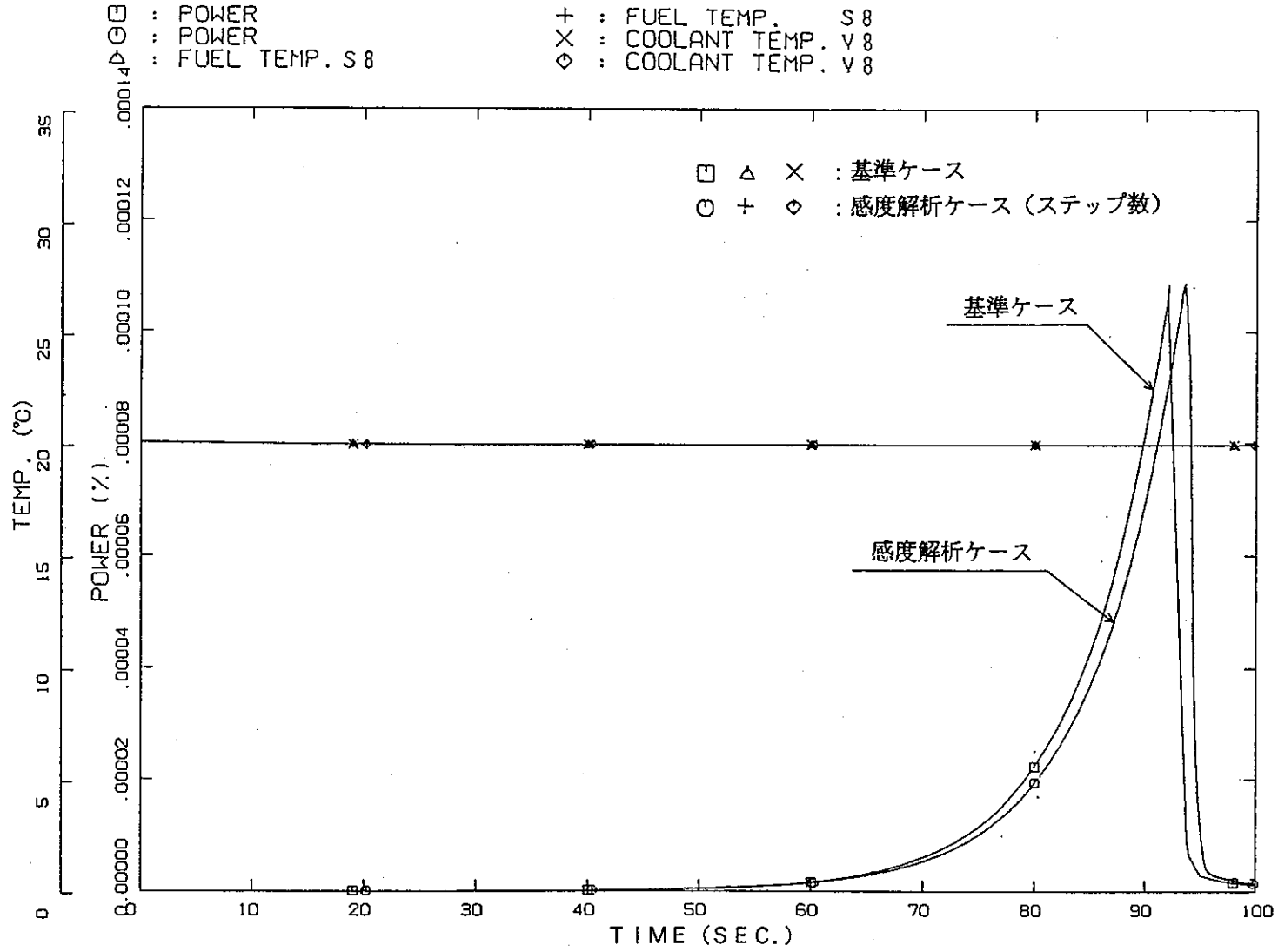


図5.31　拡散計算ステップ数を増加させたＤＢＥ（パス⑤）
3次元感度解析における炉出力及び温度変化の比較

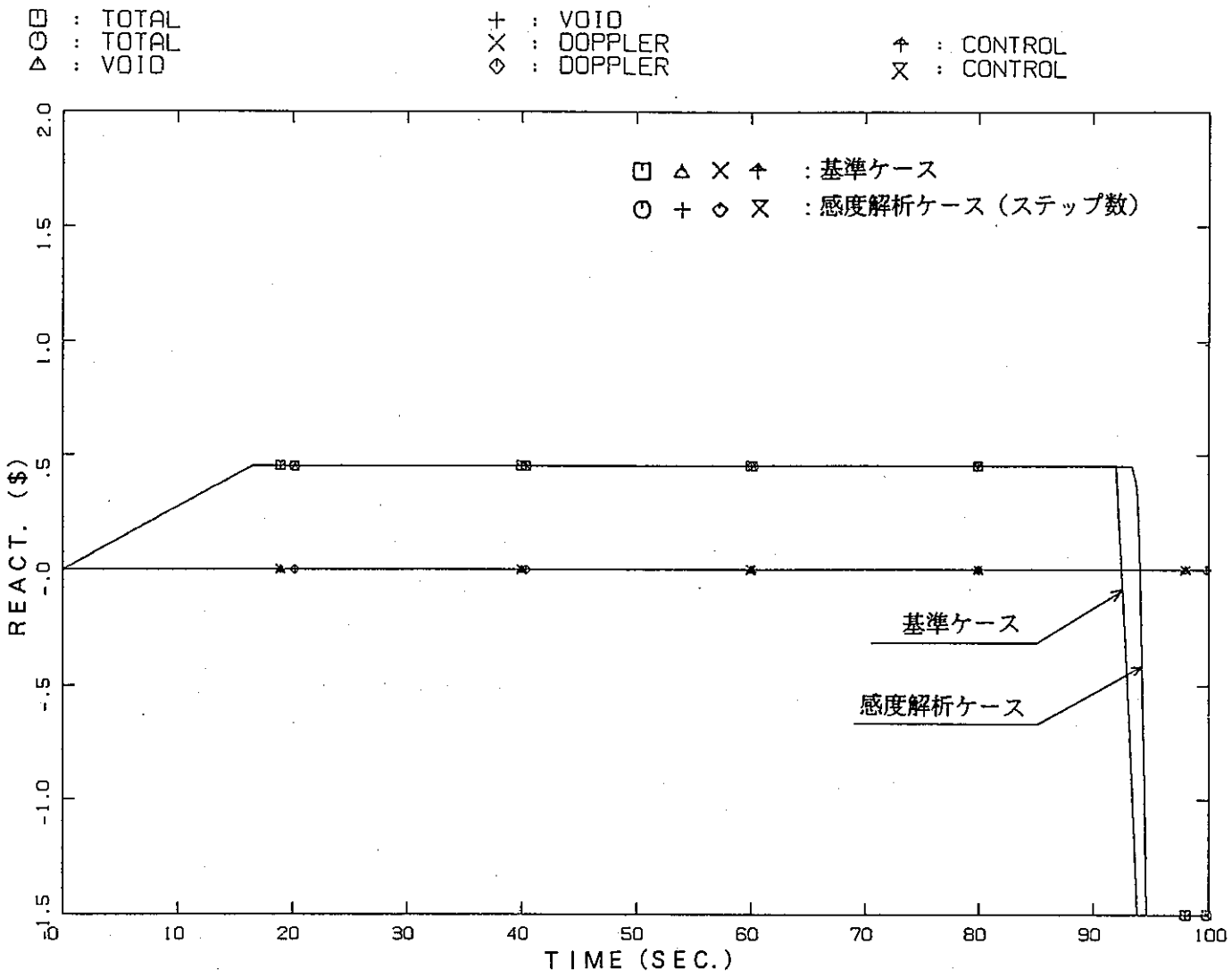


図5.32　拡散計算ステップ数を増加させたＤＢＥ（パス⑤）
３次元感度解析における反応度変化の比較

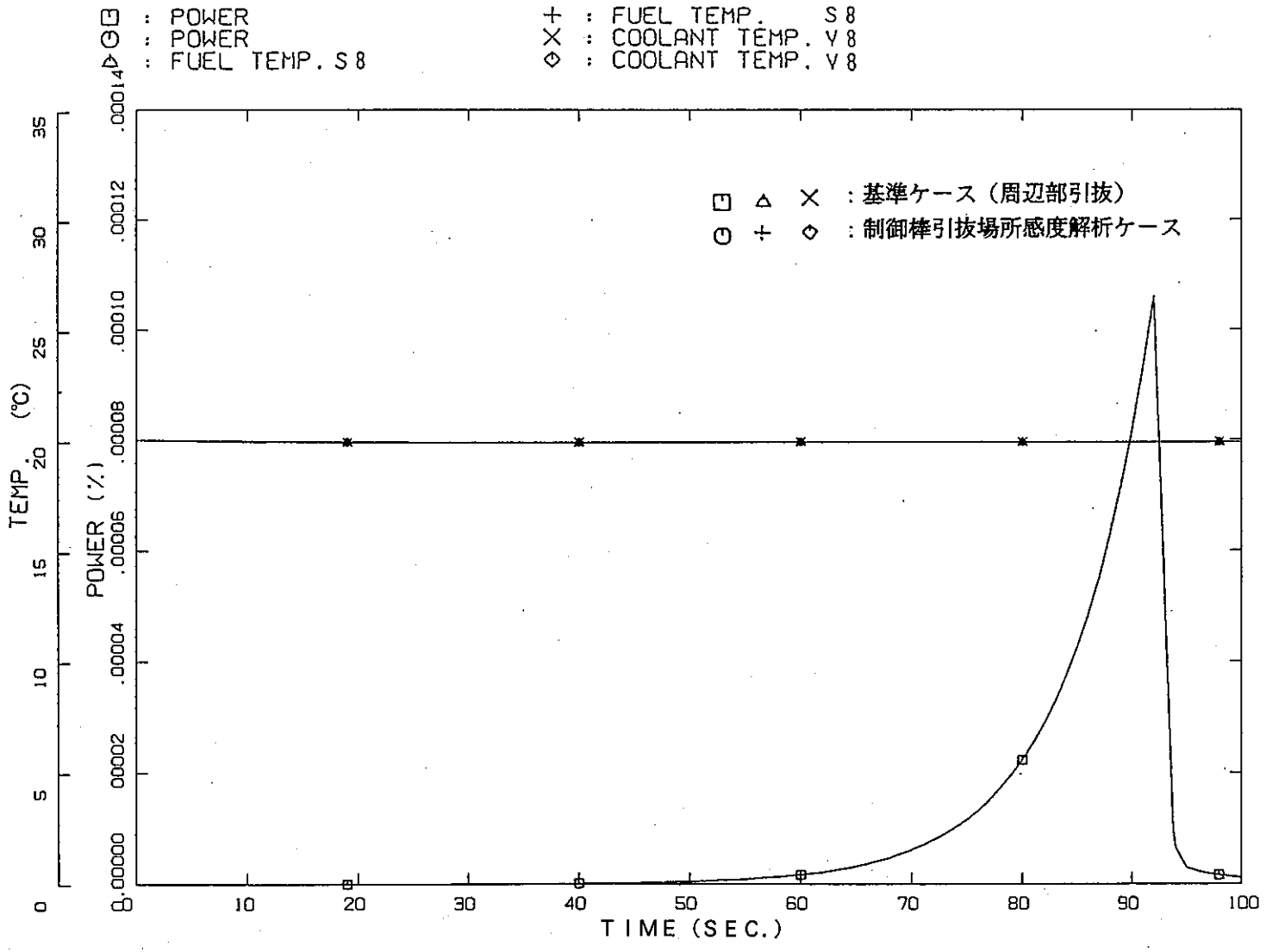


図5.33　制御棒引抜場所を炉心中央部としたＤＢＥ（パス⑤）
3次元感度解析における炉出力及び温度変化の比較

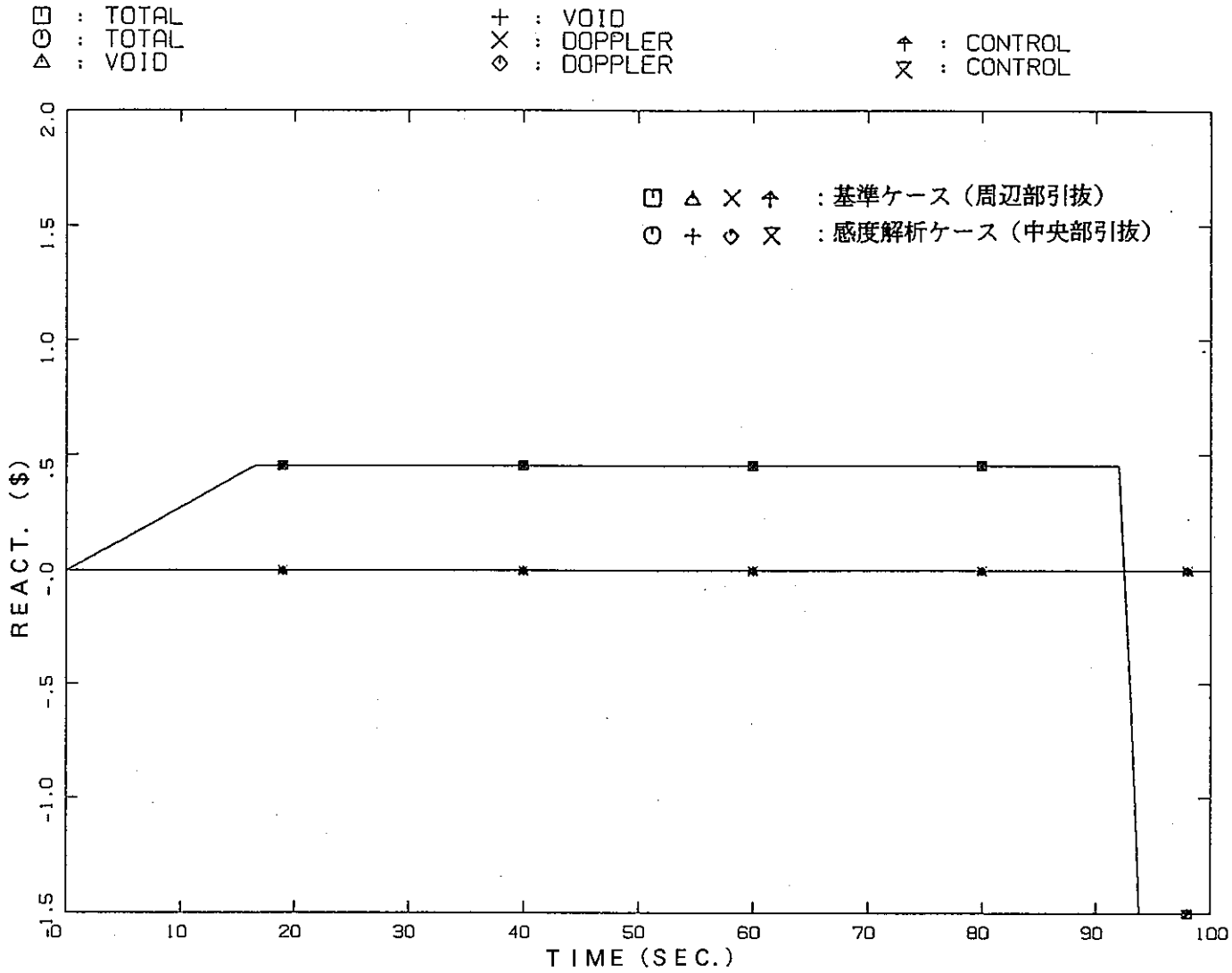
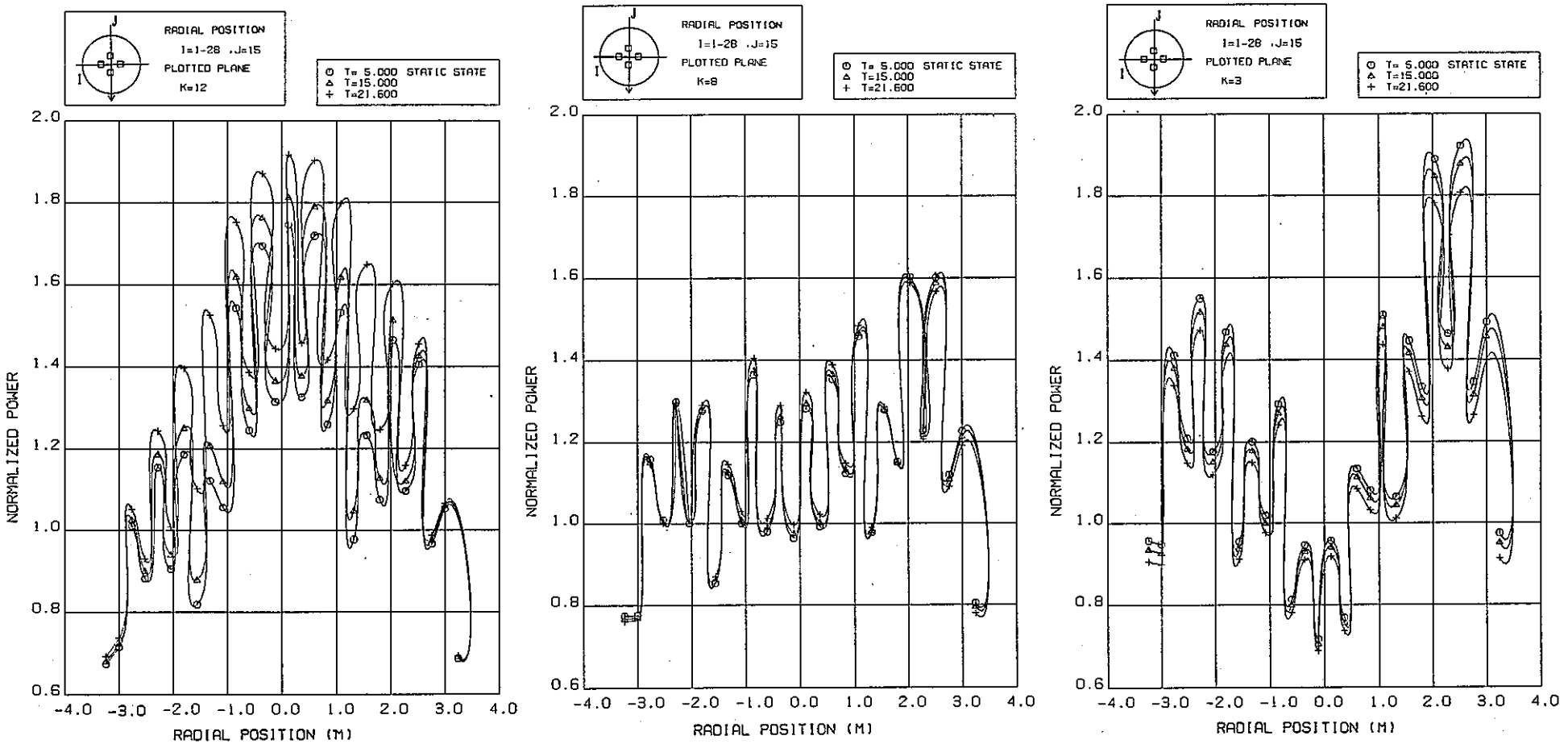
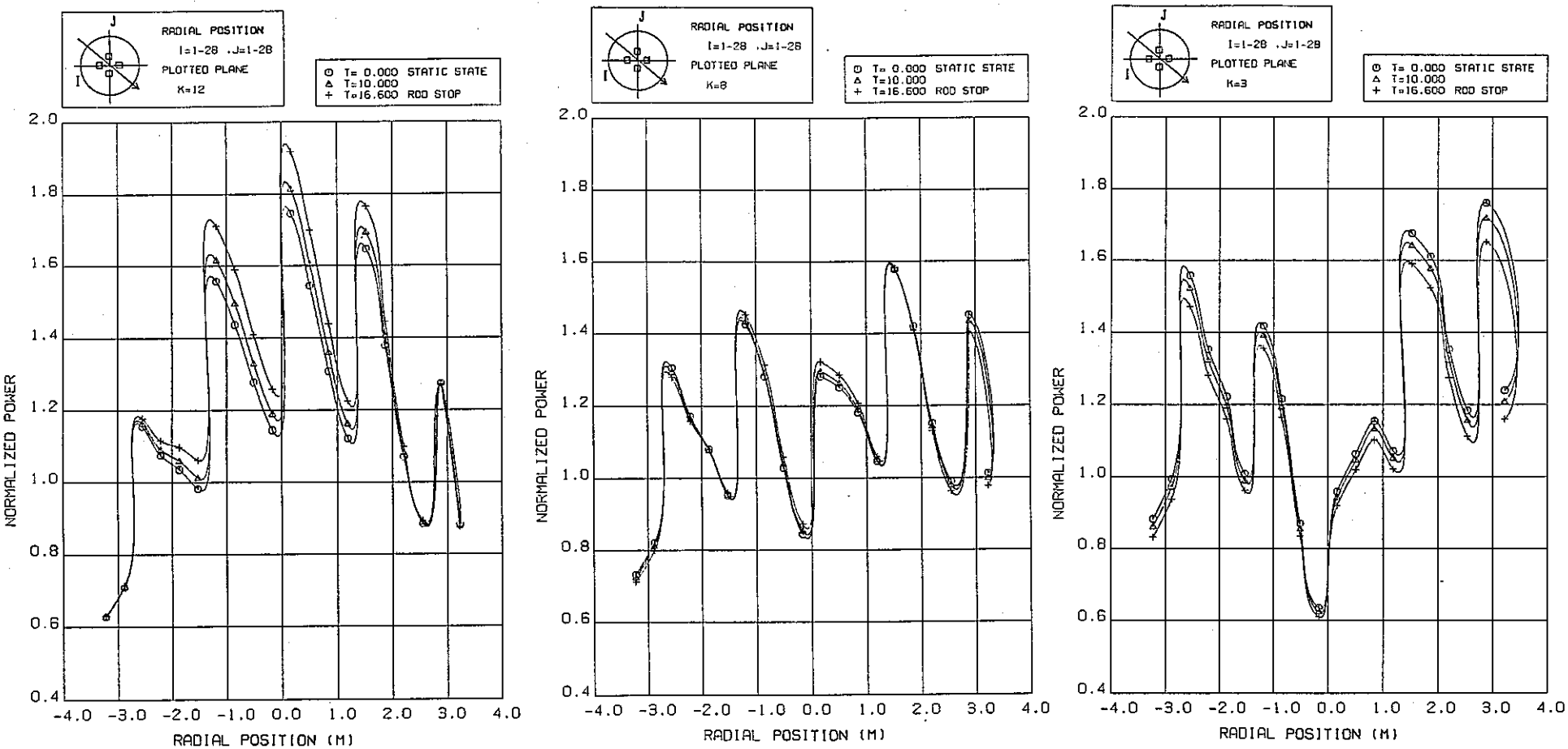


図5.34　制御棒引抜場所を炉心中央部としたＤＢＥ（パス⑤）
３次元感度解析における反応度変化の比較



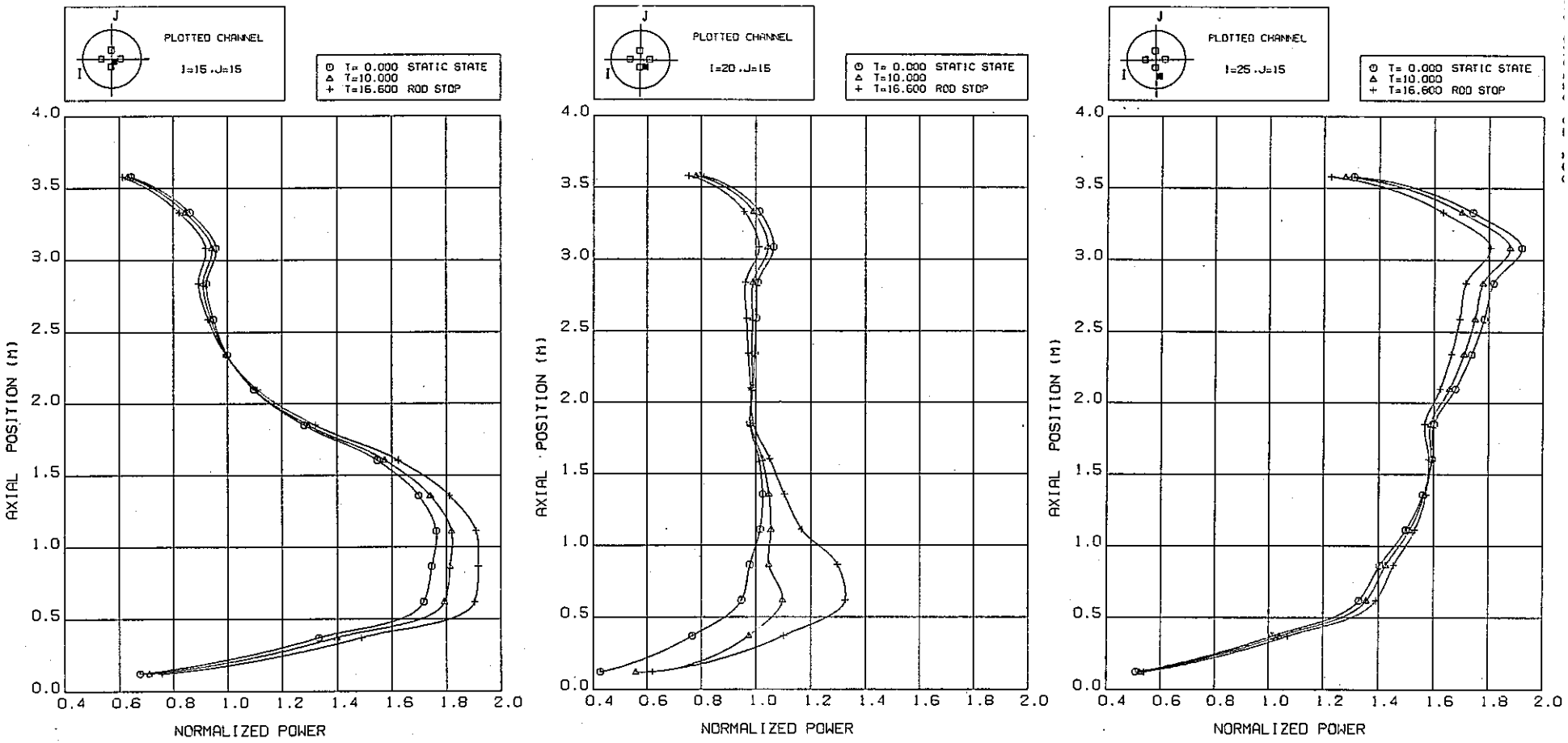
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.35　制御棒引抜場所を炉心中央部としたＤＢＥ（パス⑤）
３次元感度解析における径方向出力分布の変化
（０° 方向）



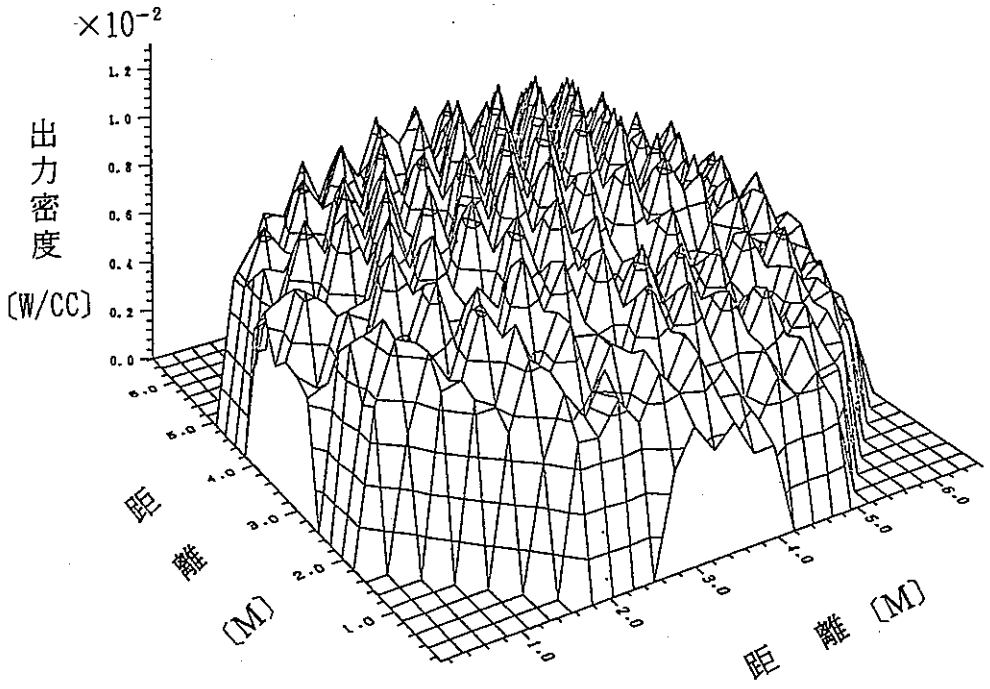
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.36　制御棒引抜場所を炉心中央部としたＤＢＥ（パス⑤）
３次元感度解析における径方向出力分布の変化
（45° 方向）

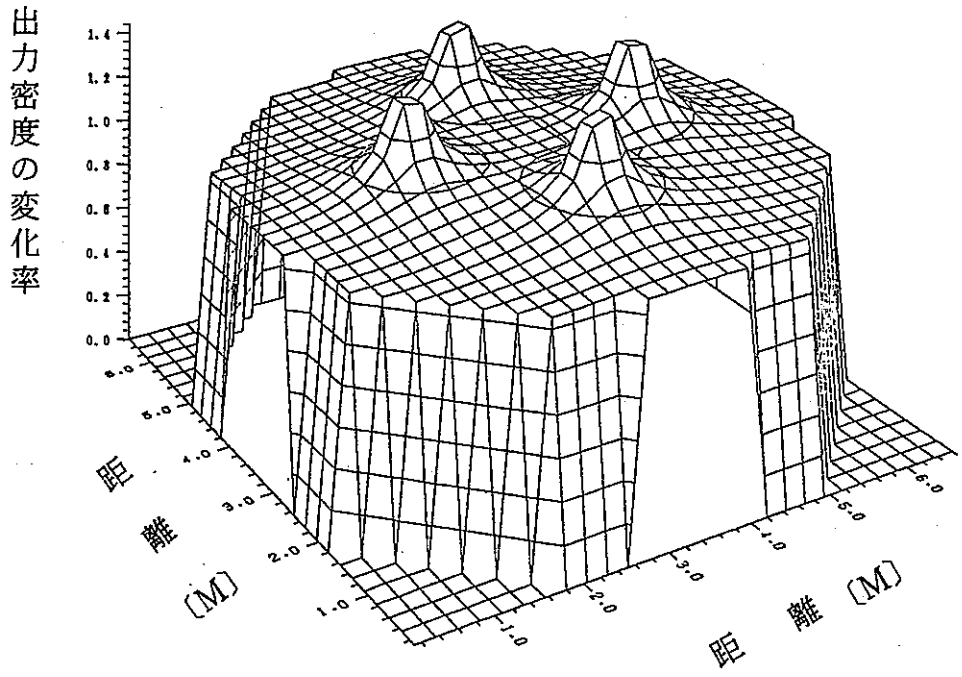


(1) 径方向中心部（ホッテストチャンネル）　(2) 引抜制御棒近傍　(3) 径方向周辺部

図5.37　制御棒引抜場所を炉心中央部としたＤＢＥ（パス⑤）３次元感度解析における径方向炉心各チャンネルの軸方向出力分布の変化



(1) 制御棒引抜開始時



(2) 制御棒引抜停止時（引抜開始時に対する変化率）

図5.38 制御棒引抜場所を炉心中央部としたＤＢＥ（パス⑤）３次元感度解析における制御棒引抜高さの中間位置での３次元出力分布

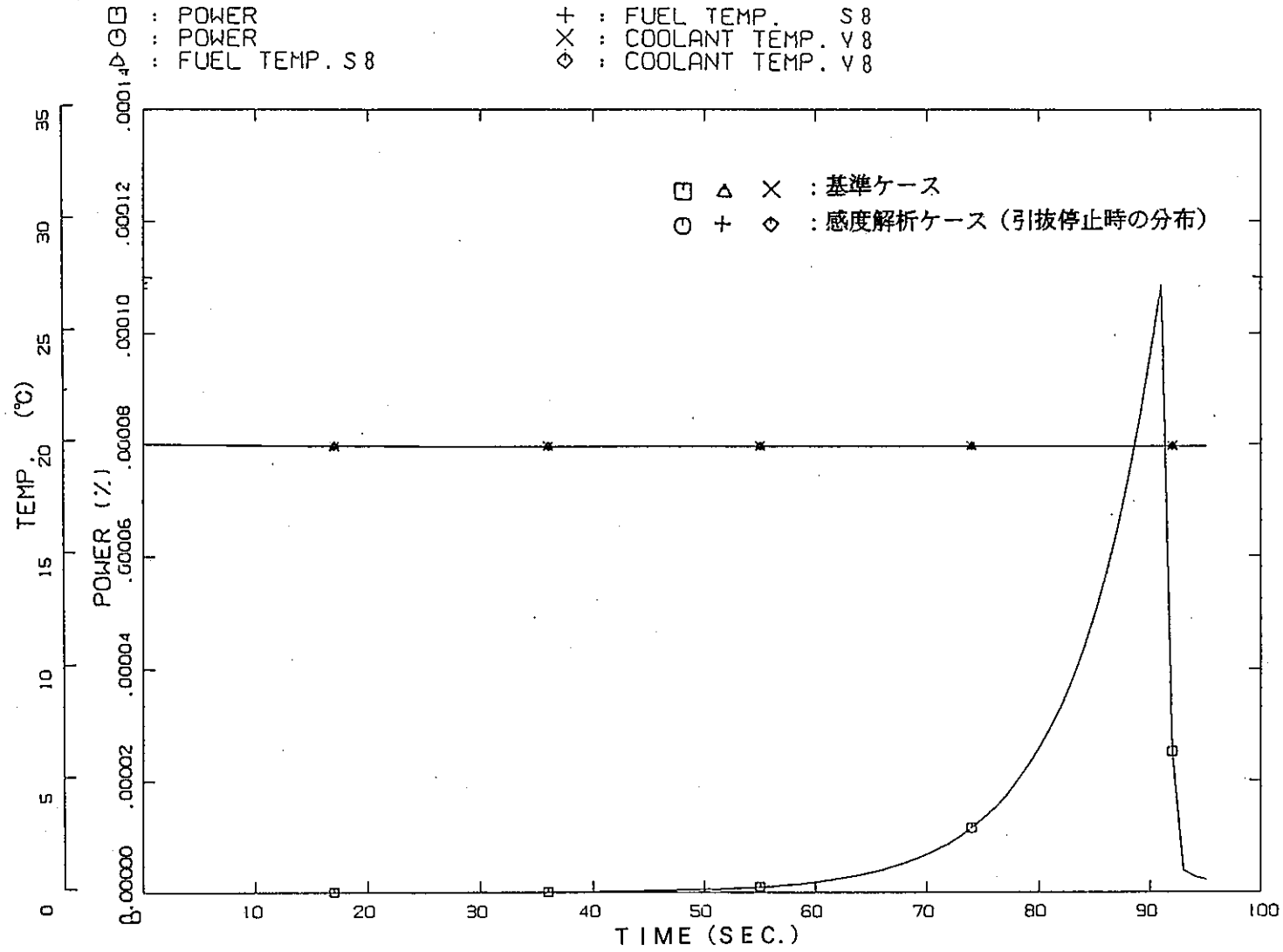


図5.39　設定出力分布に制御棒引抜停止時の分布を用いたＤＢＥ（パス⑤）１点近似感度解析における炉出力及び温度変化の比較

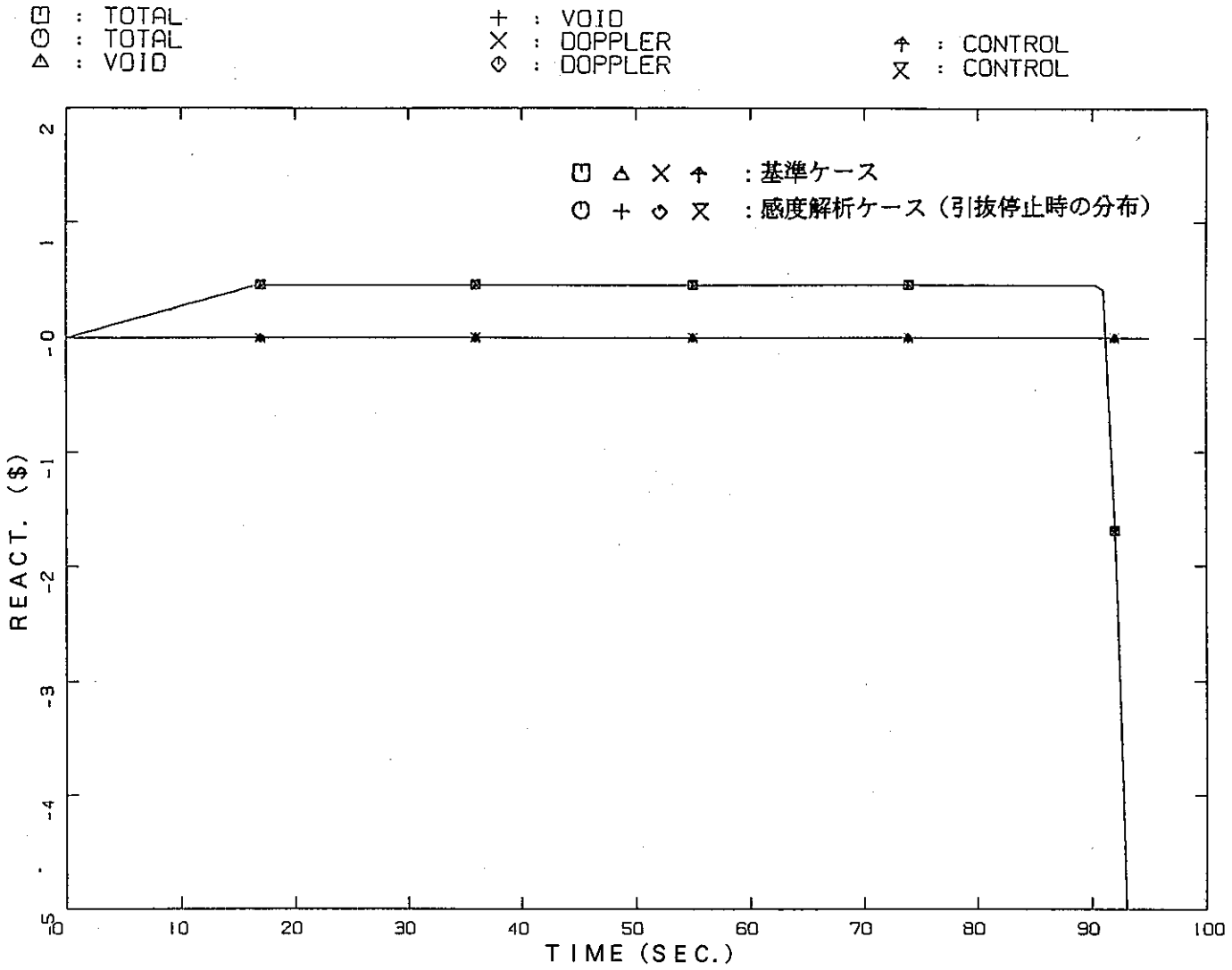


図5.40　設定出力分布に制御棒引抜停止時の分布を用いたＤＢＥ（パス⑤）１点近似感度解析における反応度変化の比較

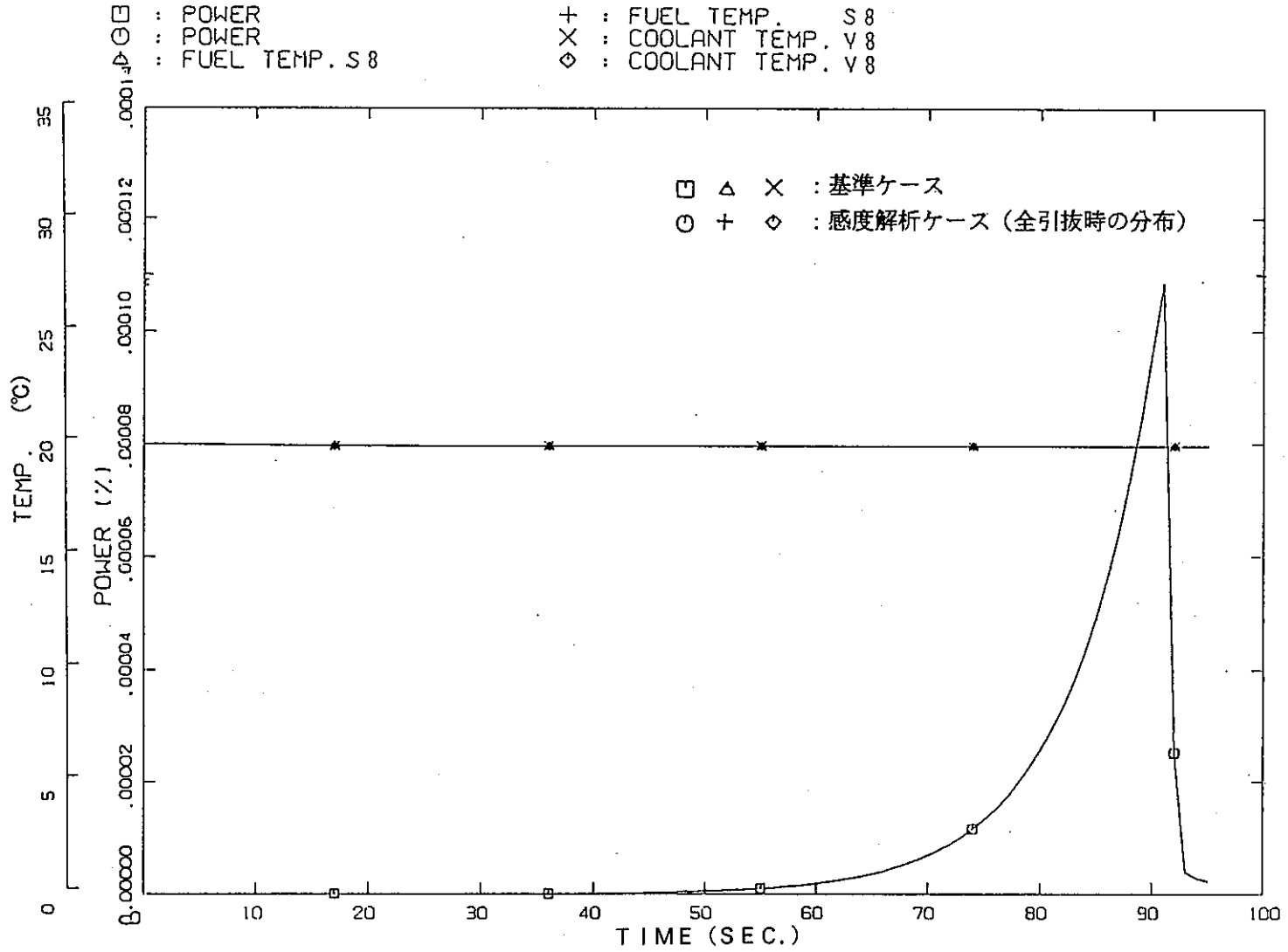


図5.41　設定出力分布に制御棒全引抜時の分布を用いたＤＢＥ（パス⑤）１点近似感度解析における炉出力及び温度変化の比較

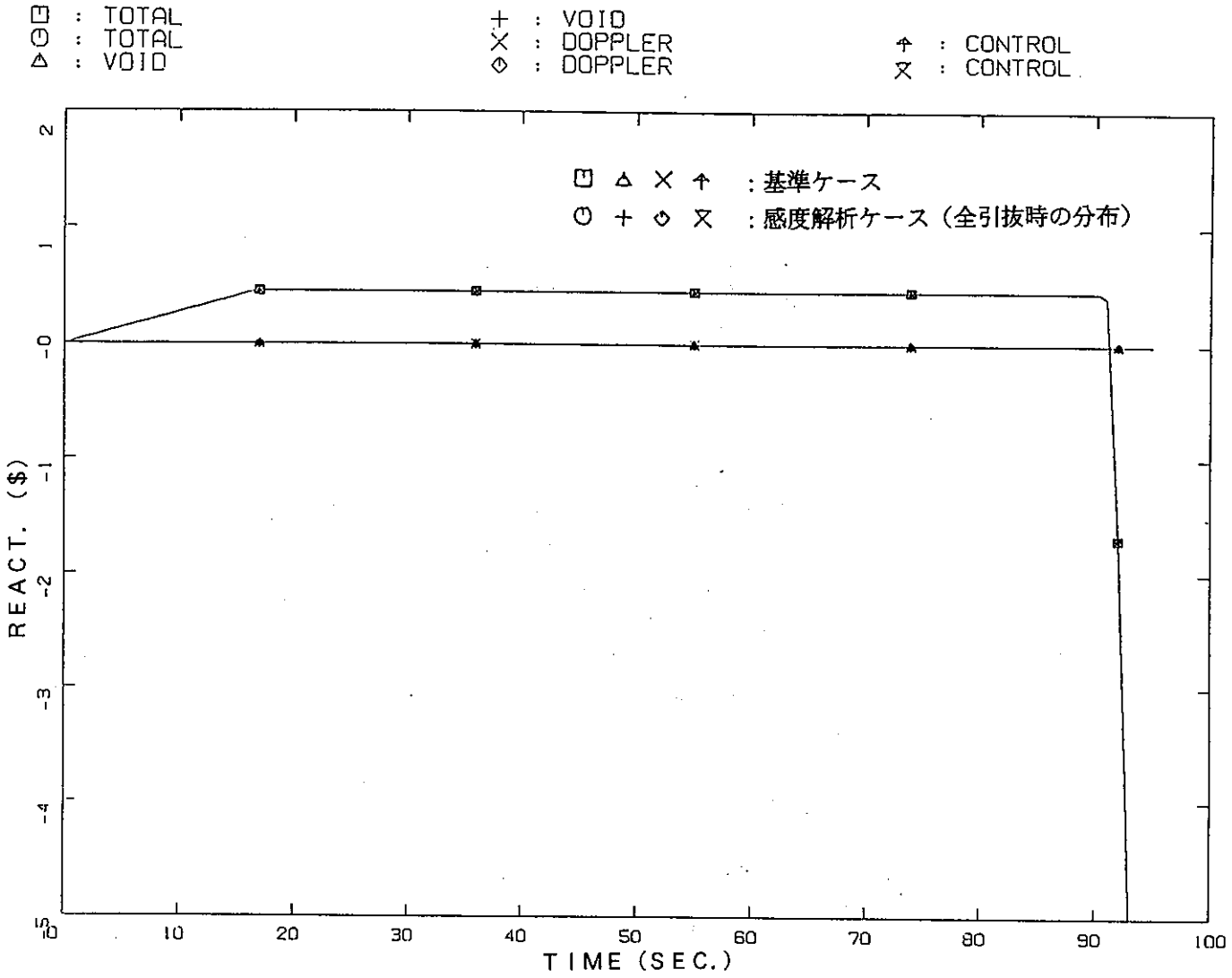
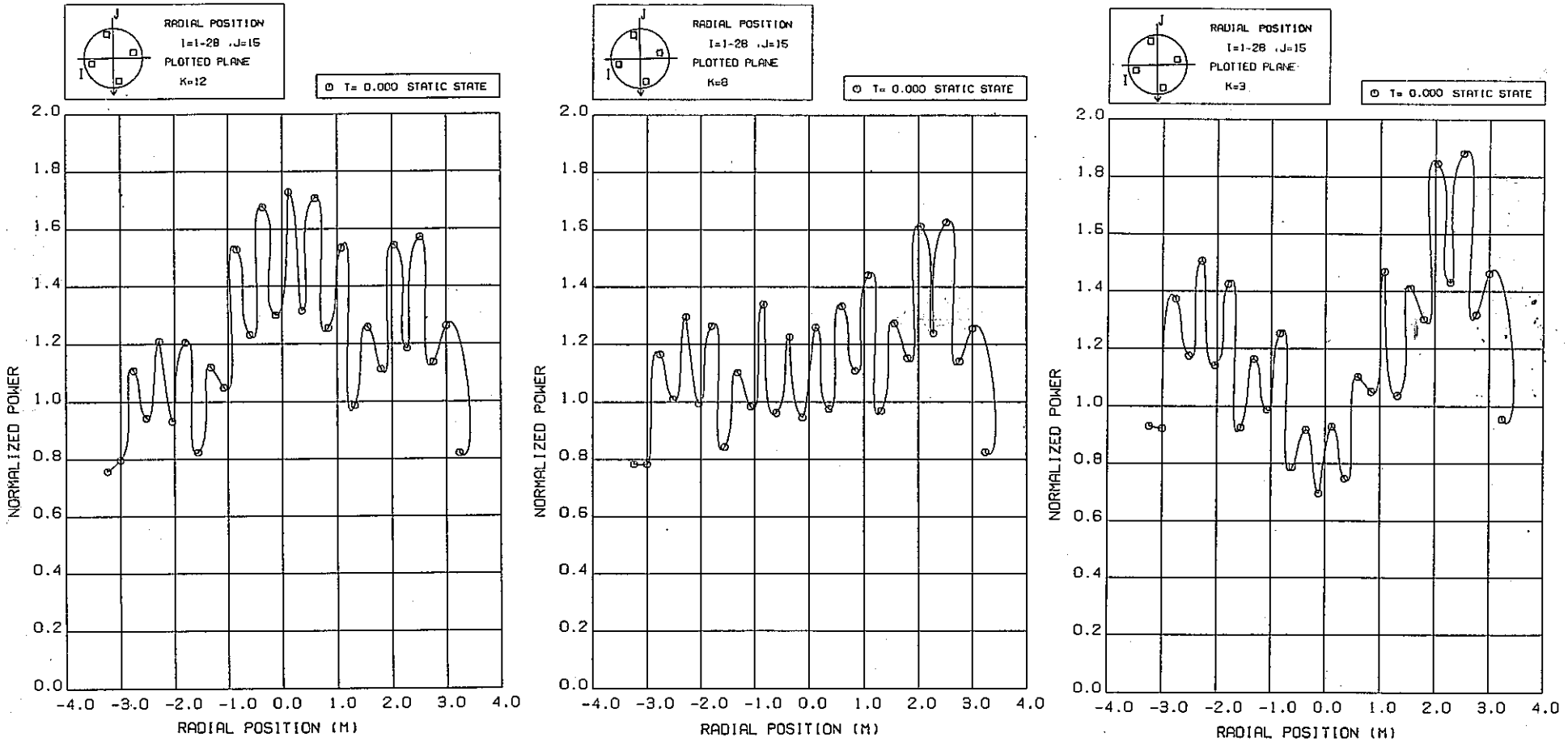
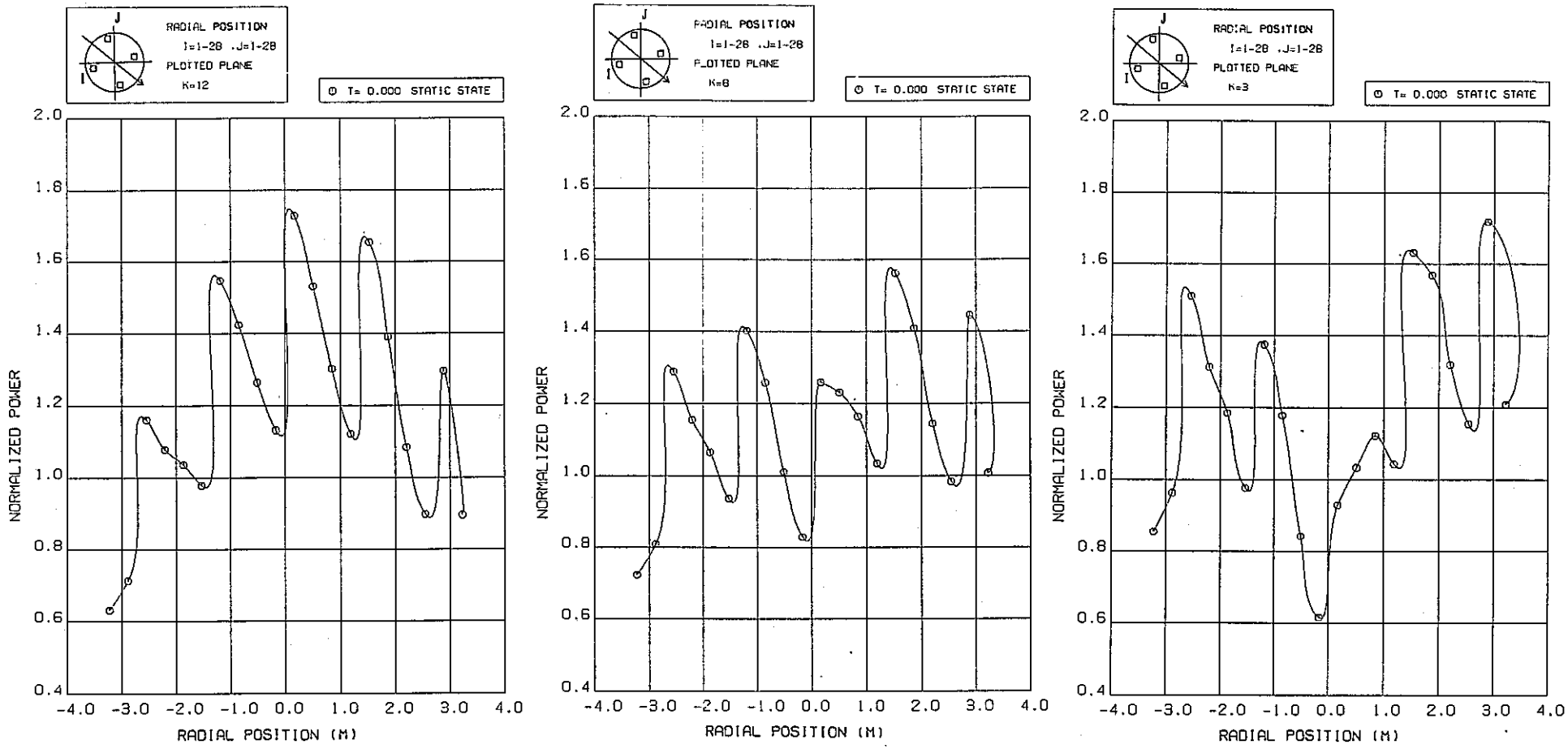


図5.42　設定出力分布に制御棒全引抜時の分布を用いたＤＢＥ（パス⑤）１点近似感度解析における反応度変化の比較



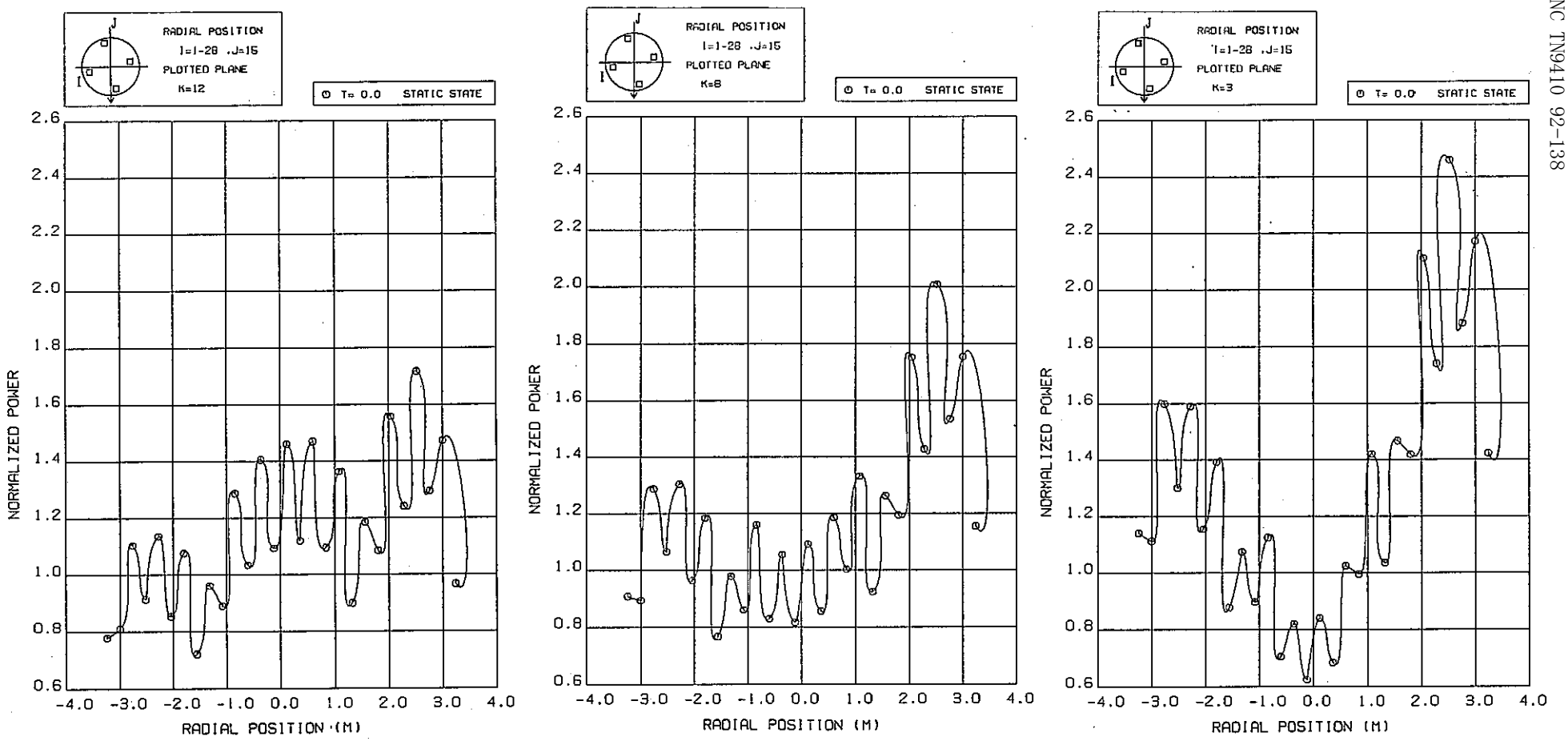
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.43　設定出力分布に制御棒引抜停止時の分布を用いたＤＢＥ（パス⑤）１点近似感度解析における径方向出力分布（０°方向）



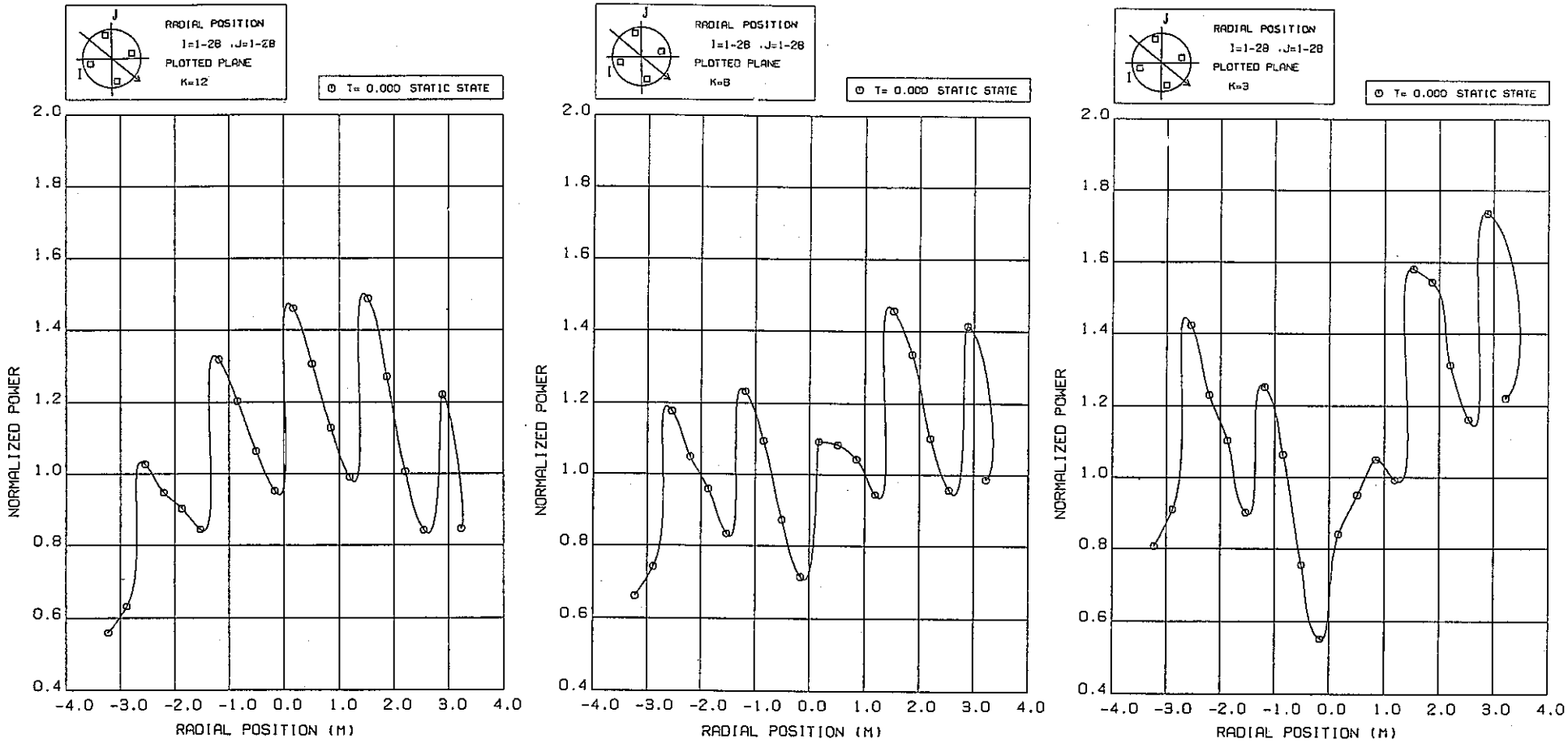
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.44　設定出力分布に制御棒引抜停止時の分布を用いたＤＢＥ（パス⑤）１点近似感度解析における径方向出力分布（45° 方向）



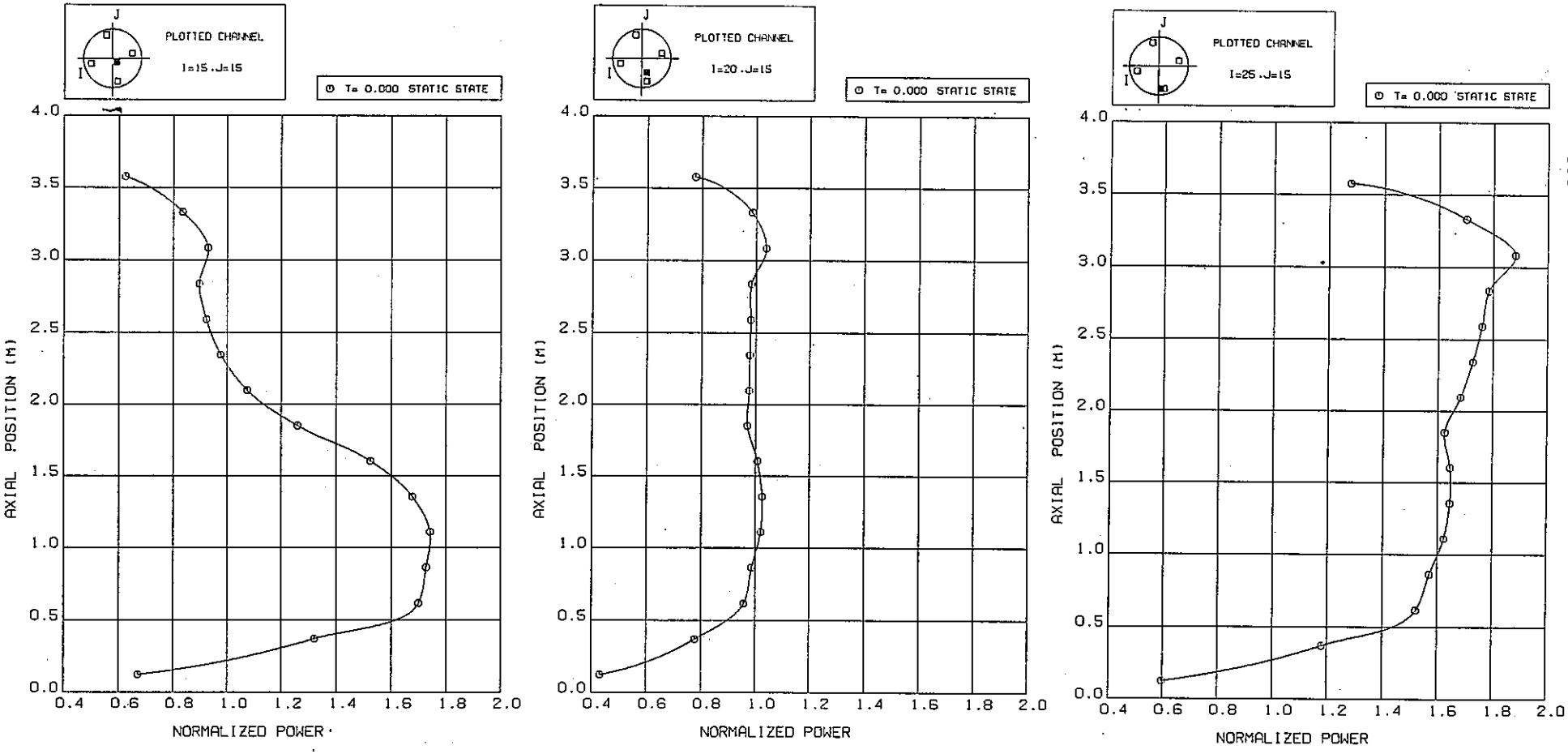
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.45　設定出力分布に制御棒全引抜時の分布を用いたＤＢＥ（パス⑤）１点近似感度解析における径方向出力分布（０°方向）



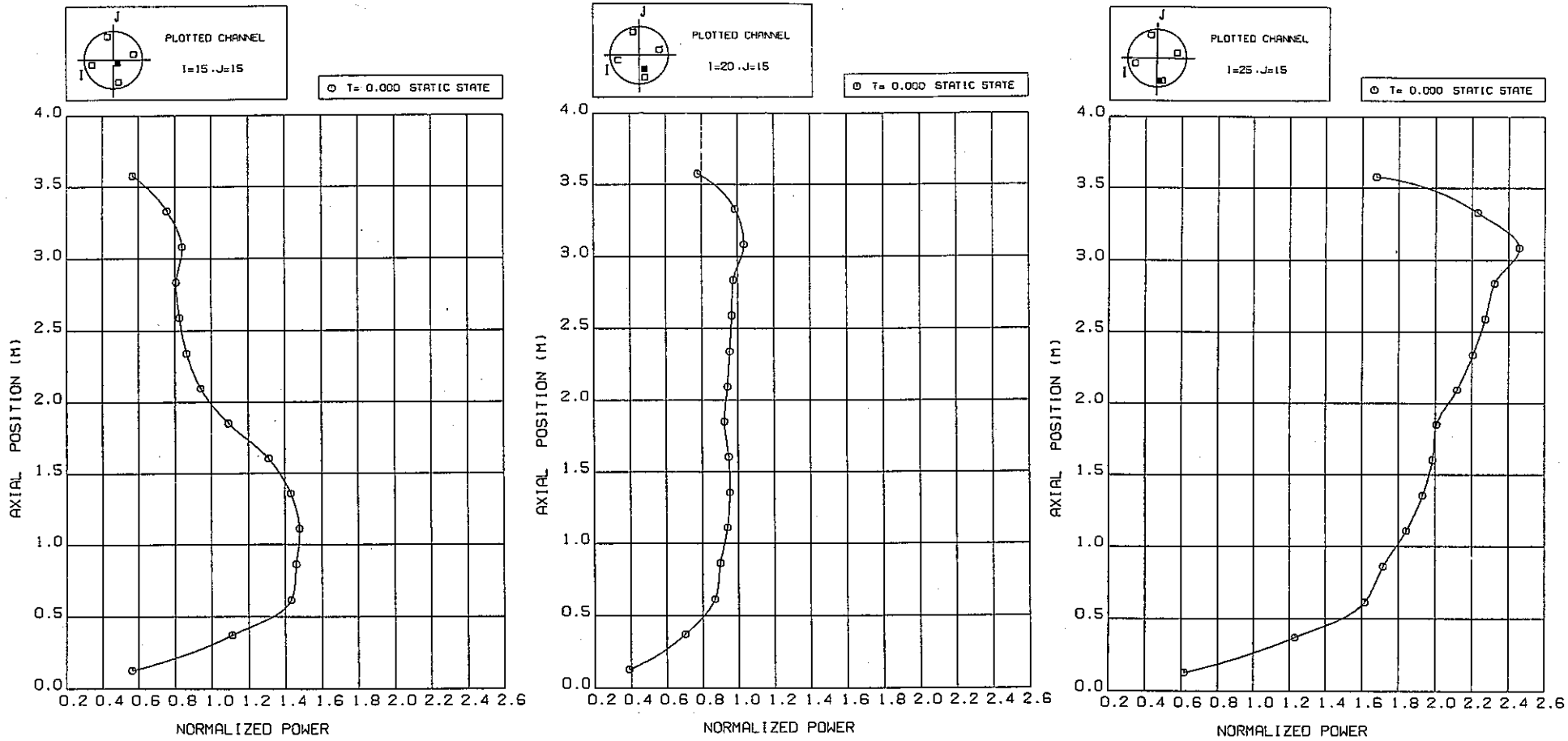
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.46　設定出力分布に制御棒全引抜時の分布を用いたＤＢＥ（パス⑤）１点近似感度解析における径方向出力分布（45°方向）



(1) 径方向中心部　　(2) 径方向中央部　　(3) 引抜制御棒近傍

図5.47　設定出力分布に制御棒引抜停止時の分布を用いたＤＢＥ（パス⑤）１点近似感度解析における径方向炉心各チャンネルの軸方向出力分布



(1) 径方向中心部　　(2) 径方向中央部　　(3) 引抜制御棒近傍

図5.48　設定出力分布に制御棒全引抜時の分布を用いたＤＢＥ（パス⑤）１点近似感度解析における径方向炉心各チャンネルの軸方向出力分布

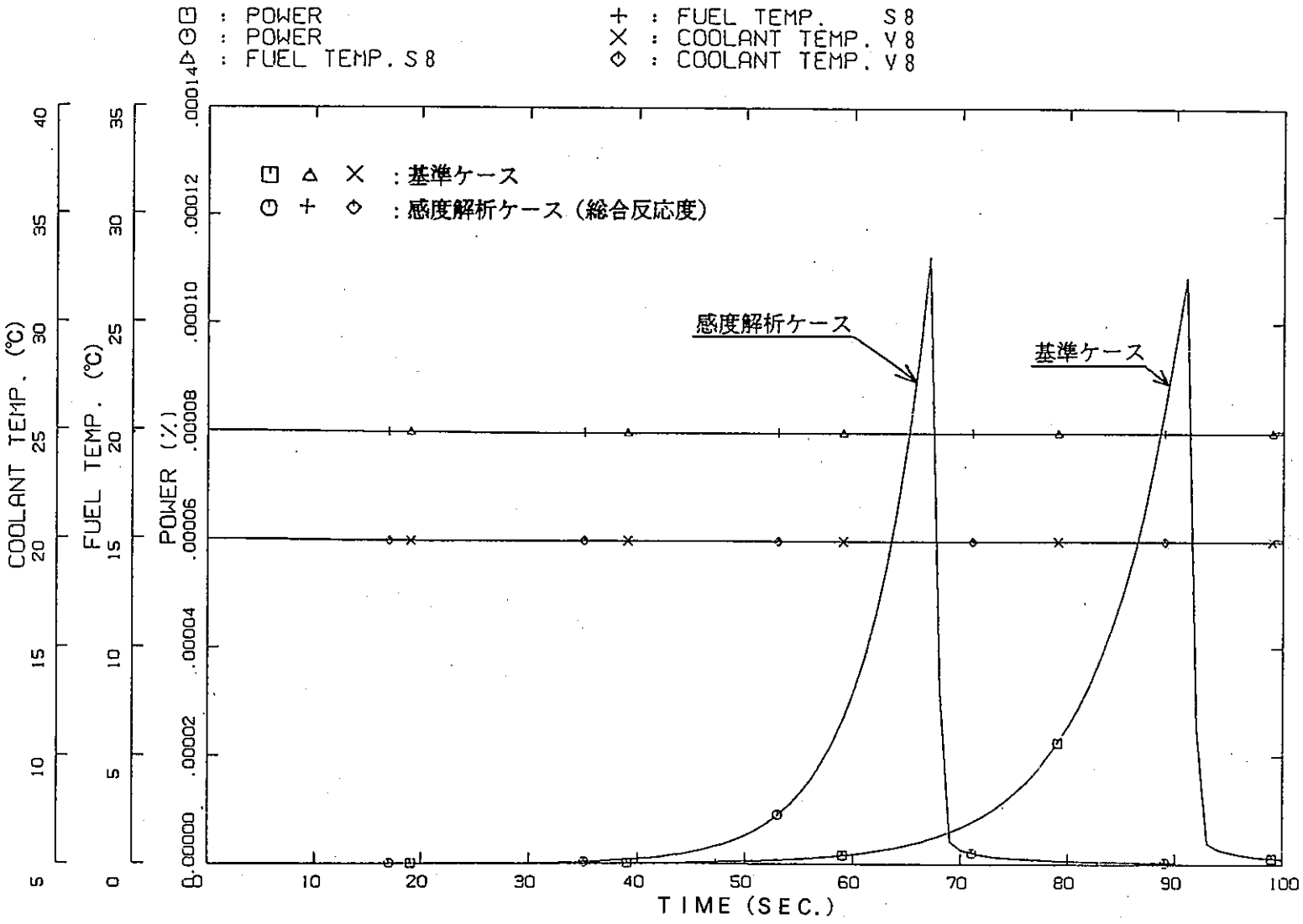


図5.49　総合反応度を使用したＤＢＥ（パス⑤）１点近似感度解析における炉出力及び温度変化の比較

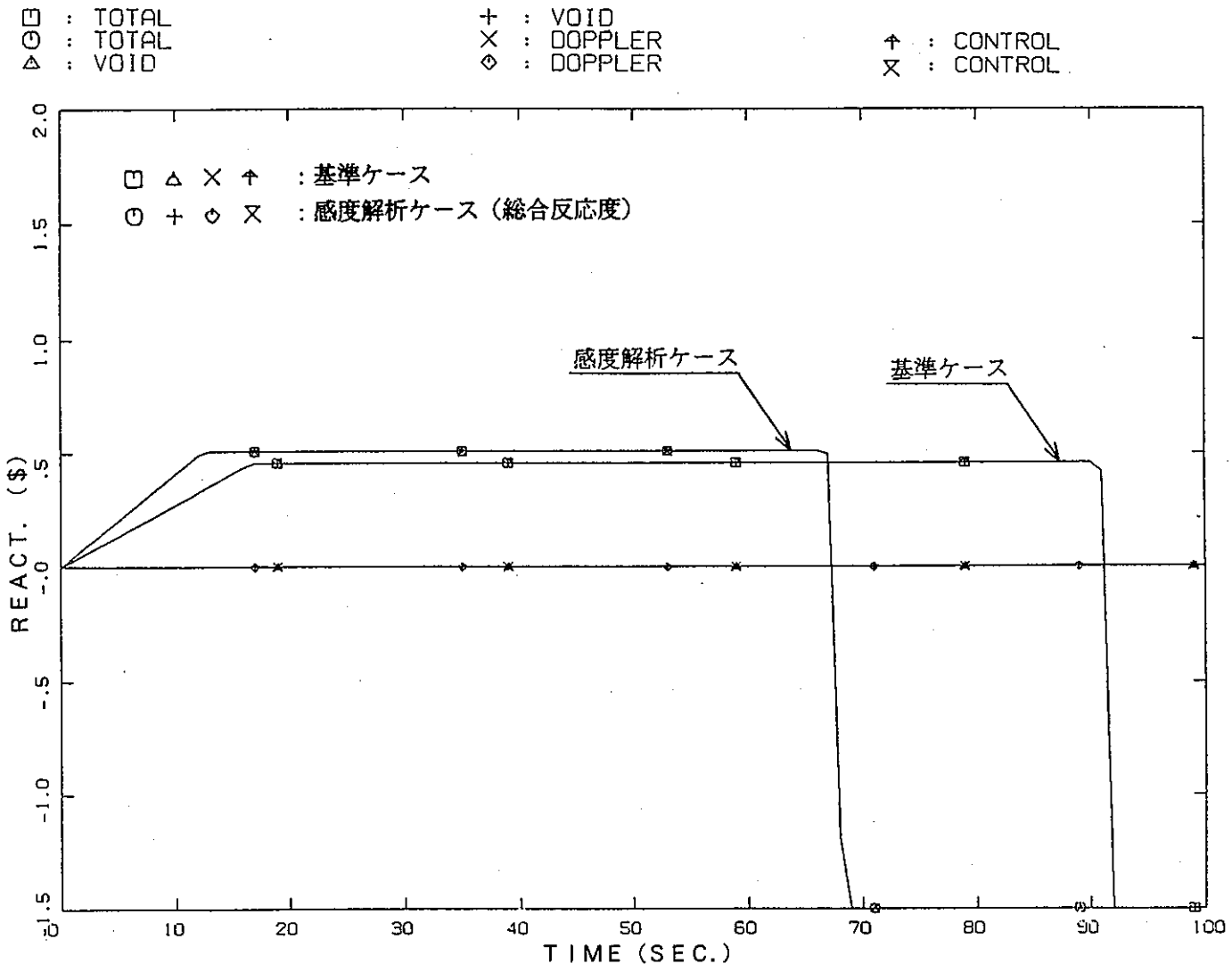


図5.50　総合反応度を使用したＤＢＥ（パス⑤）１点近似感度解析における反応度変化の比較

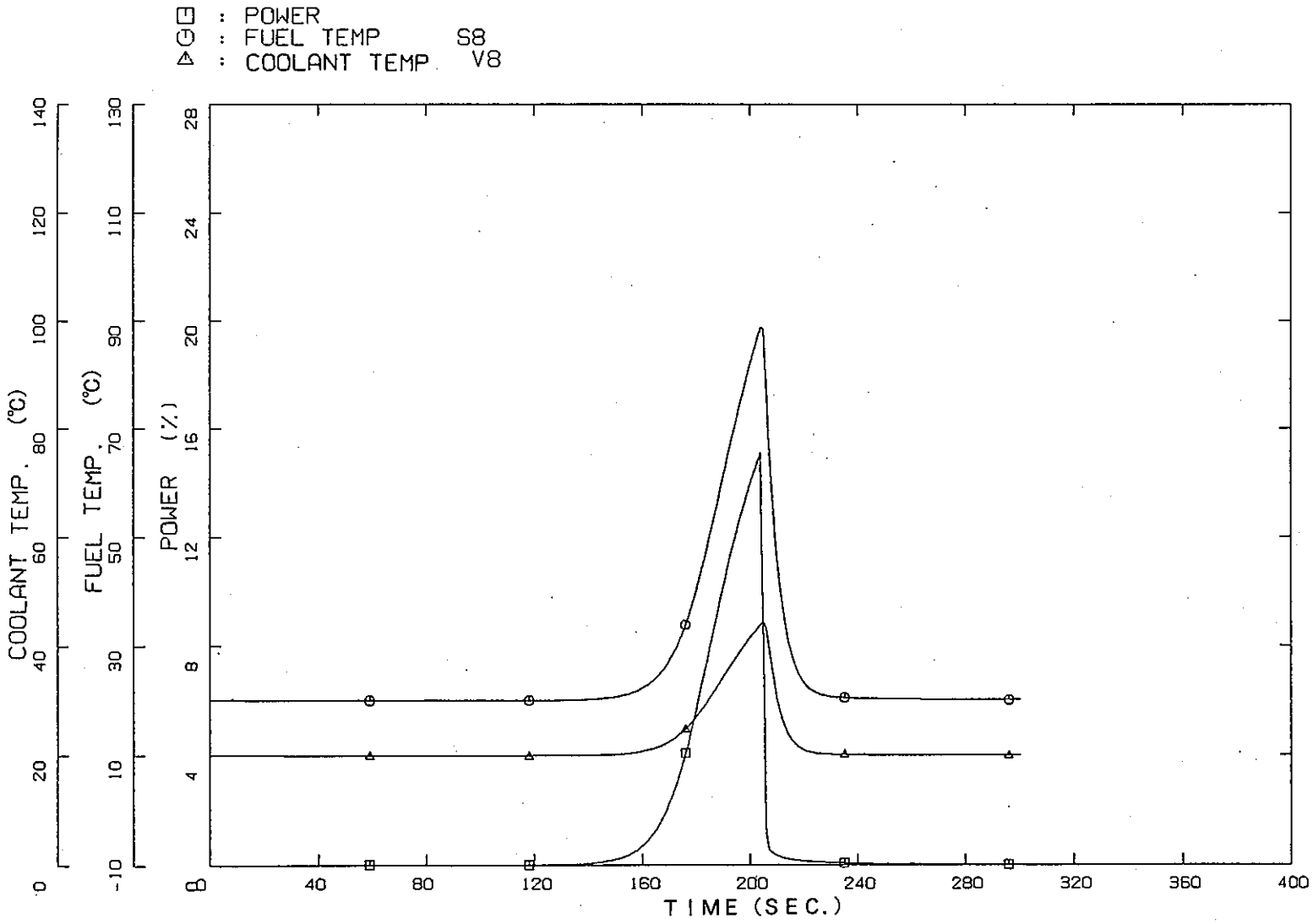


図5.51　ＢＤＢＥ(パス⑥)基準ケースの３次元解析における炉出力及び温度の変化

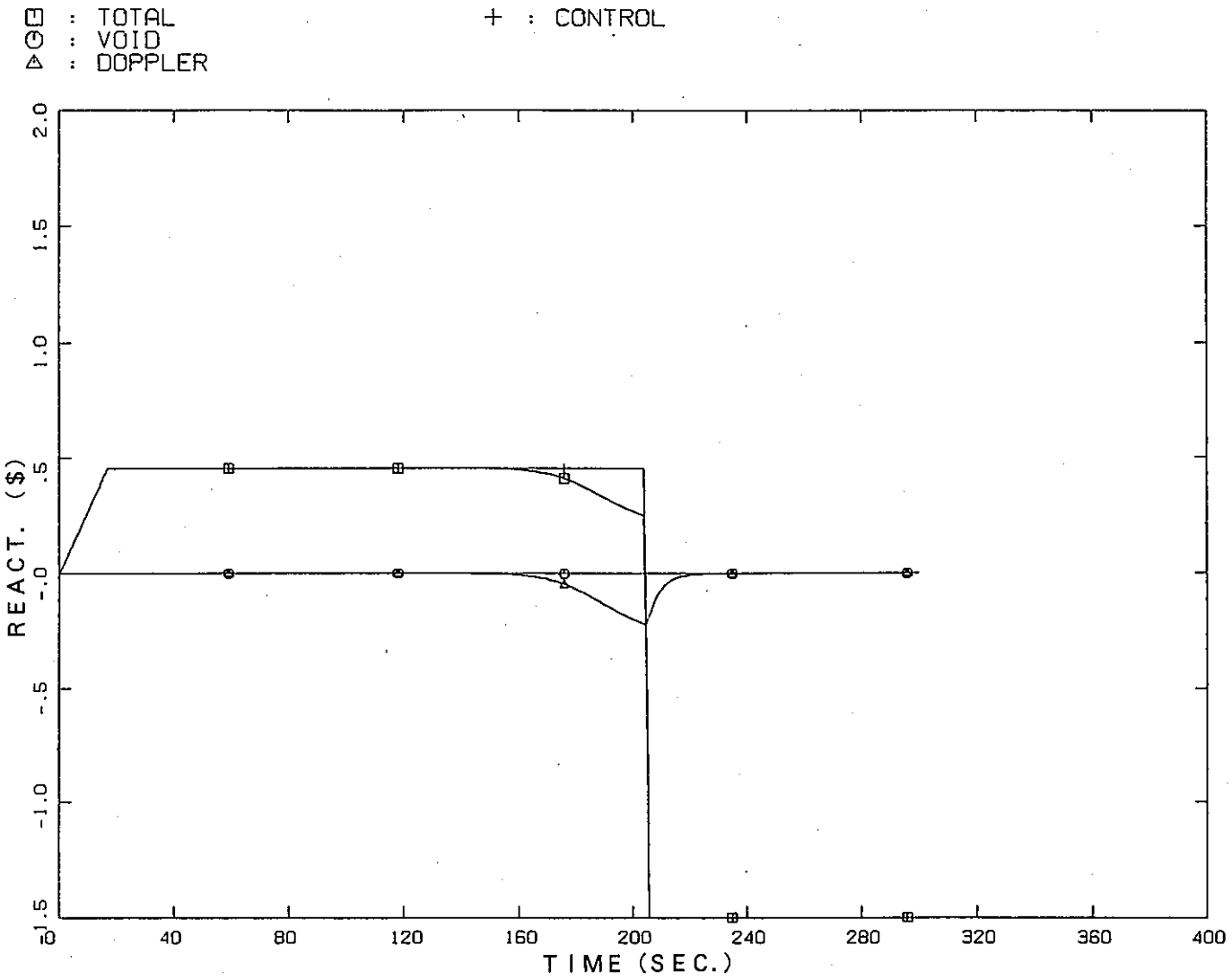


図5.52　ＢＤＢＥ(パス⑥)基準ケースの３次元解析における反応度の変化

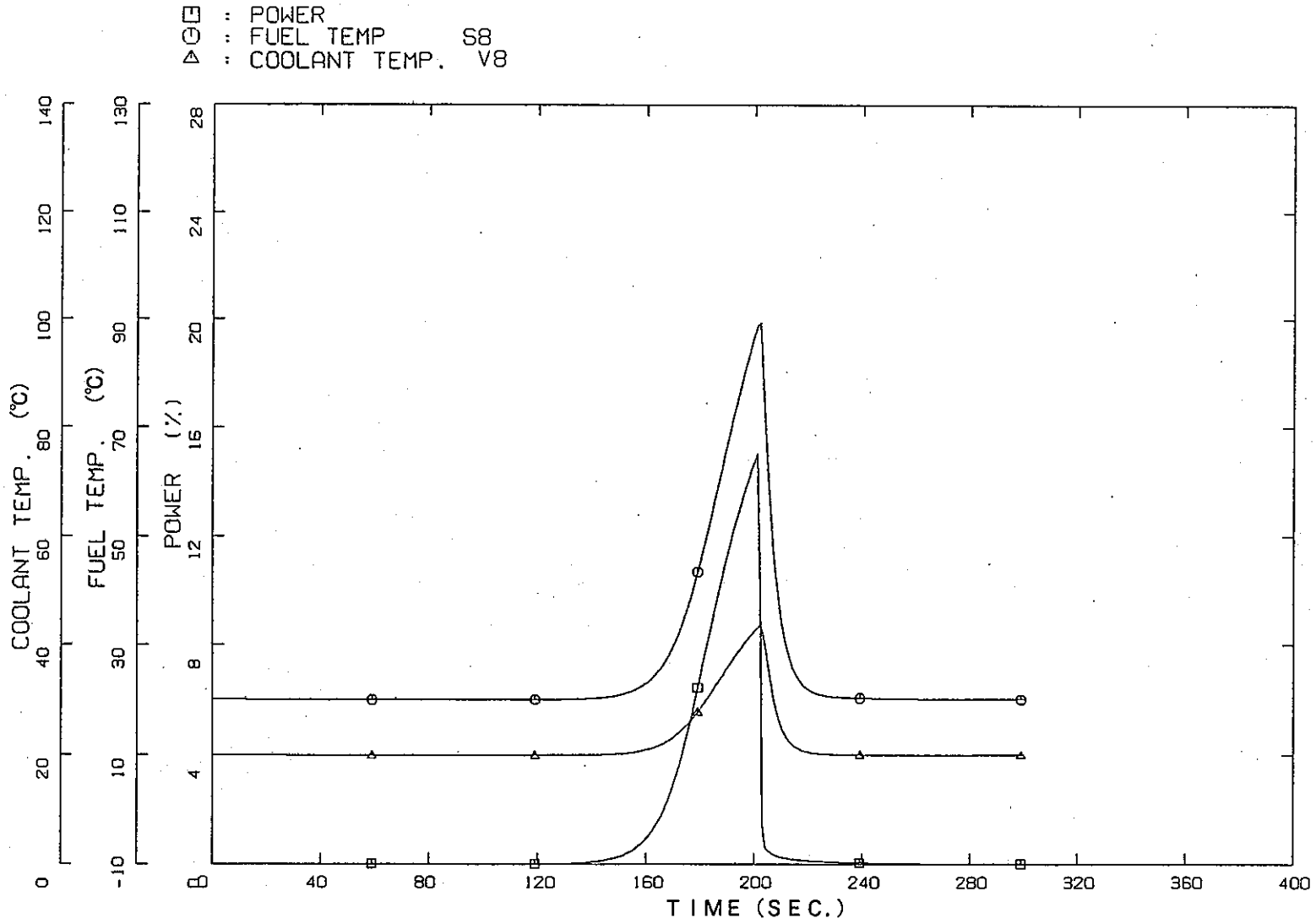


図5.53　ＢＤＢＥ(パス⑥)基準ケースの１点近似解析における炉出力及び温度の変化

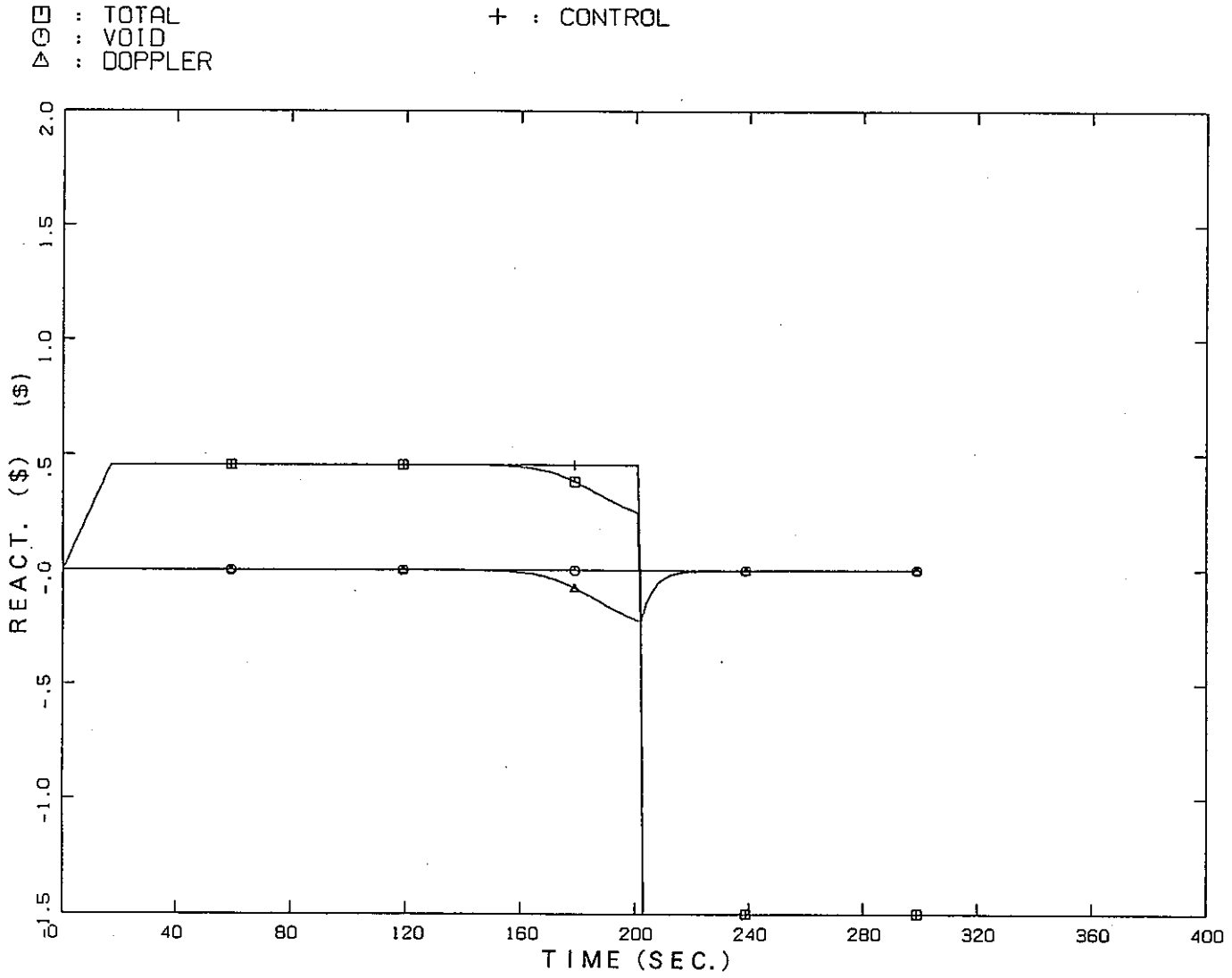
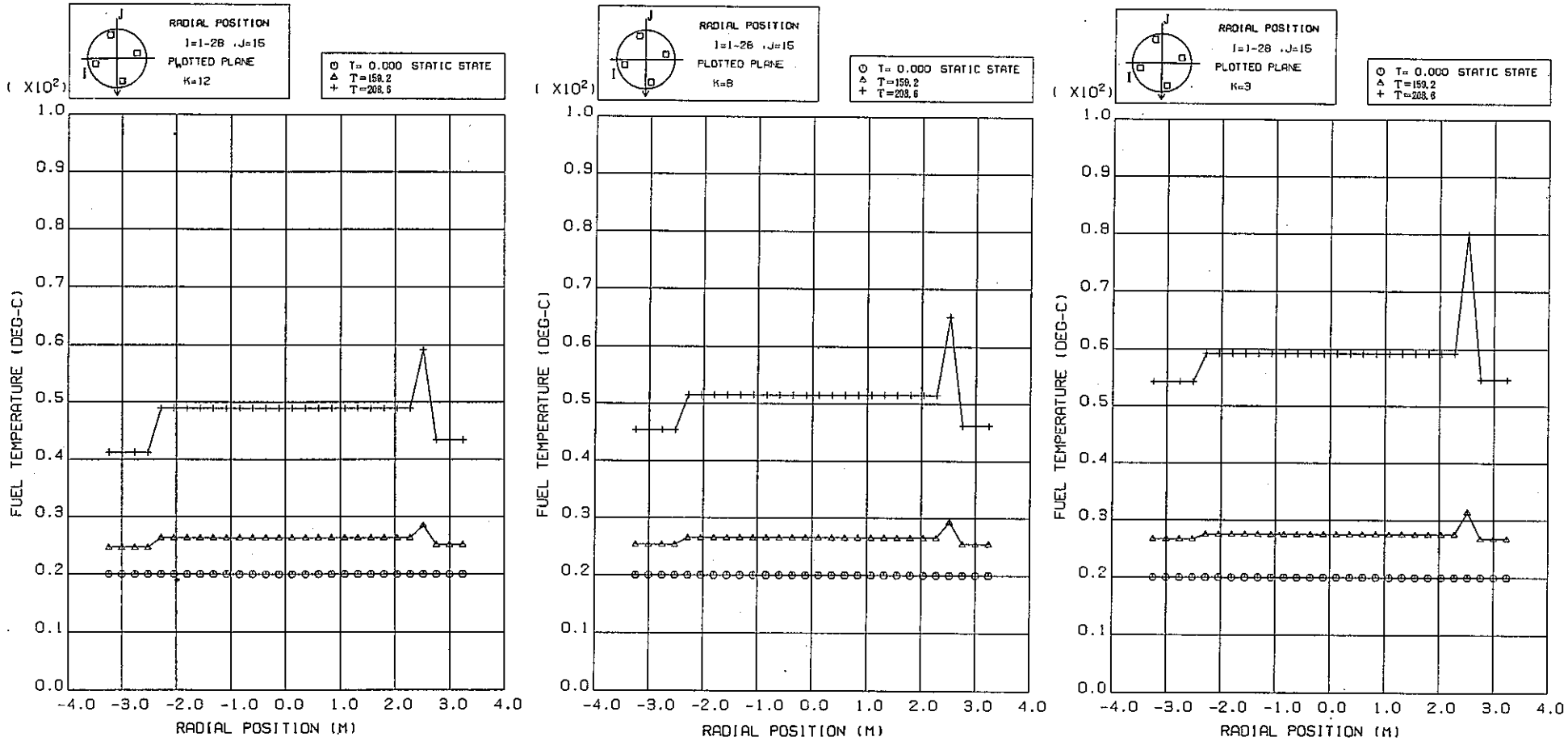
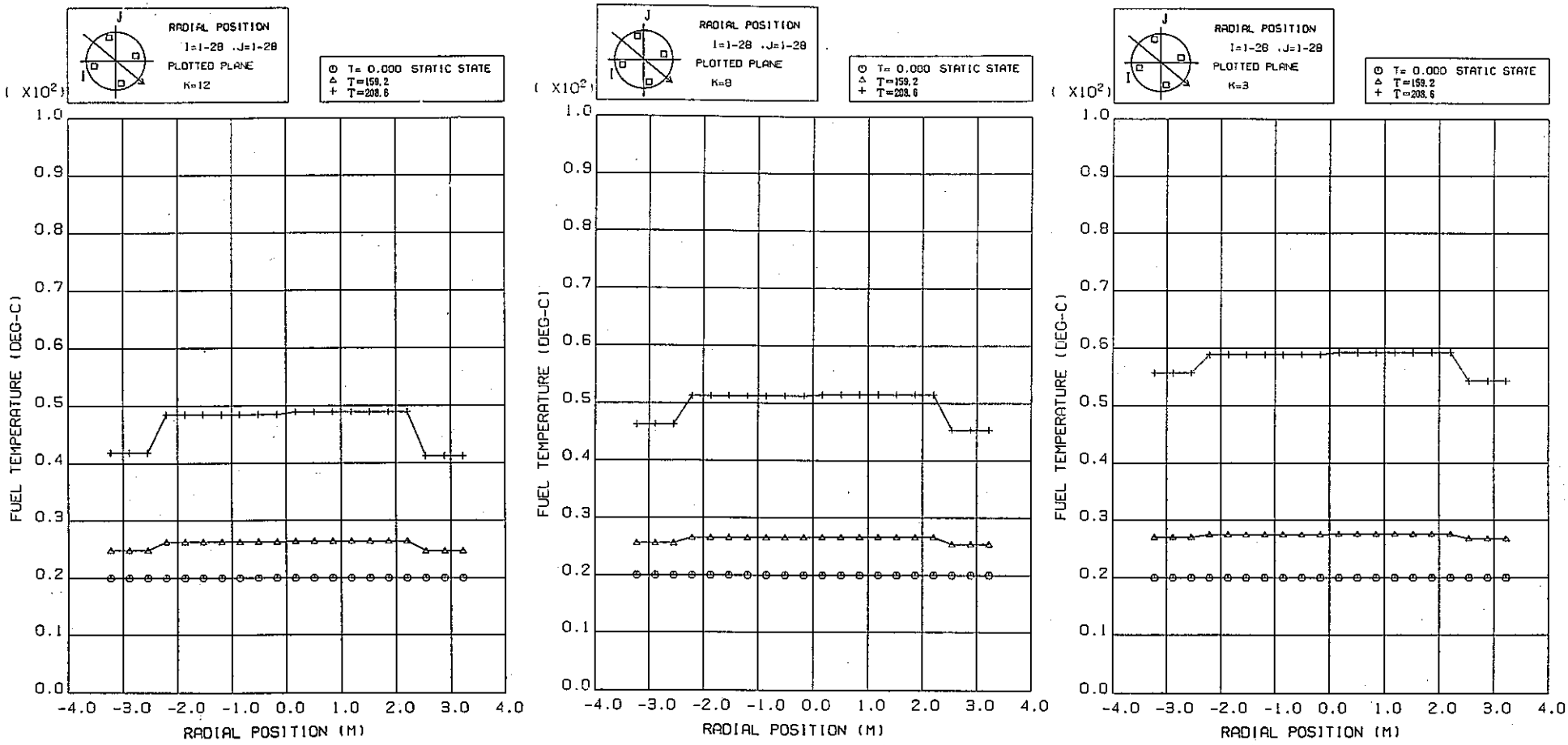


図5.54　ＢＤＢＥ(パス⑥)基準ケースの１点近似解析における反応度の変化



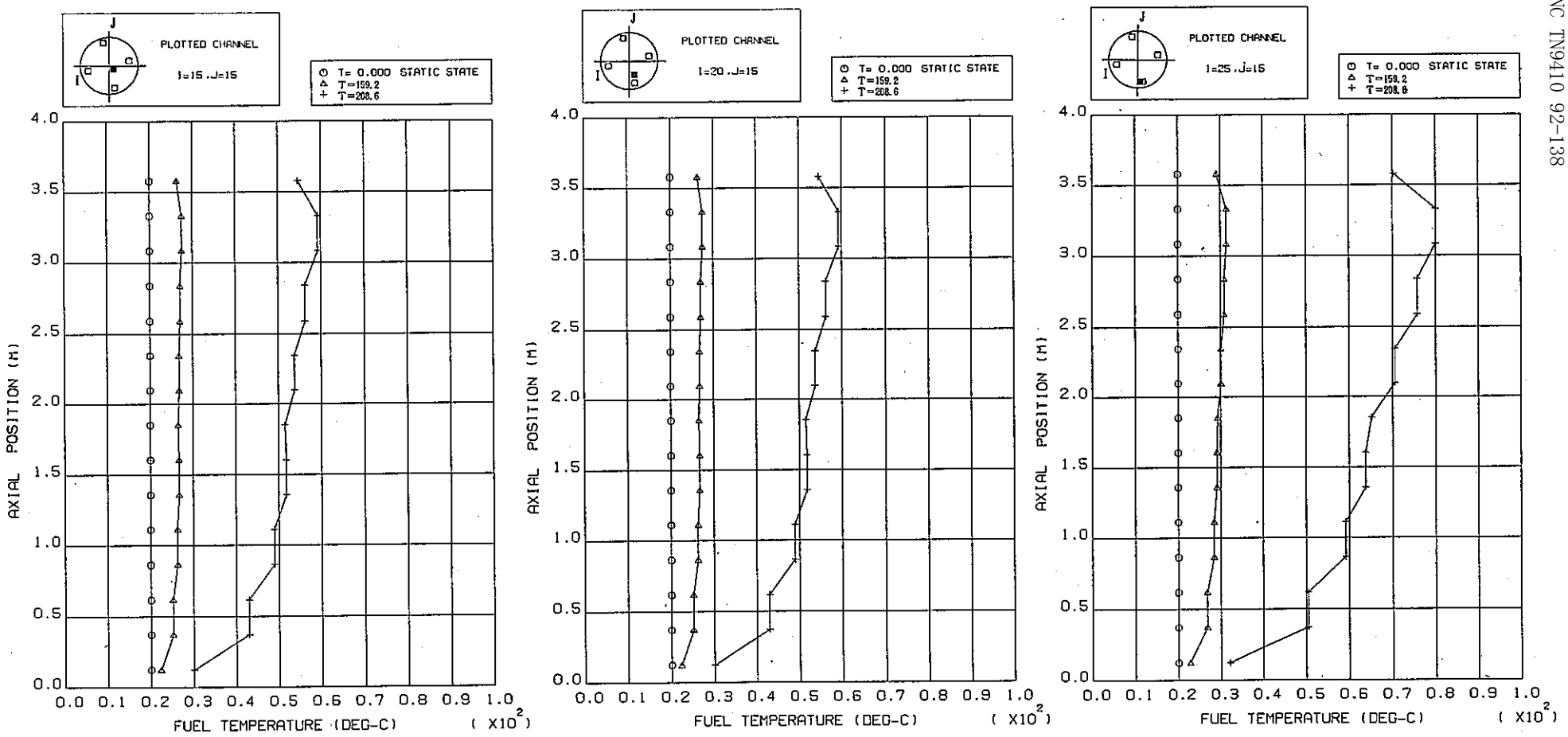
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.55　ＢＤＢＥ（パス⑥）基準ケースの３次元解析における径方向燃料温度分布の変化（０°方向）



(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.56　ＢＤＢＥ（パス⑥）基準ケースの３次元解析における径方向燃料温度分布の変化（45° 方向）



(1) 径方向中心部　　(2) 径方向中央部　　(3) 引抜制御棒近傍

図5.57　ＢＤＢＥ（パス⑥）基準ケースの３次元解析における径方向炉心各チャンネルの軸方向燃料温度分布の変化

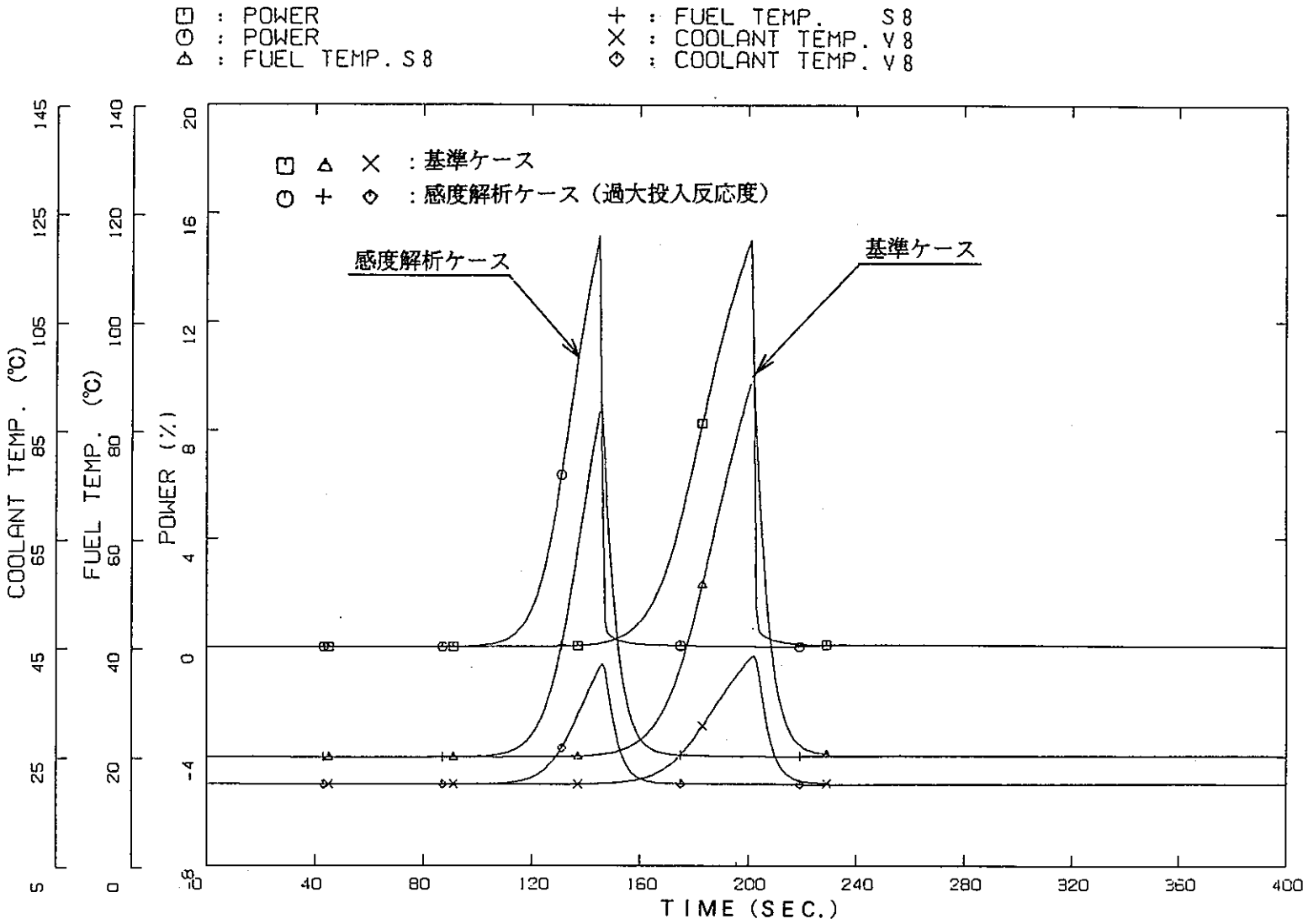


図5.58　過大投入反応度を用いたＢＤＢＥ（パス⑥）３次元感度解析における炉出力及び温度変化の比較

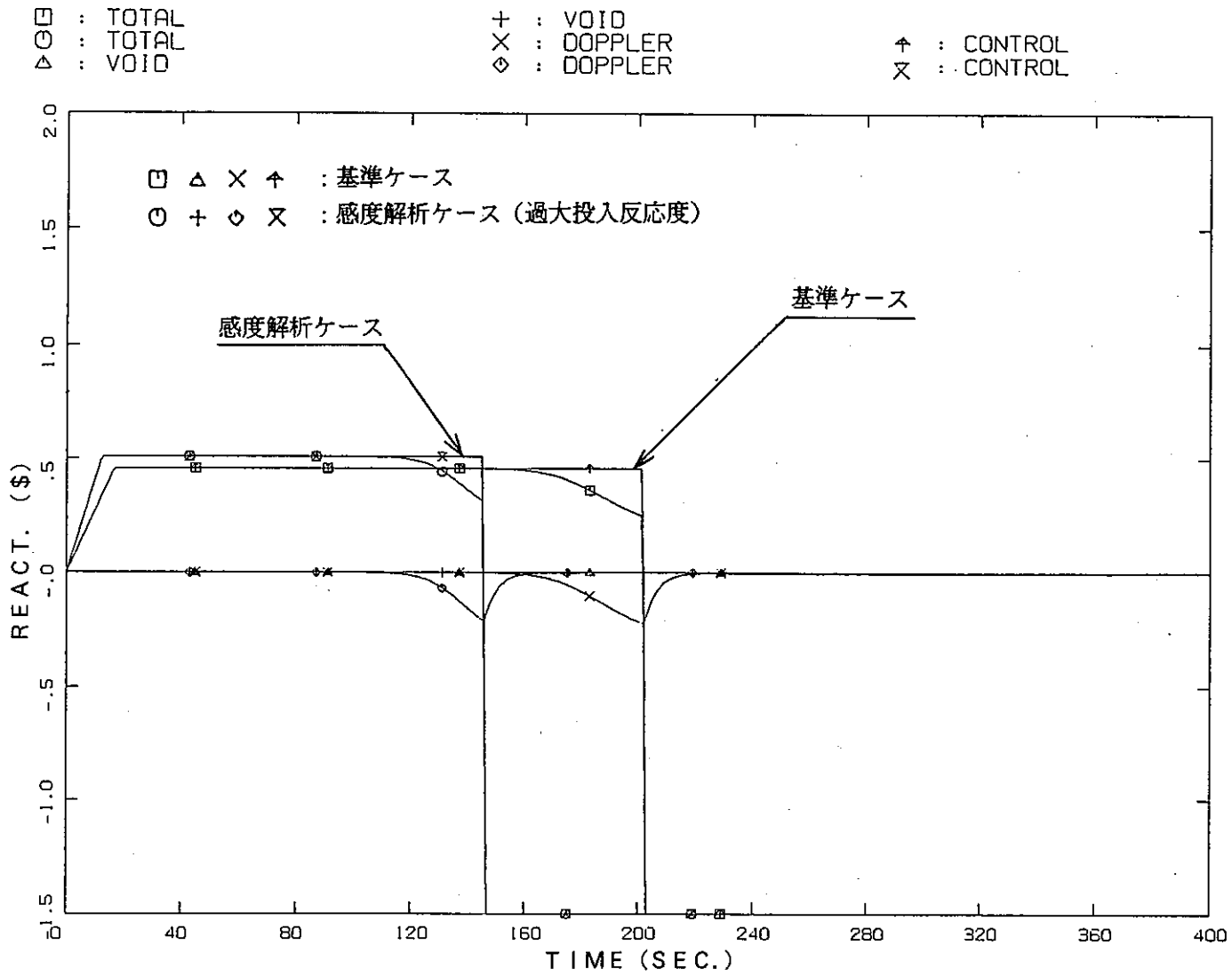


図5.59　過大投入反応度を用いたＢＤＢＥ（パス⑥）３次元感度解析における反応度変化の比較

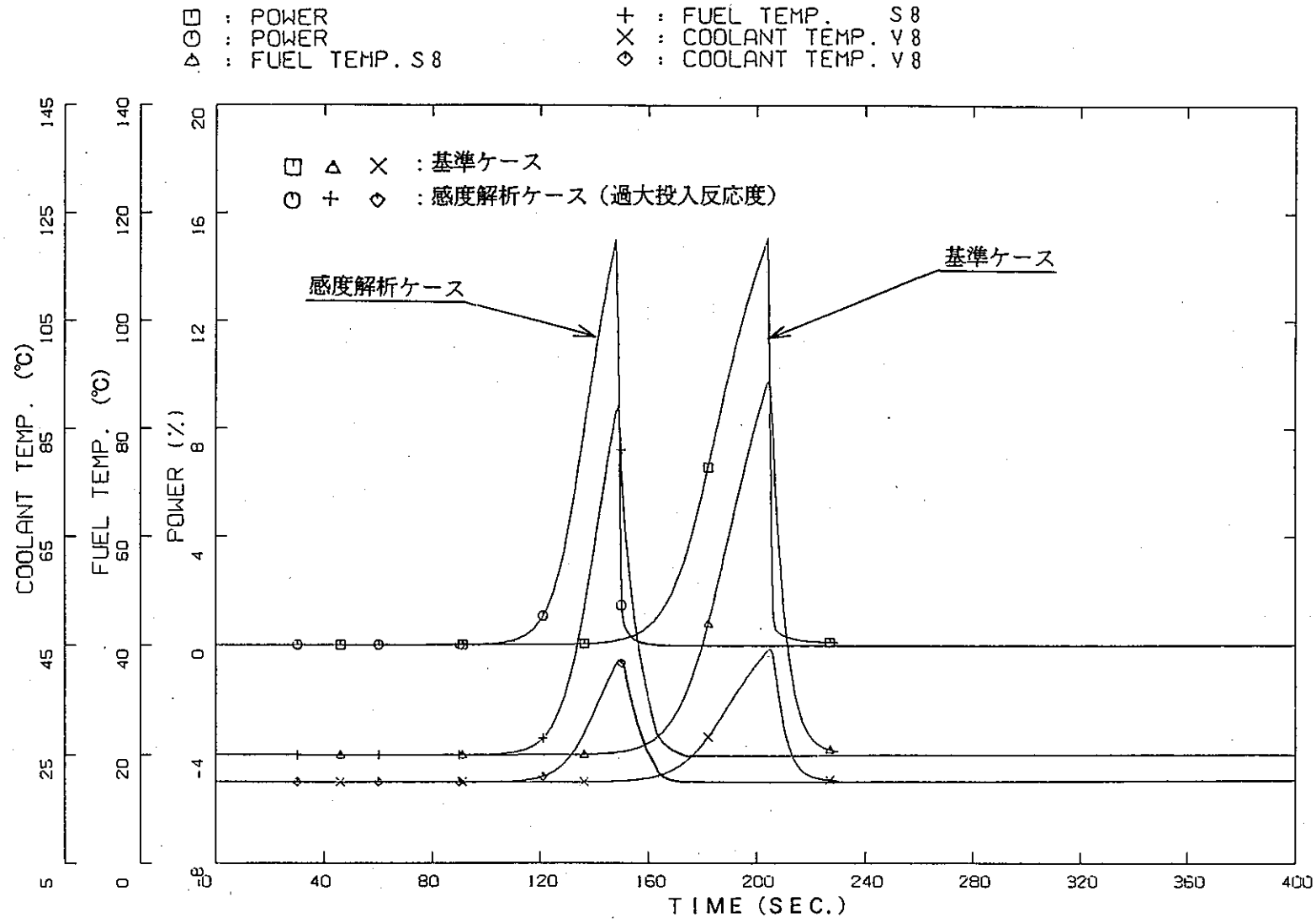


図5.60　過大投入反応度を用いたＢＤＢＥ（パス⑥）１点近似感度解析における炉出力及び温度変化の比較

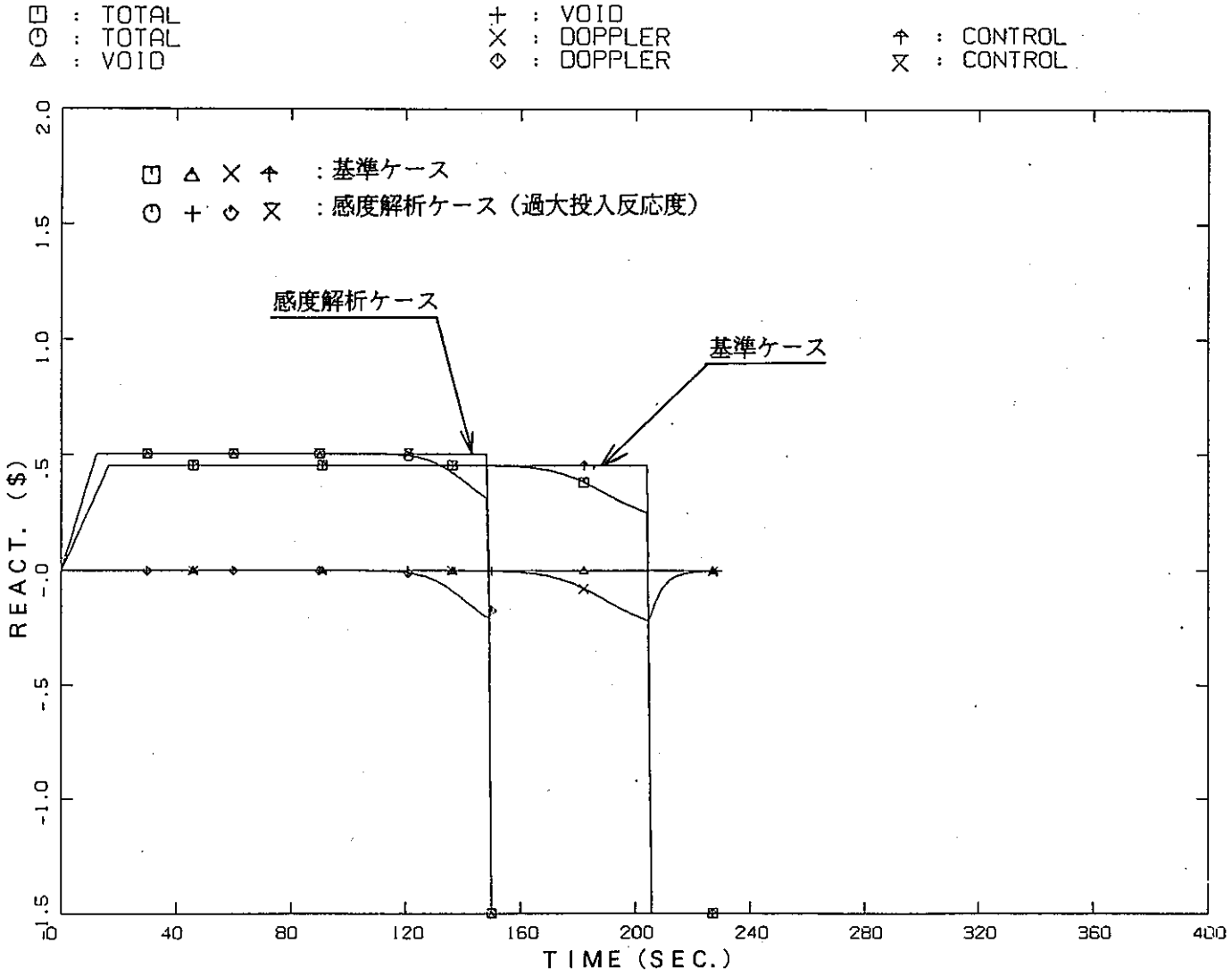


図5.61　過大投入反応度を用いたＢＤＢＥ（パス⑥）１点近似感度解析における反応度変化の比較

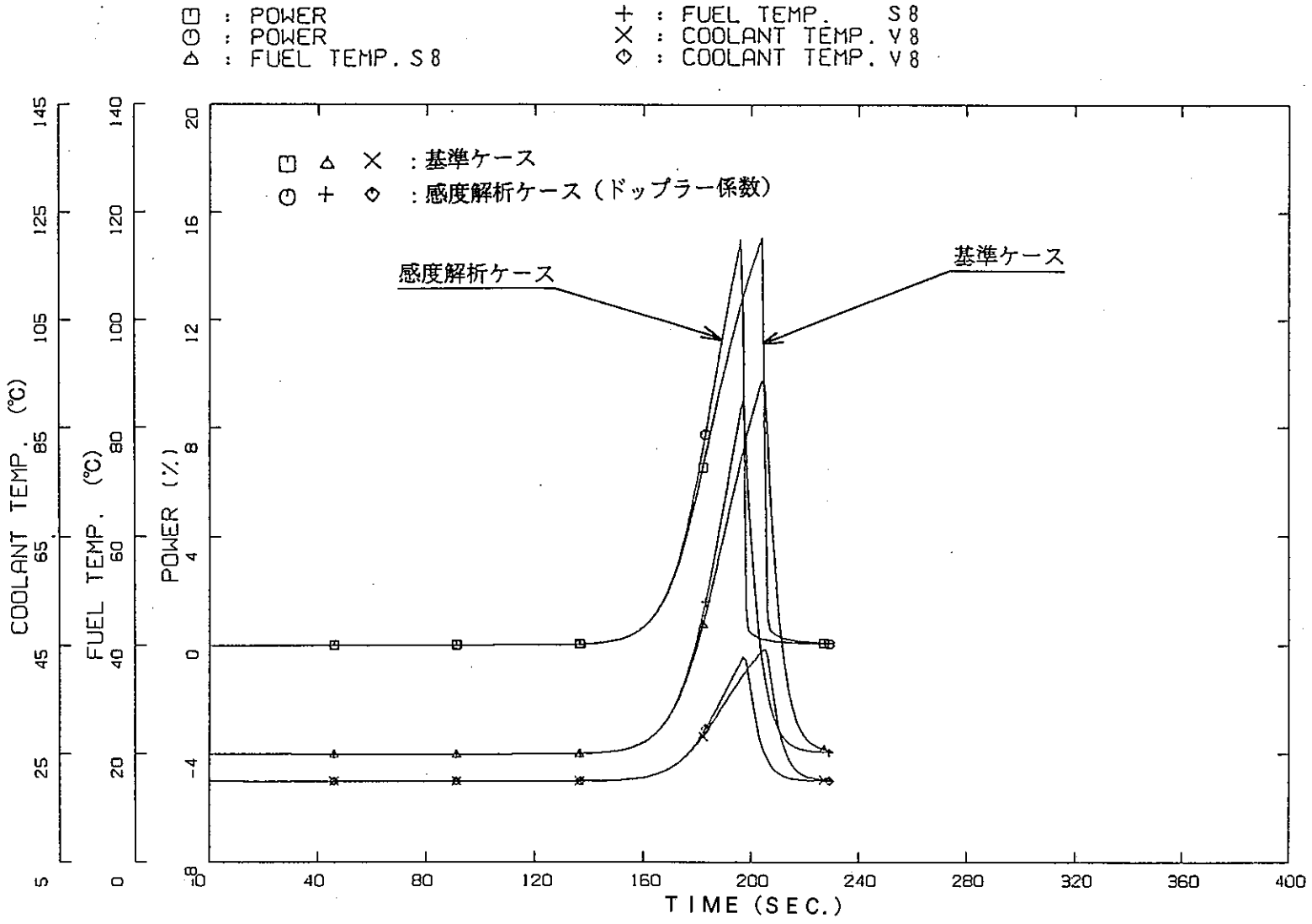


図5.62　正側ドップラー係数を用いたＢＤＢＥ（パス⑥）３次元感度解析における炉出力及び温度変化の比較

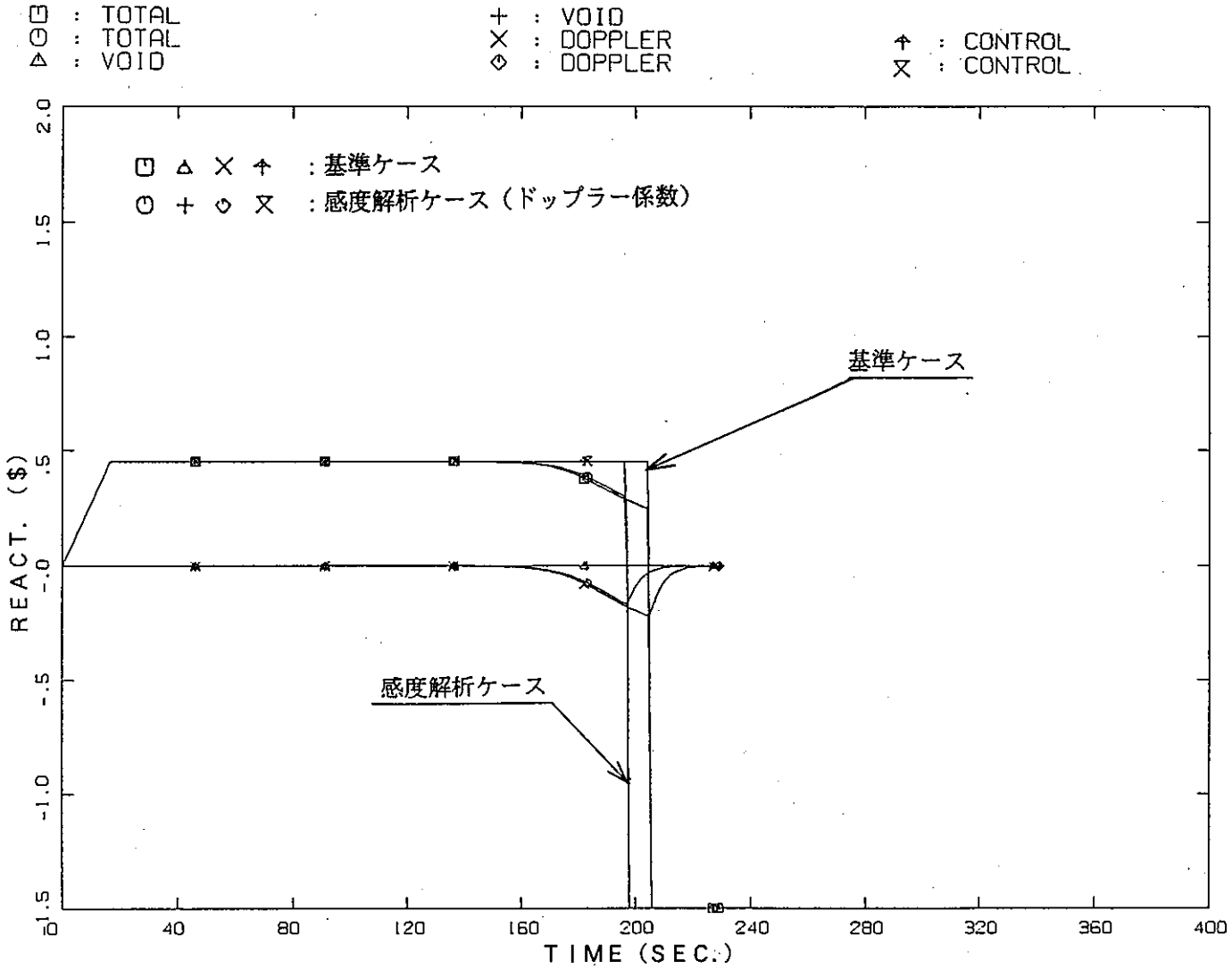


図5.63　正側ドップラー係数を用いたＢＤＢＥ（パス⑥）３次元感度解析における反応度変化の比較

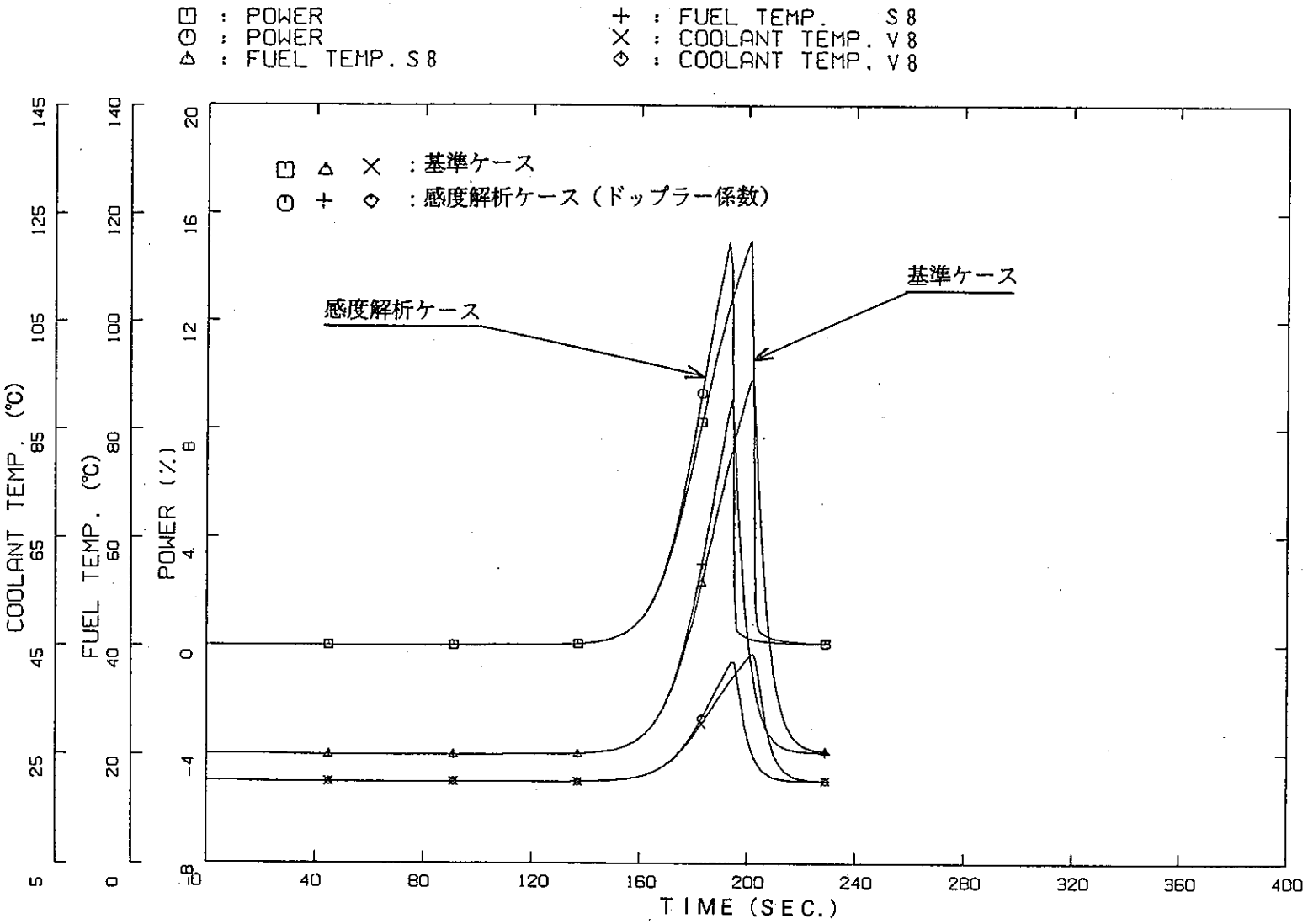


図5.64　正側ドップラー係数を用いたＢＤＢＥ（パス⑥）１点近似感度解析における炉出力及び温度変化の比較

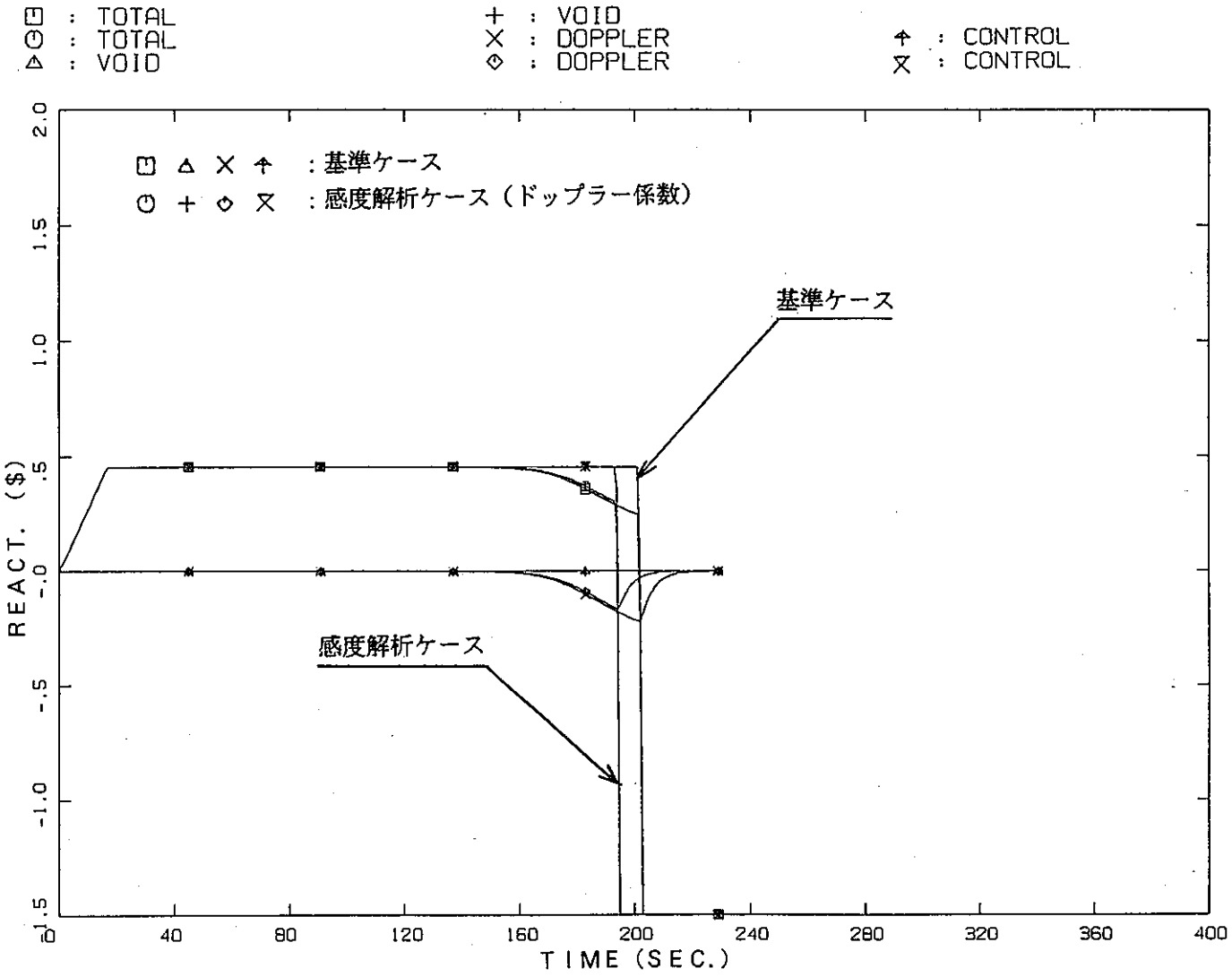


図5.65　正側ドップラー係数を用いたＢＤＢＥ（パス⑥）１点近似感度解析における反応度変化の比較

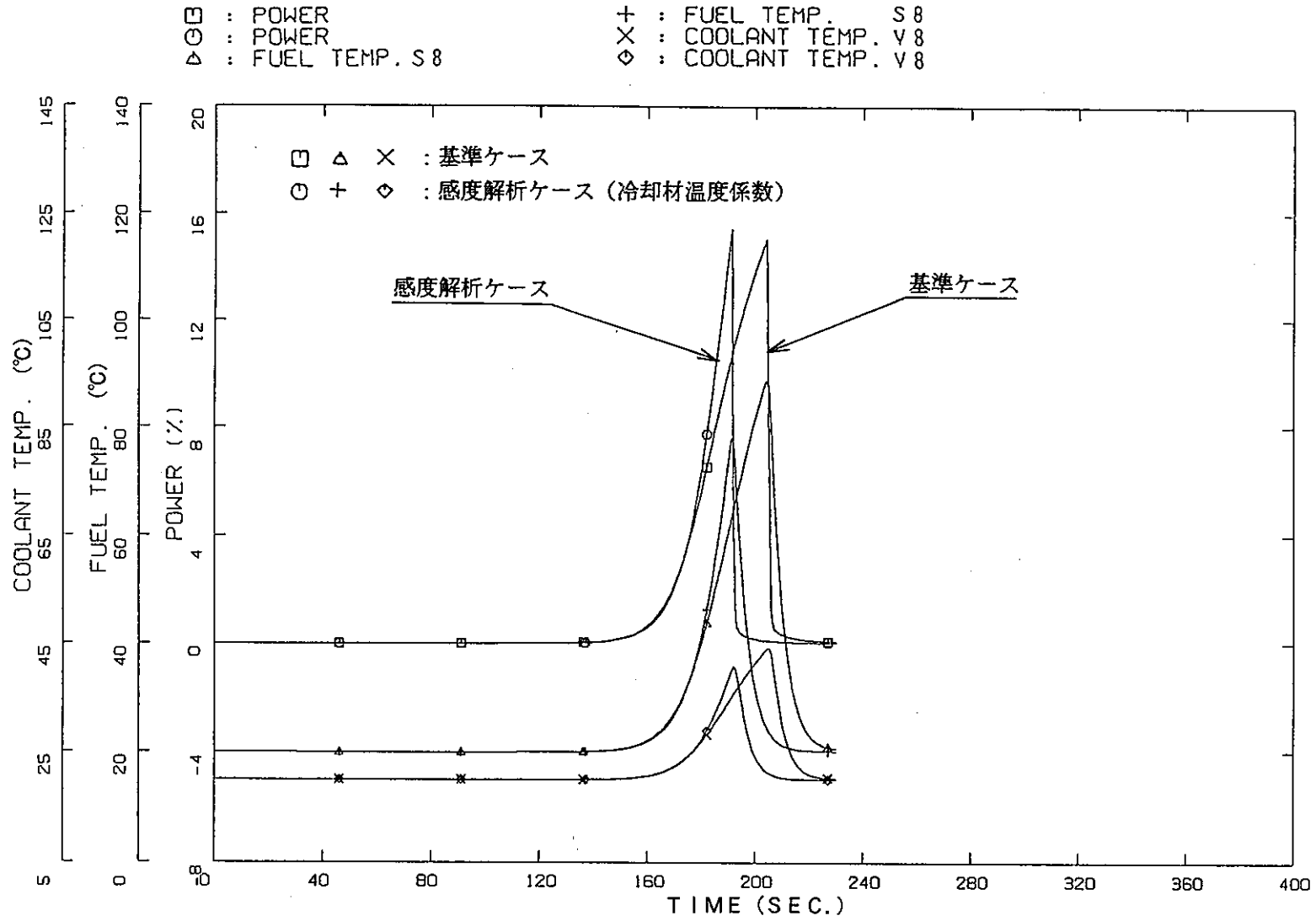


図5.66　正側冷却材温度係数を用いたＢＤＢＥ（パス⑥）３次元感度解析における炉出力及び温度変化の比較

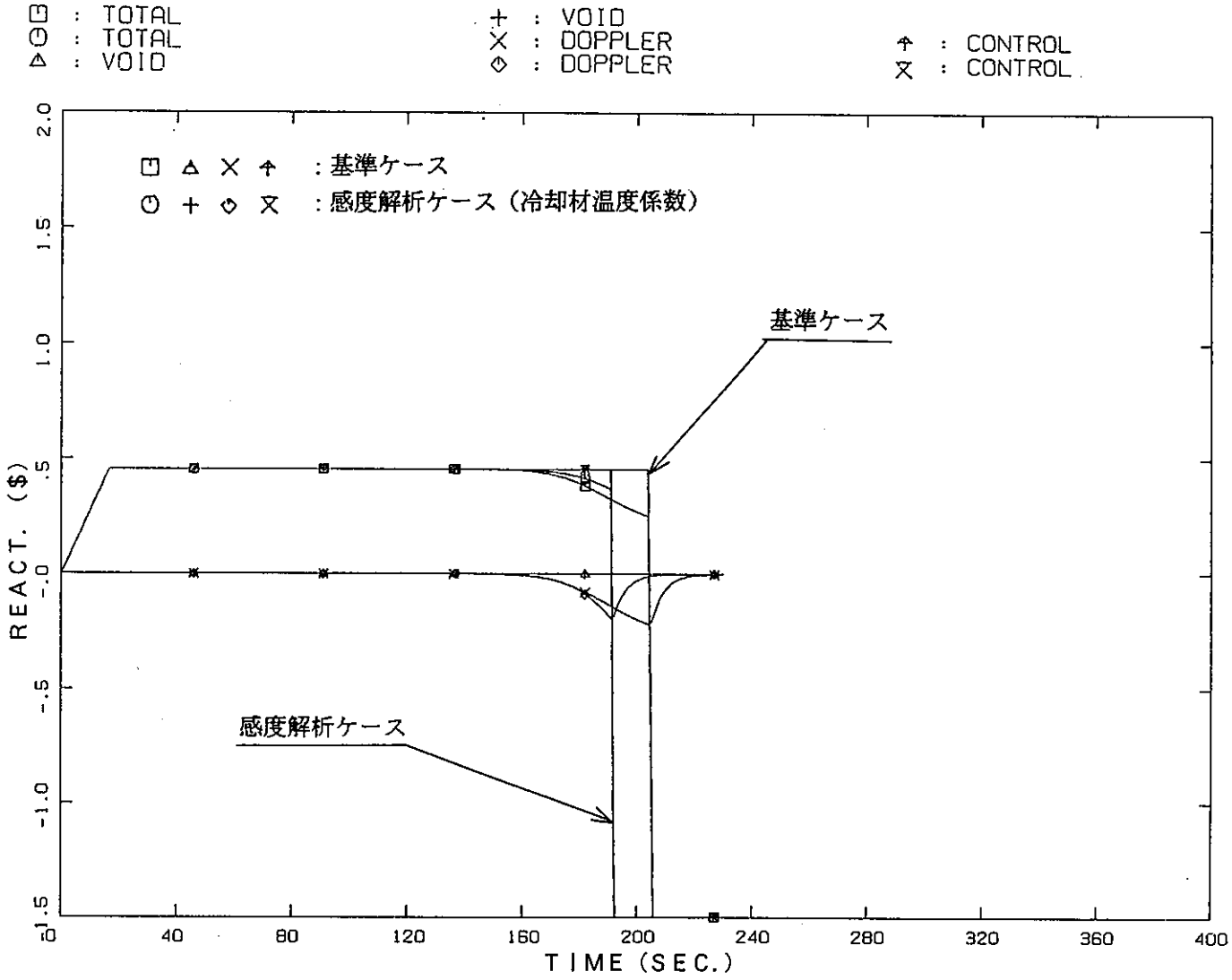


図5.67　正側冷却材温度係数を用いたＢＤＢＥ（パス⑥）３次元感度解析における反応度変化の比較

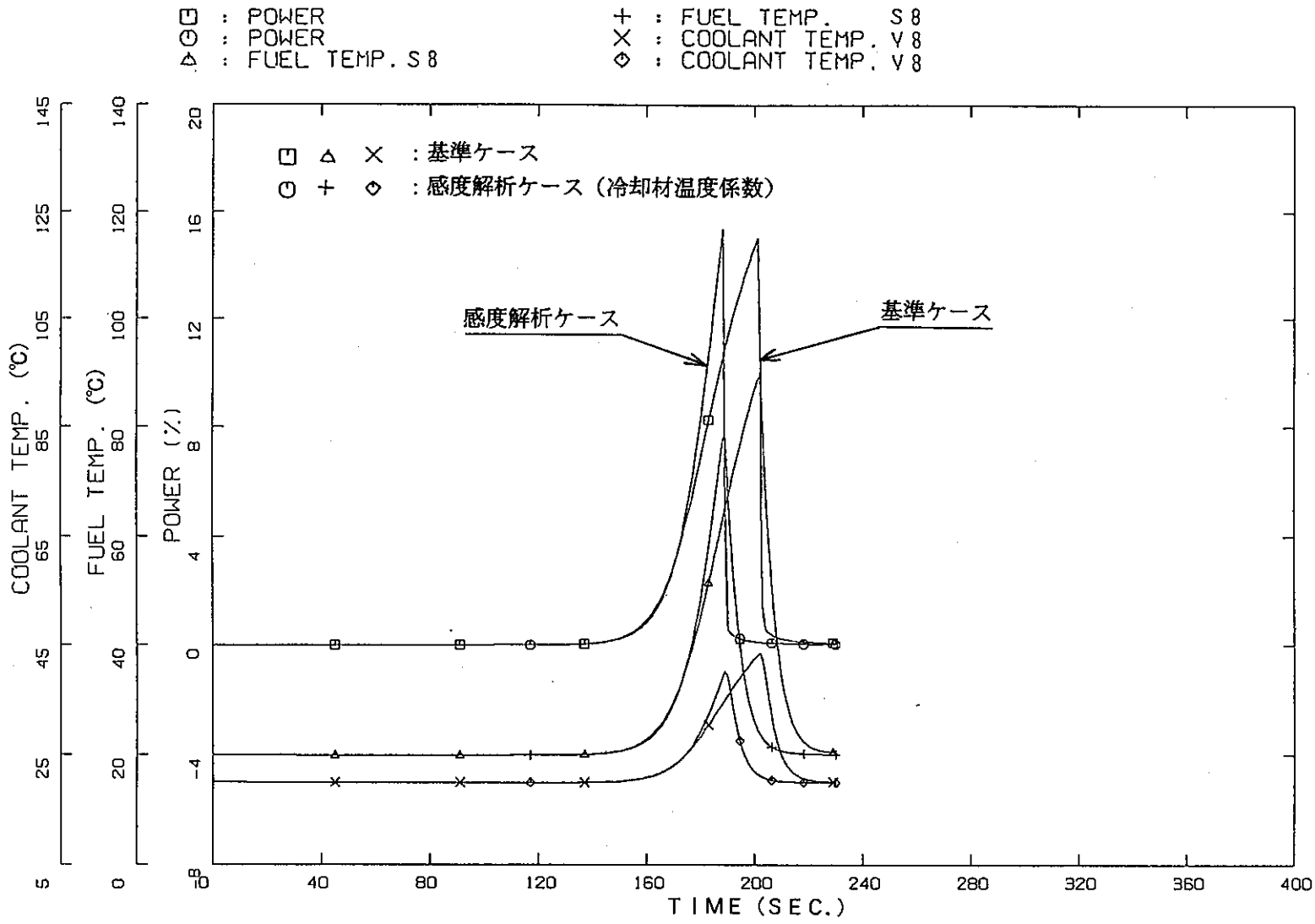


図5.68　正側冷却材温度係数を用いたＢＤＢＥ（パス⑥）１点近似感度解析における炉出力及び温度変化の比較

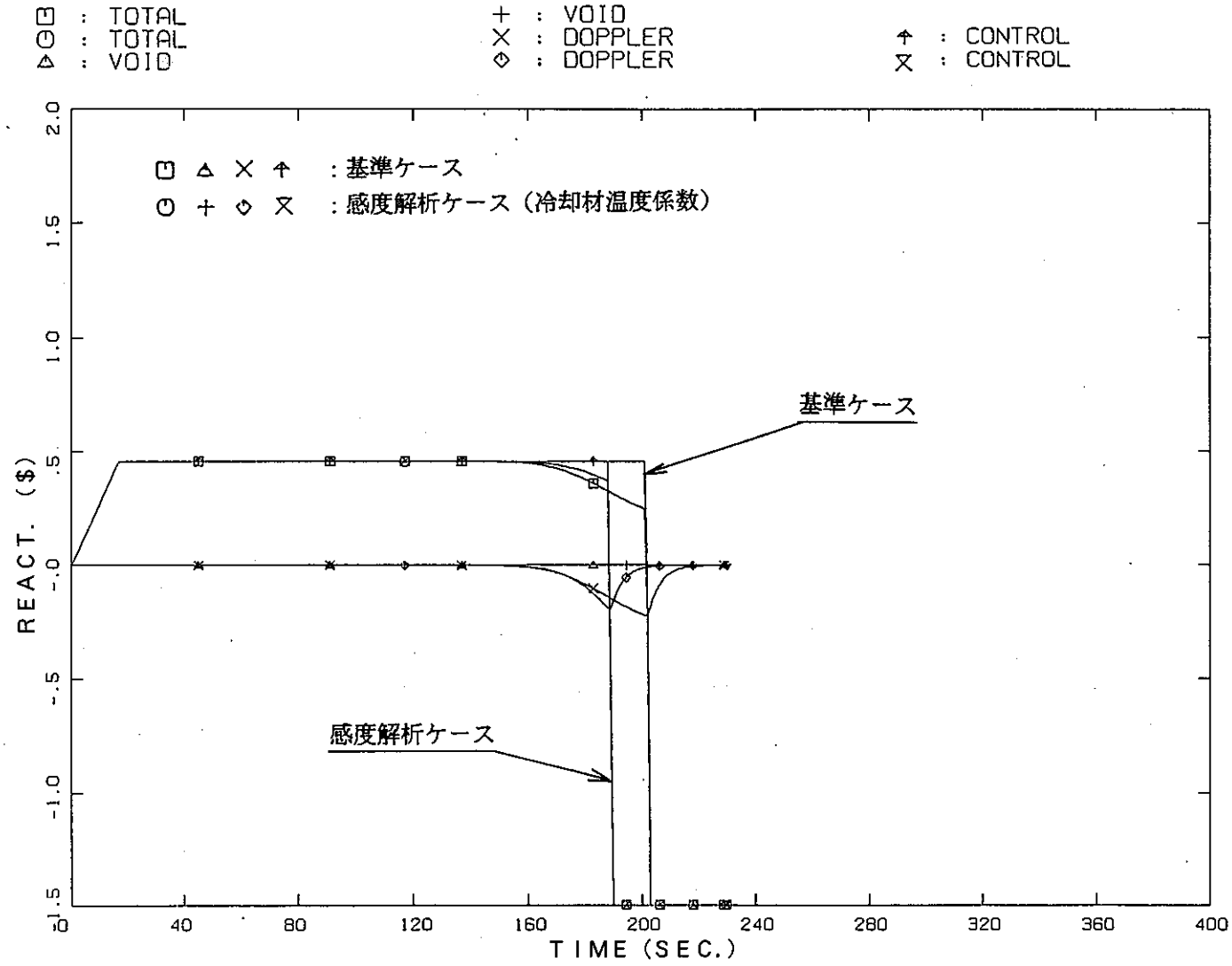


図5.69　正側冷却材温度係数を用いたＢＤＢＥ（パス⑥）１点近似感度解析における反応度変化の比較

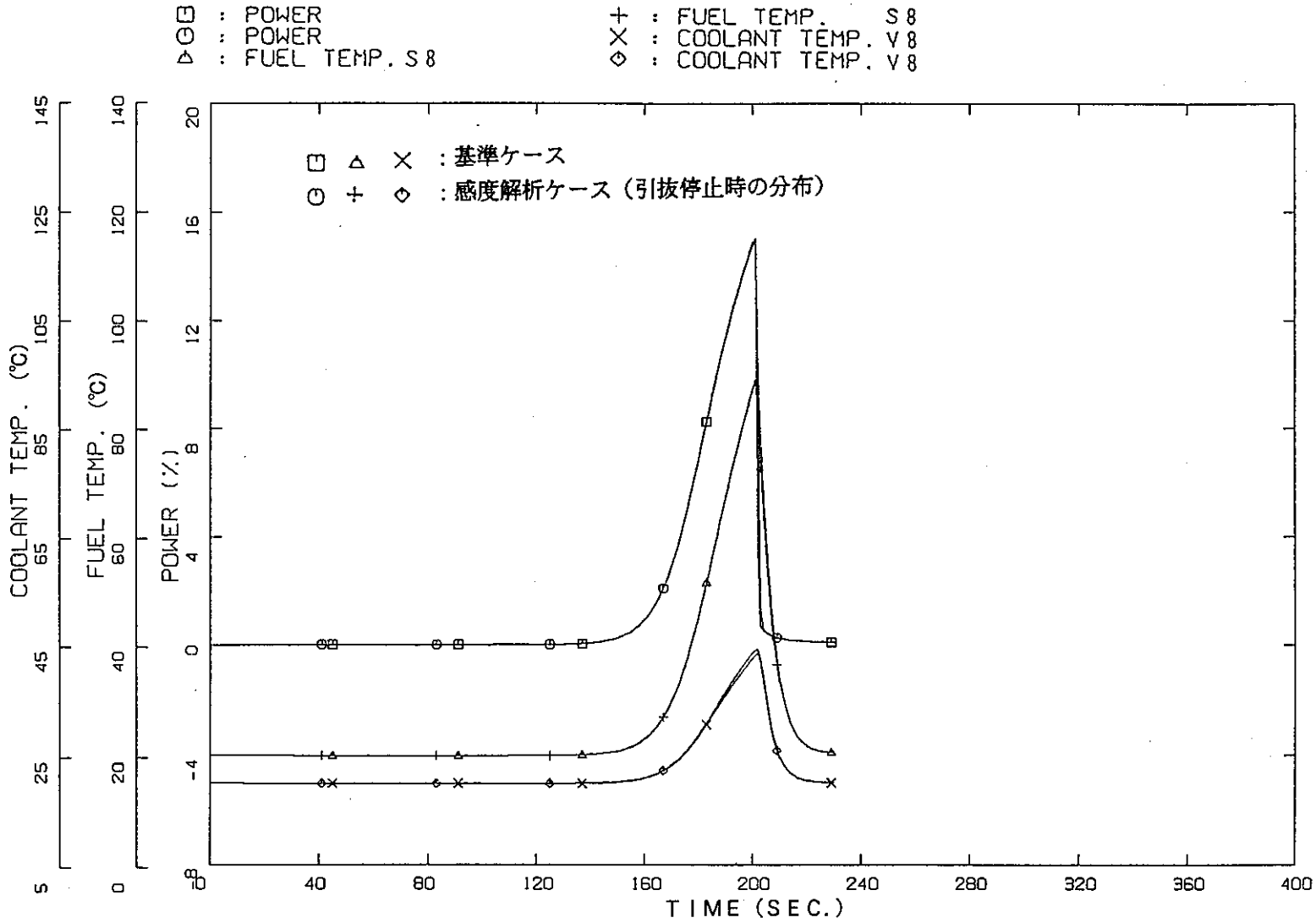


図5.70　設定出力分布に制御棒引抜停止時の分布を用いたＢＤＢＥ（パス⑥）１点近似感度解析における炉出力及び温度変化の比較

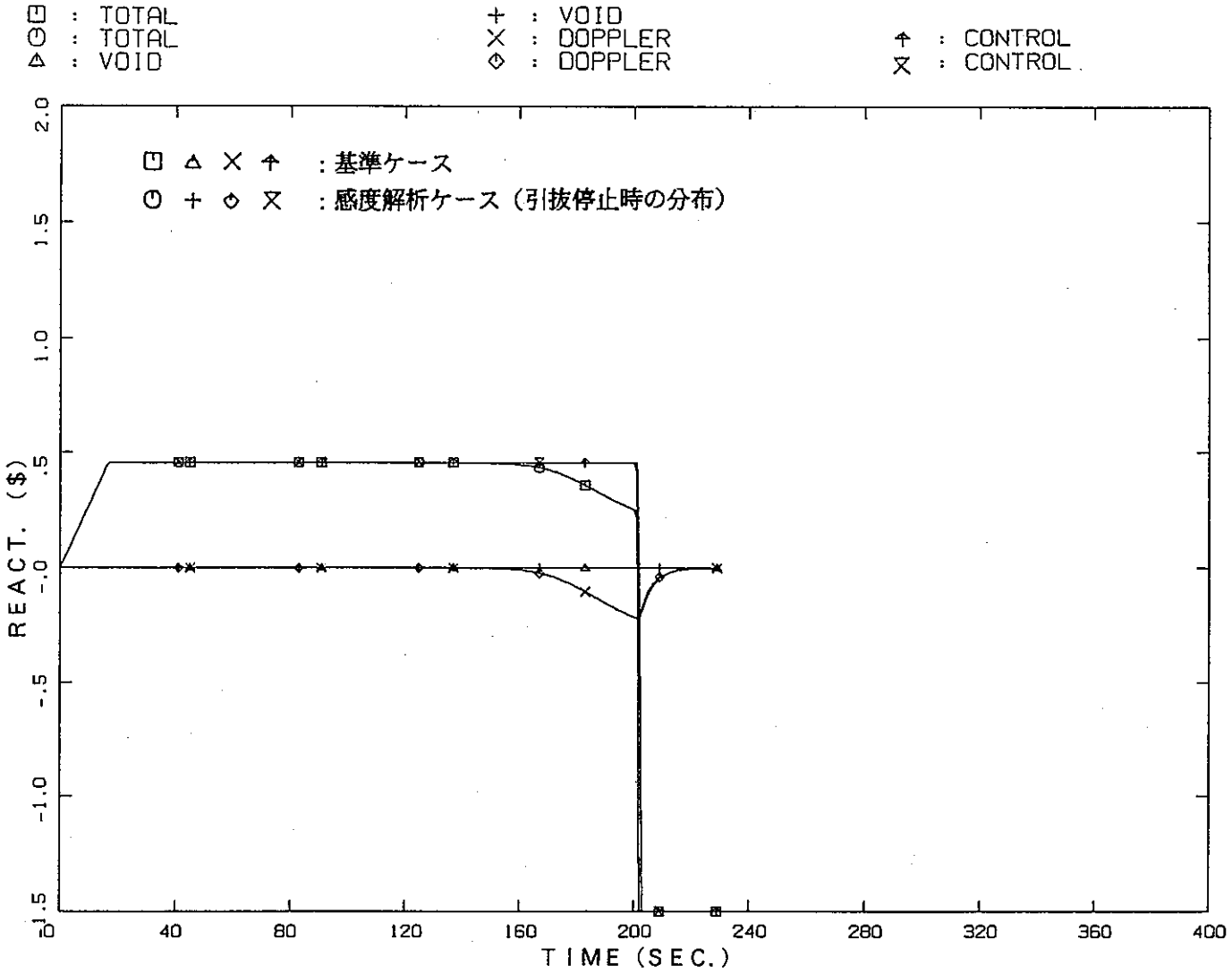


図5.71　設定出力分布に制御棒引抜停止時の分布を用いたＢＤＢＥ（パス⑥）１点近似感度解析における反応度変化の比較

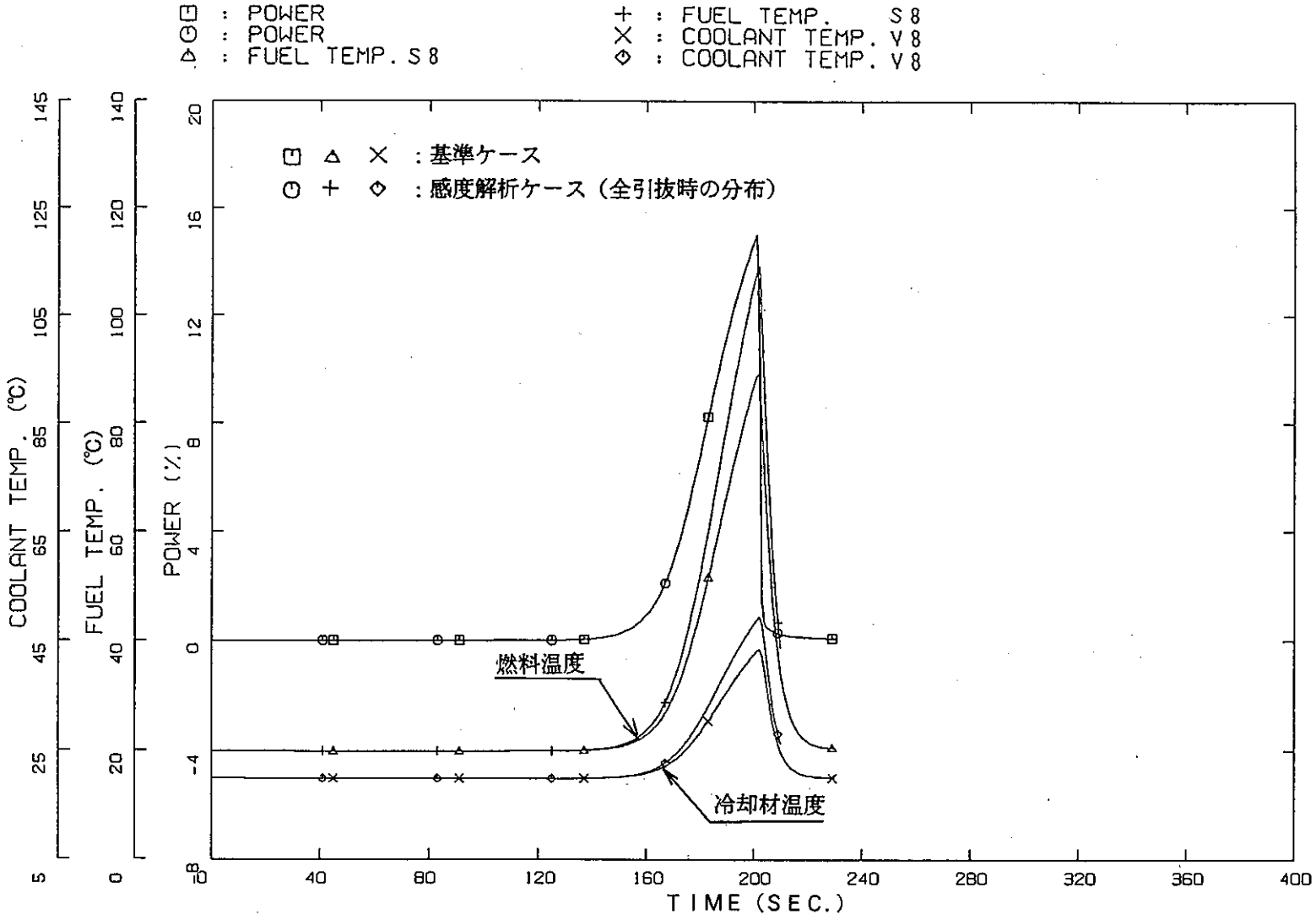


図5.72　設定出力分布に制御棒全引抜時の分布を用いたＢＤＢＥ（パス⑥）１点近似感度解析における炉出力及び温度変化の比較

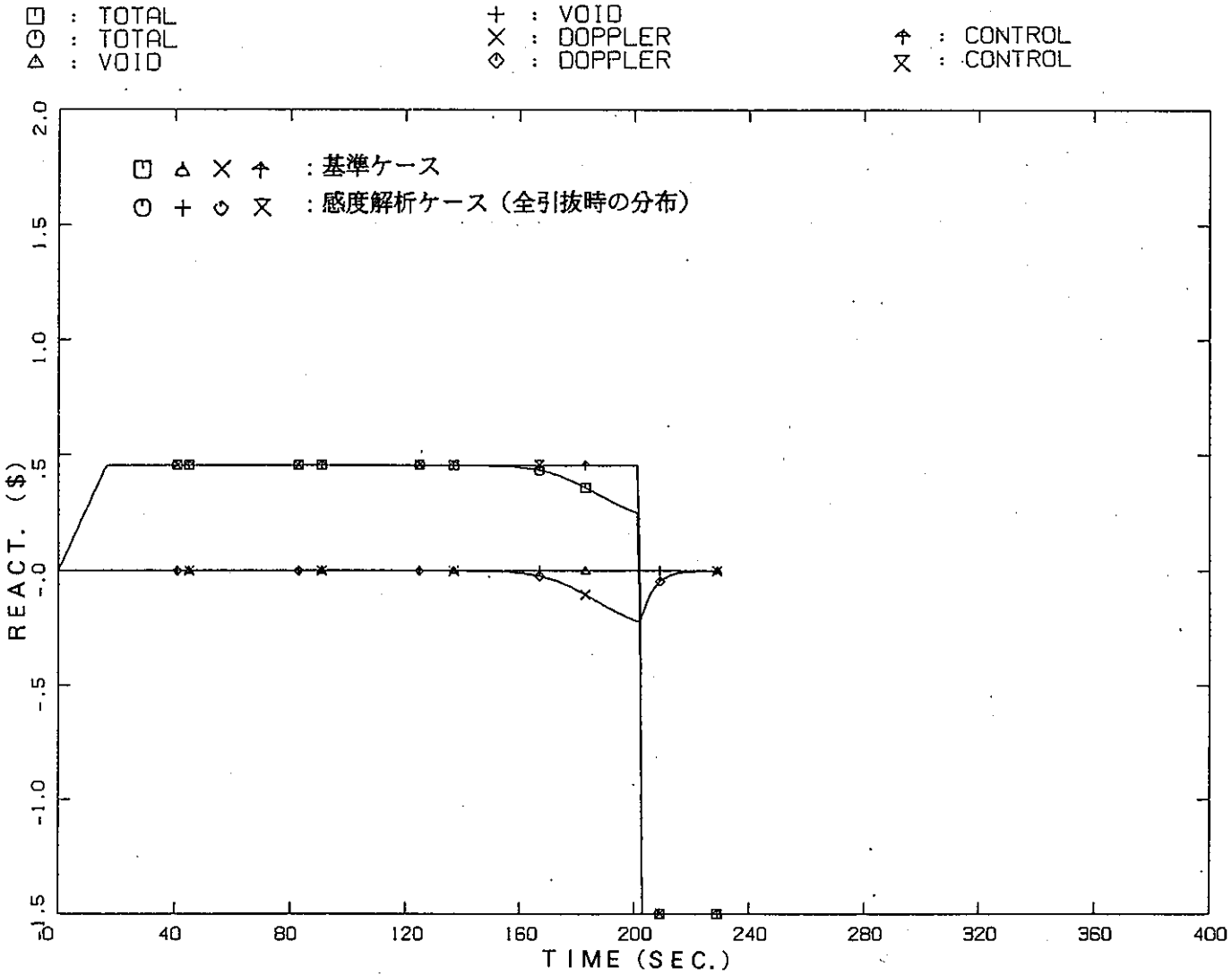


図5.73　設定出力分布に制御棒全引抜時の分布を用いたＢＤＢＥ（パス⑥）１点近似感度解析における反応度変化の比較

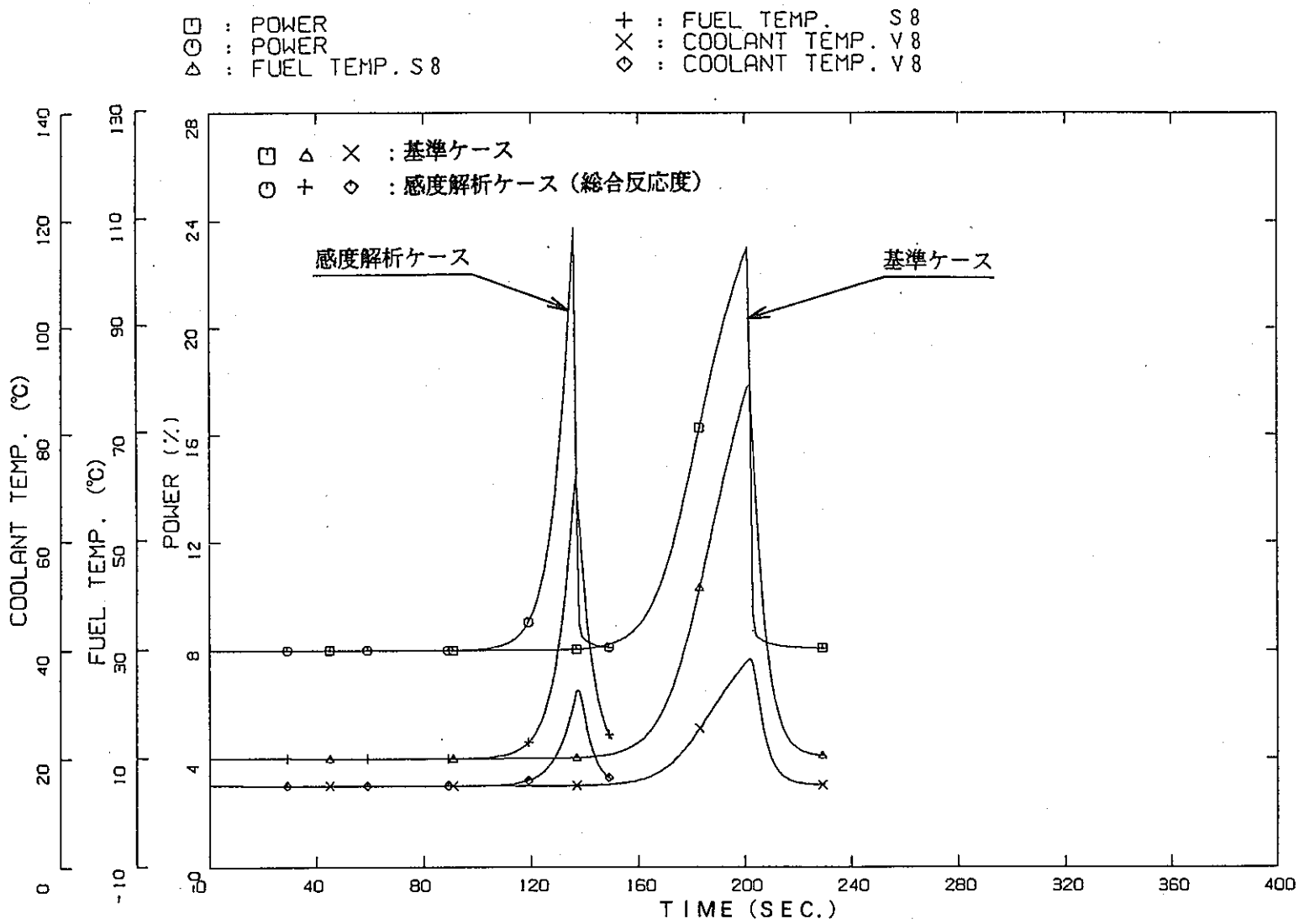


図5.74　総合反応度を使用したＢＤＢＥ（パス⑥）１点近似感度解析における炉出力及び温度変化の比較

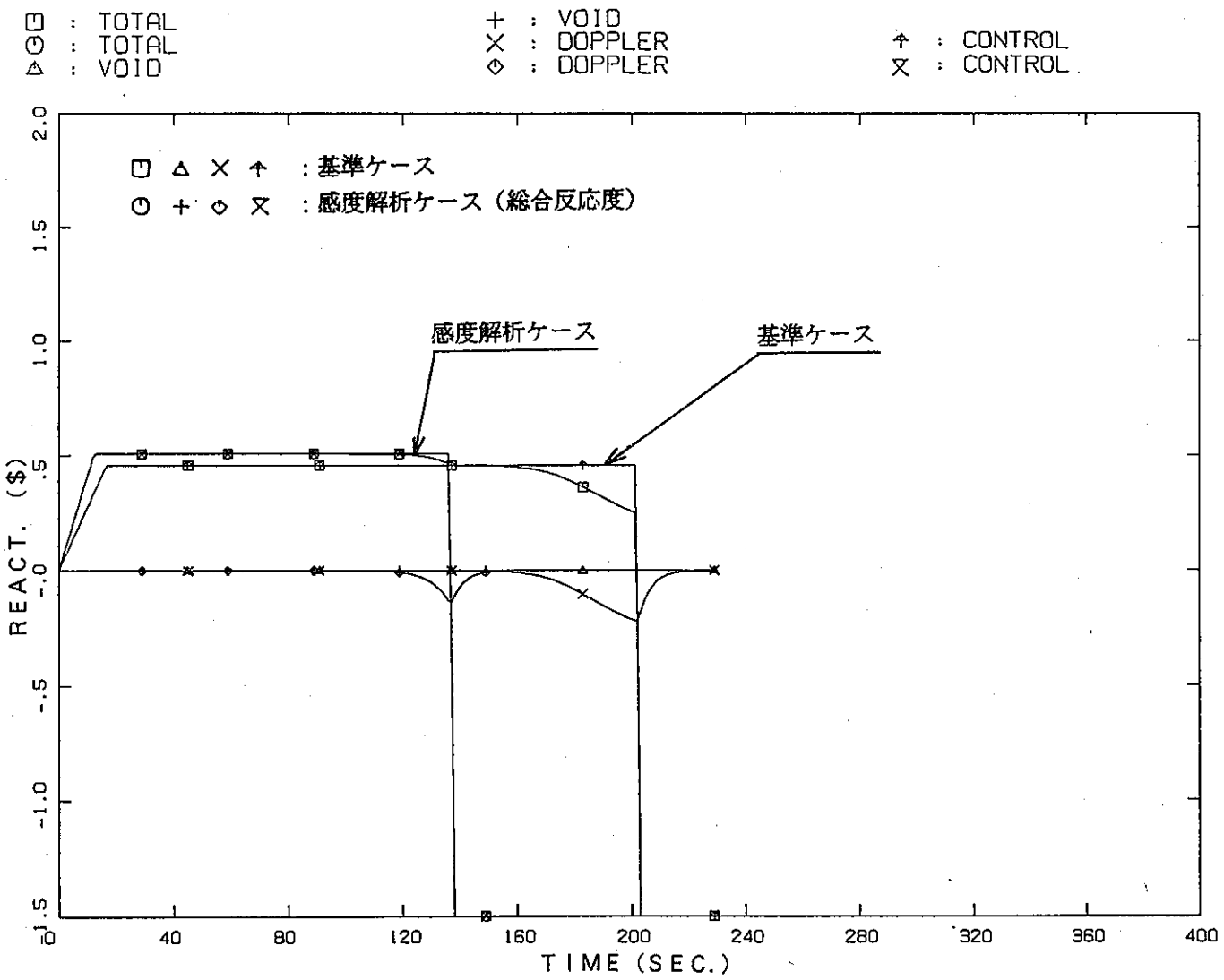


図5.75　総合反応度を使用したＢＤＢＥ（パス⑥）１点近似感度解析における反応度変化の比較

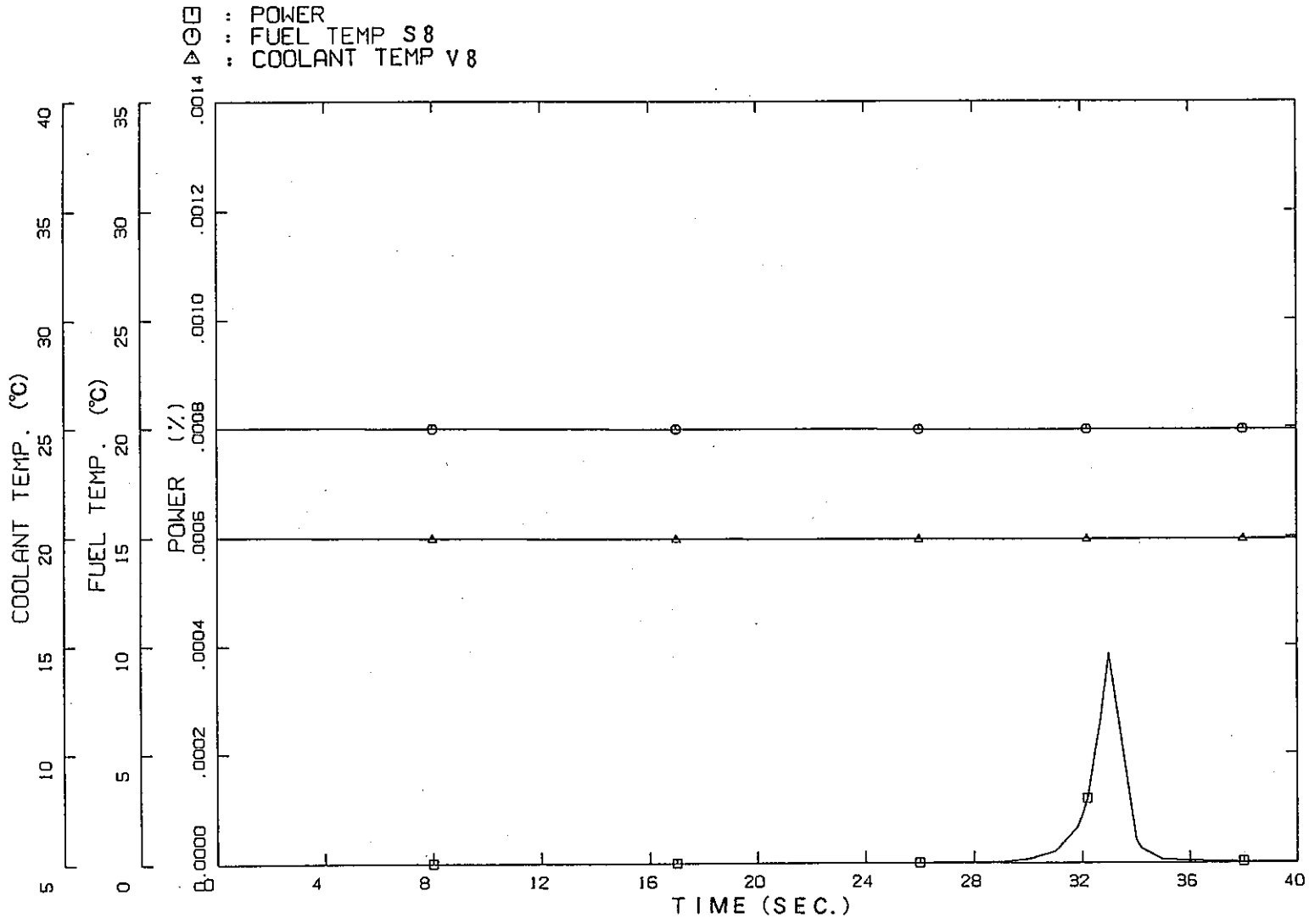


図5.76　ＢＤＢＥ(パス⑧)基準ケースの３次元解析における炉出力及び温度の変化

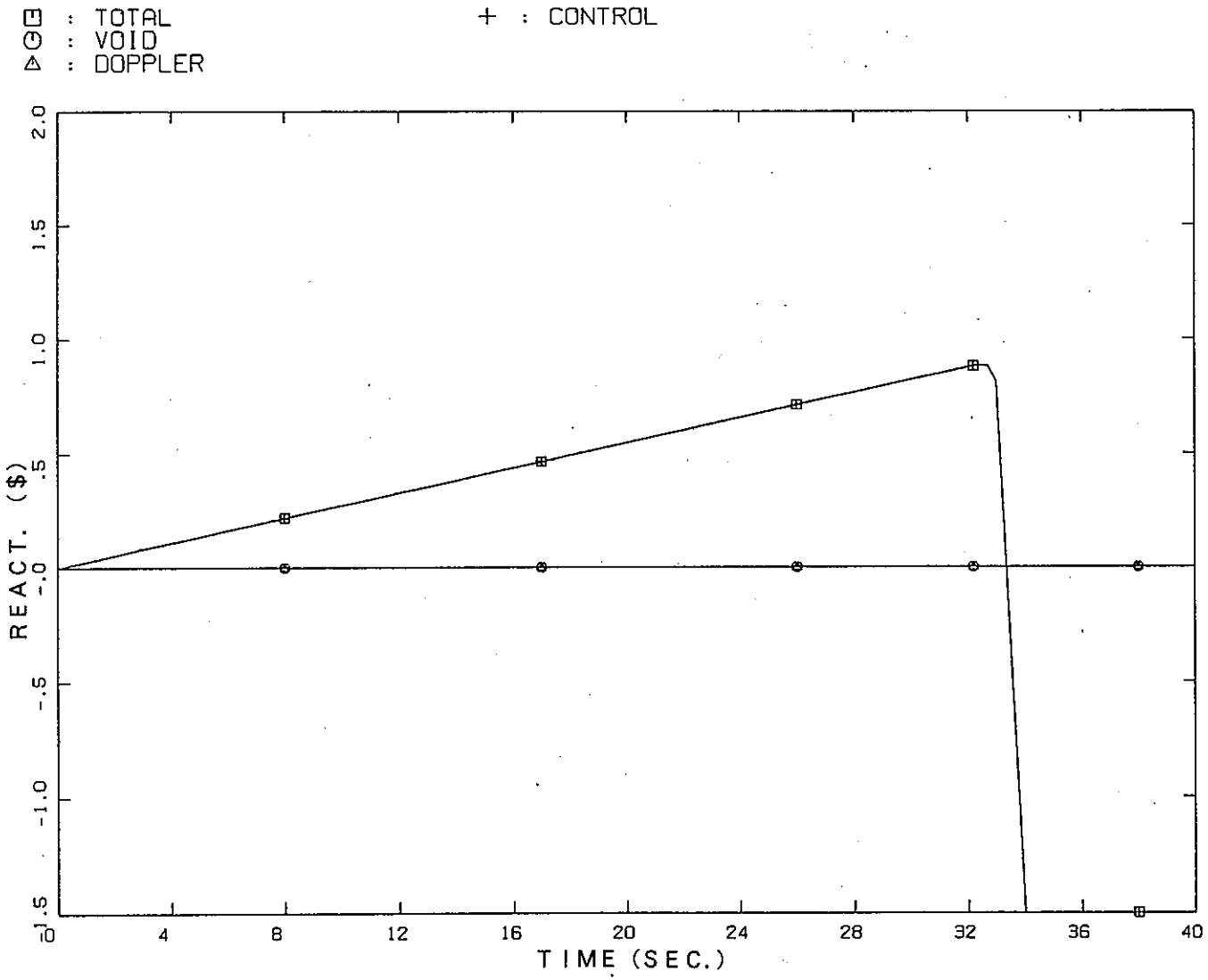


図5.77　ＢＤＢＥ(パス⑧)基準ケースの３次元解析における反応度の変化

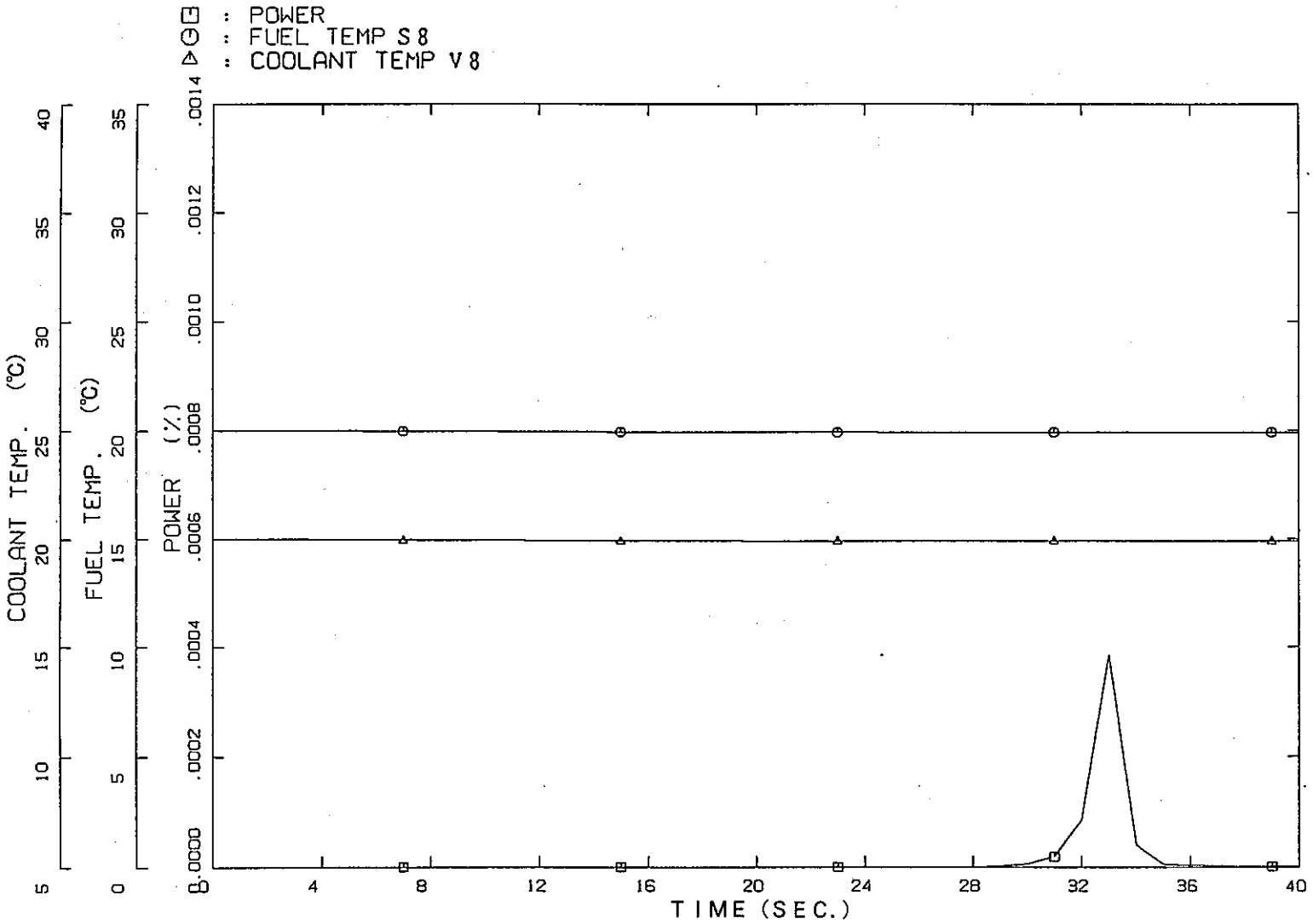


図5.78　ＢＤＢＥ(パス⑧)基準ケースの１点近似解析における炉出力及び温度の変化

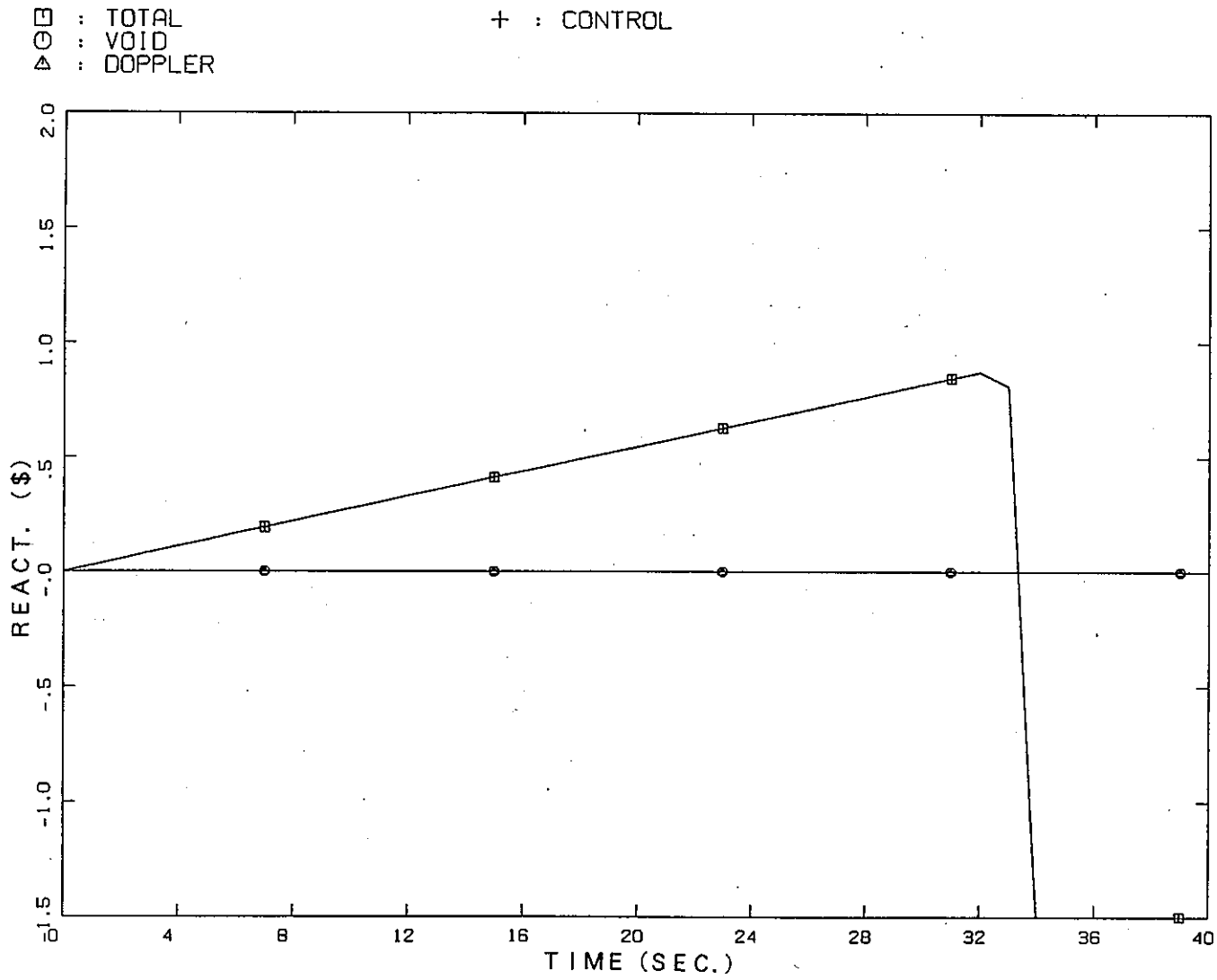
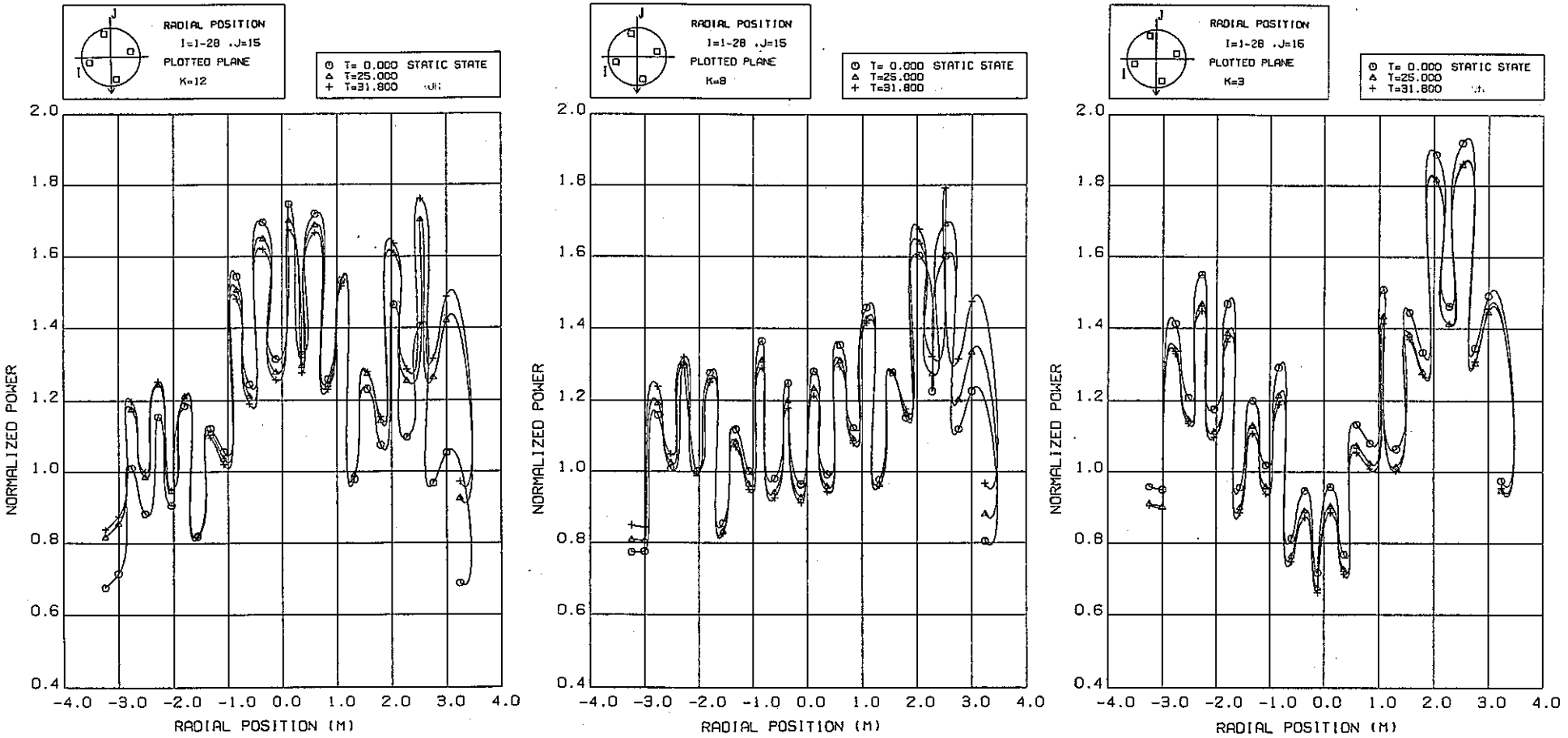
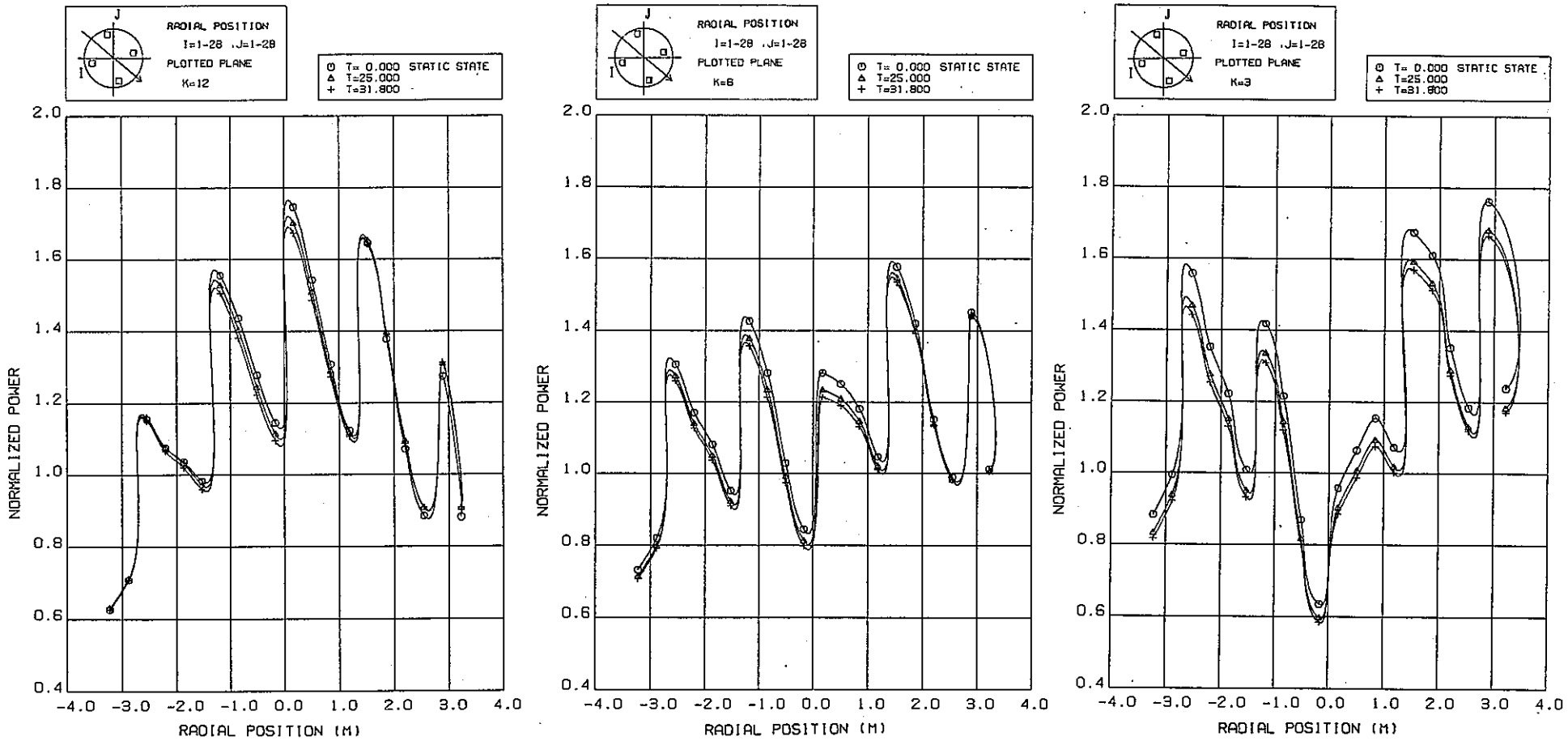


図5.79　ＢＤＢＥ(パス⑧)基準ケースの１点近似解析における反応度の変化



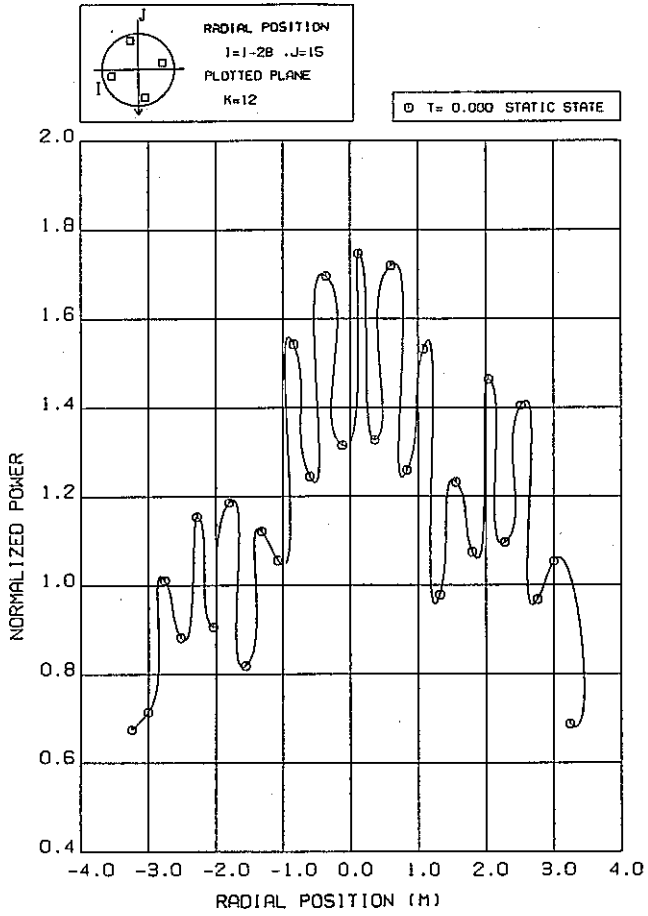
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.80　ＢＤＢＥ（パス⑧）基準ケースの３次元解析における径方向出力分布の変化（０°方向）

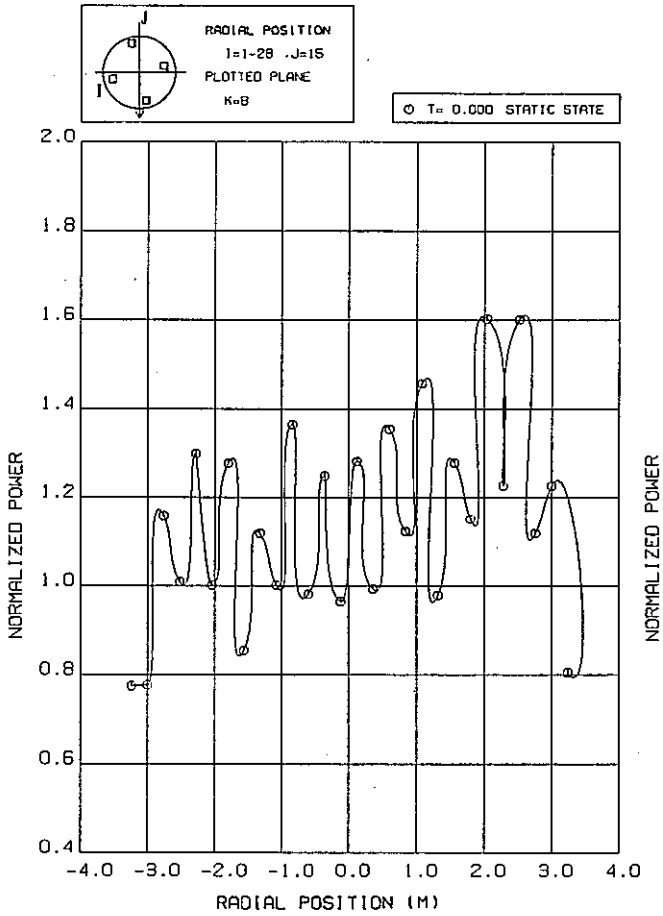


(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

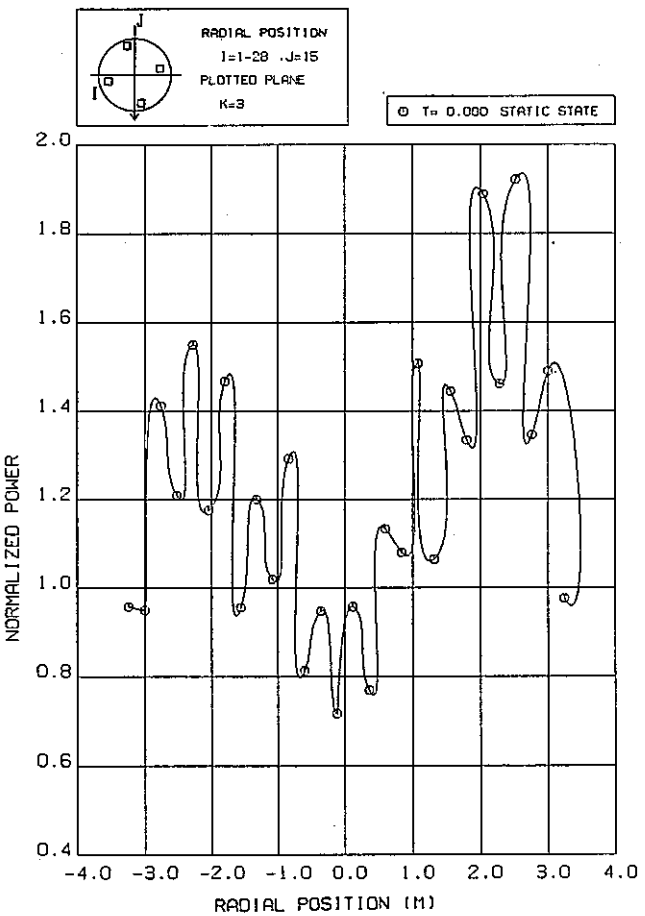
図5.81　ＢＤＢＥ(パス⑧)基準ケースの３次元解析における径方向出力分布の変化（45° 方向）



(1) 炉心下部（制御棒引抜高さの中間位置）

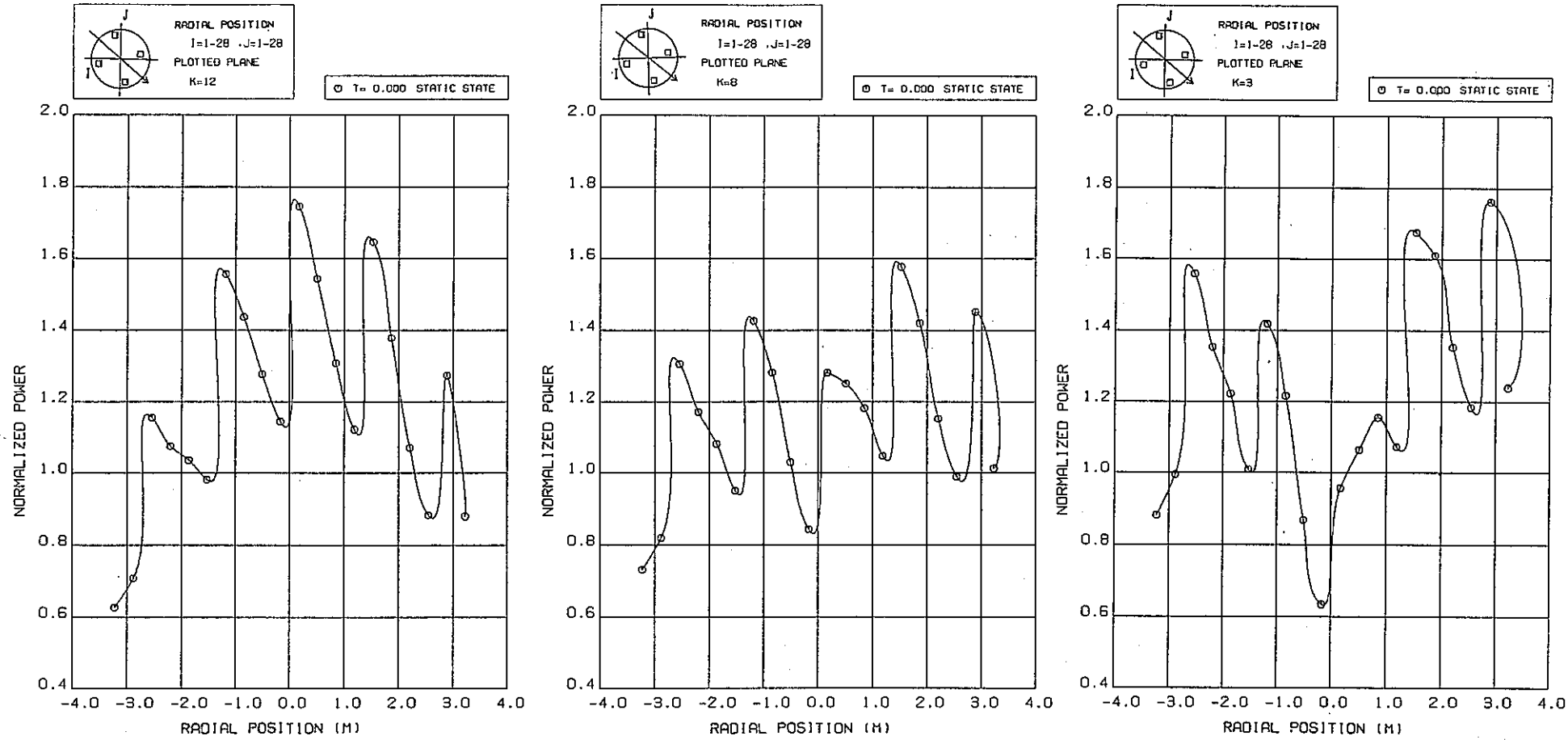


(2) 炉心中央部



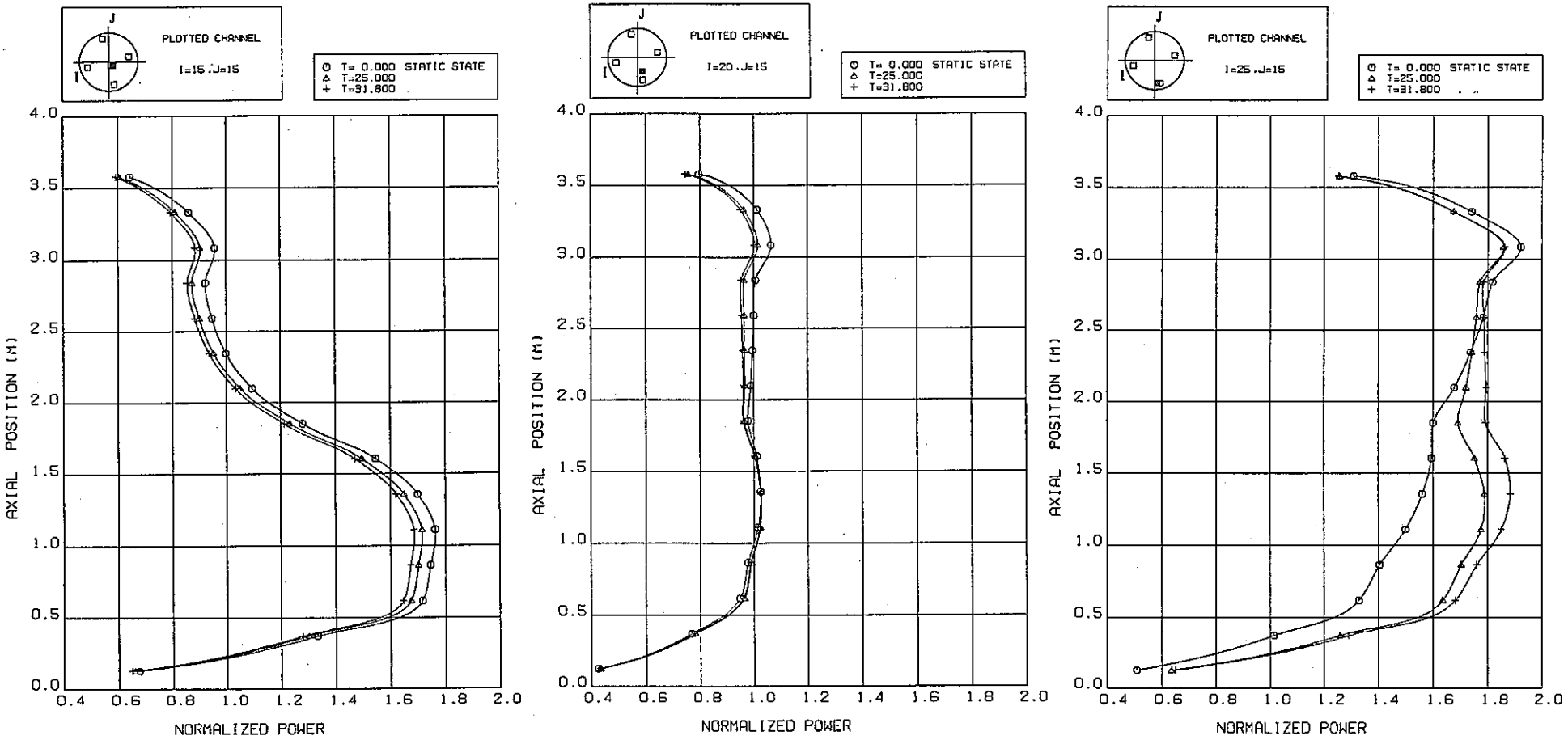
(3) 炉心上部

図5.82　ＢＤＢＥ（パス⑧）基準ケースの１点近似解析における径方向出力分布（０°方向）



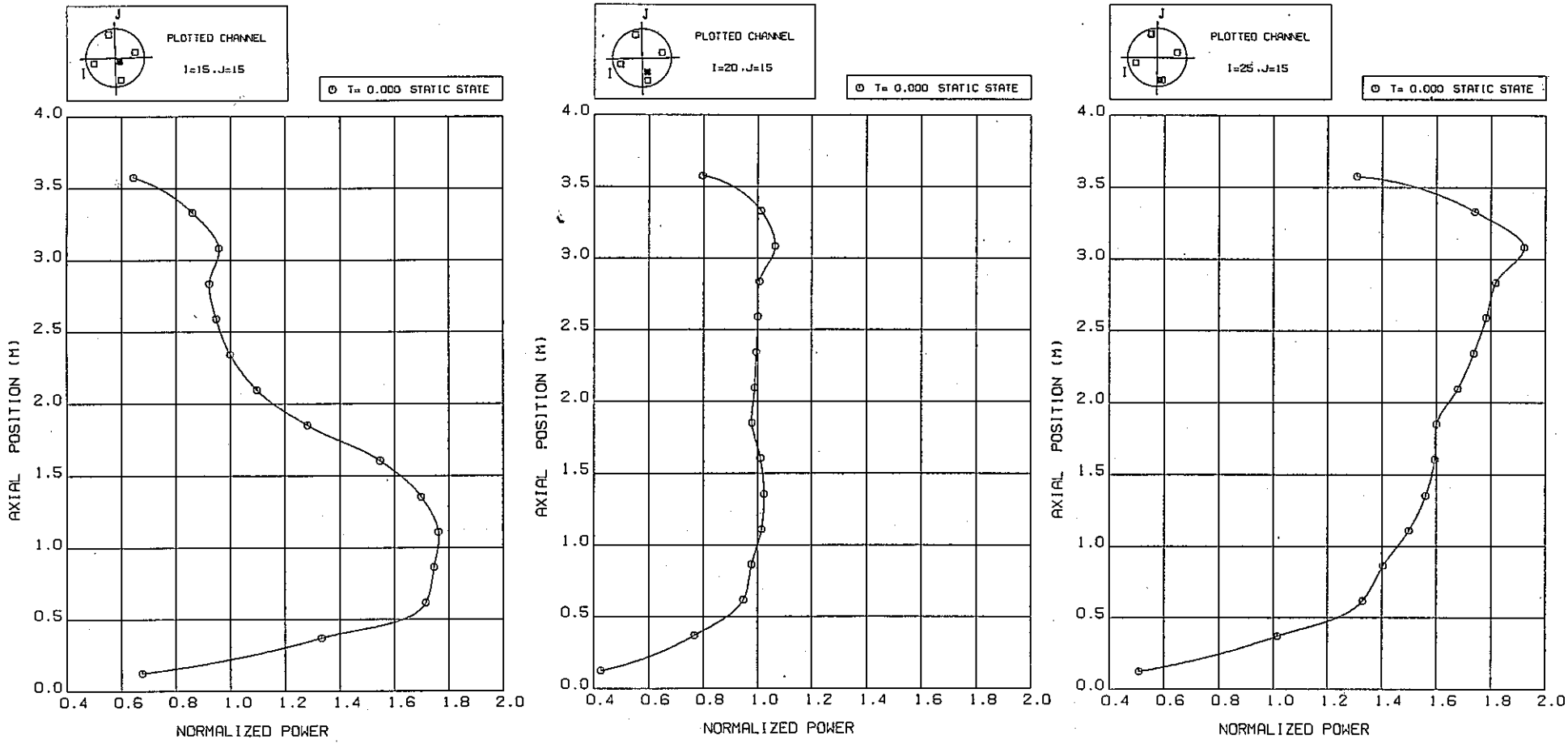
(1) 炉心下部（制御棒引抜高さの中間位置）　(2) 炉心中央部　(3) 炉心上部

図5.83　ＢＤＢＥ（パス⑧）基準ケースの１点近似解析における径方向出力分布（45°方向）



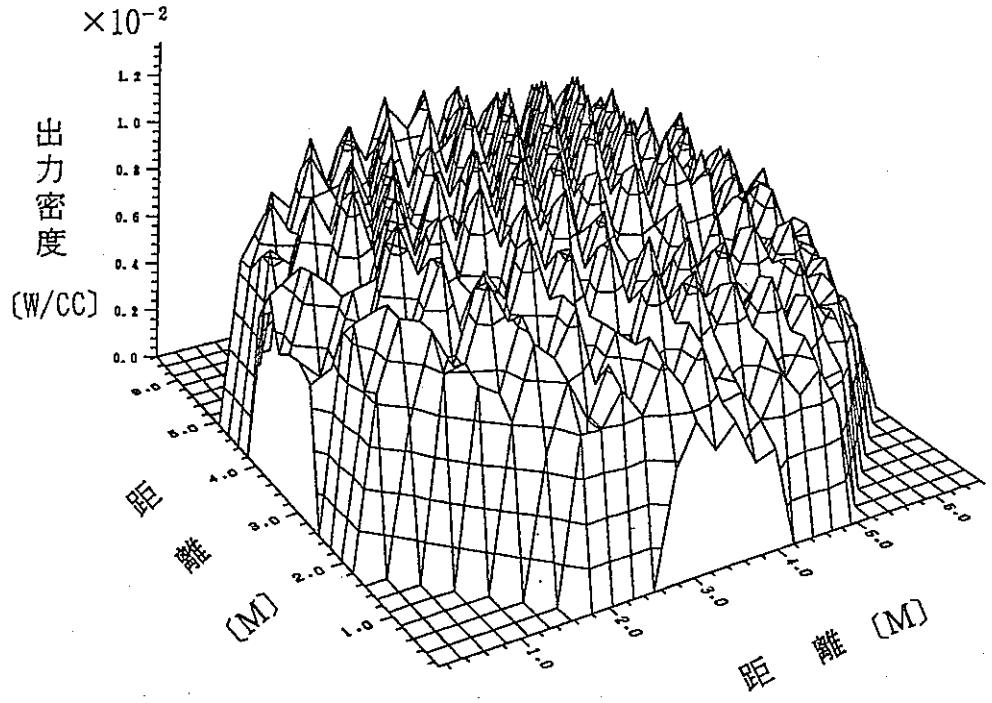
(1) 径方向中心部　　(2) 径方向中央部　　(3) 引抜制御棒近傍

図5.84　ＢＤＢＥ(パス⑧)基準ケースの３次元解析における
径方向炉心各チャンネルの軸方向出力分布の変化

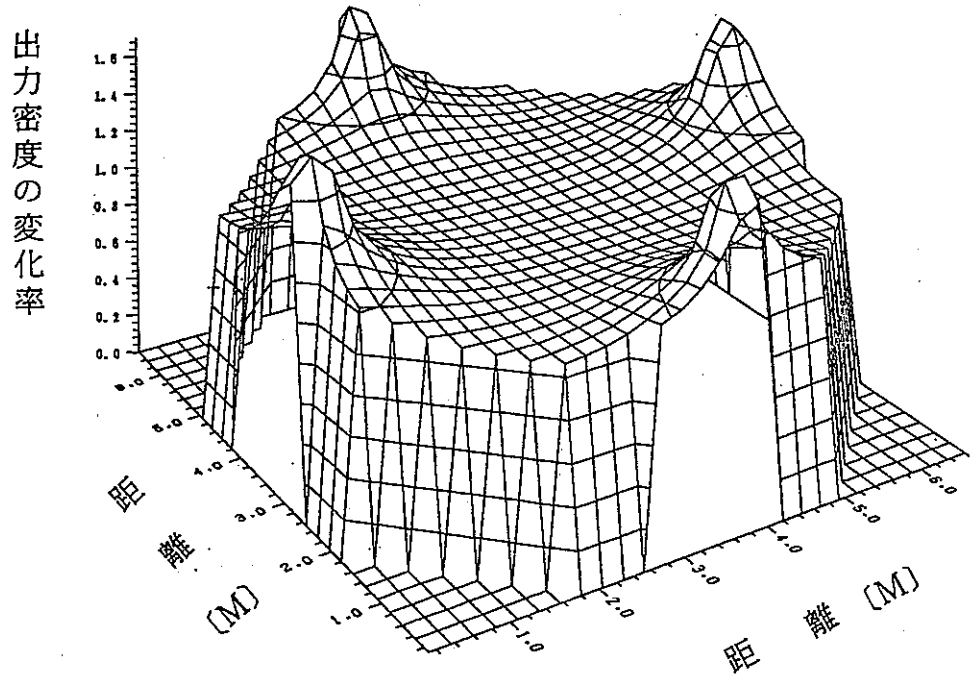


(1) 径方向中心部　　(2) 径方向中央部　　(3) 引抜制御棒近傍

図5.85　ＢＤＢＥ(パス⑧)基準ケースの１点近似解析における径方向炉心各チャンネルの軸方向出力分布



(1) 制御棒引抜開始時



(2) スクラム時（引抜開始時に対する変化率）

図5.86 ＢＤＢＥ（パス⑧）基準ケースの３次元解析における制御棒引抜高さの中間位置での空間出力分布

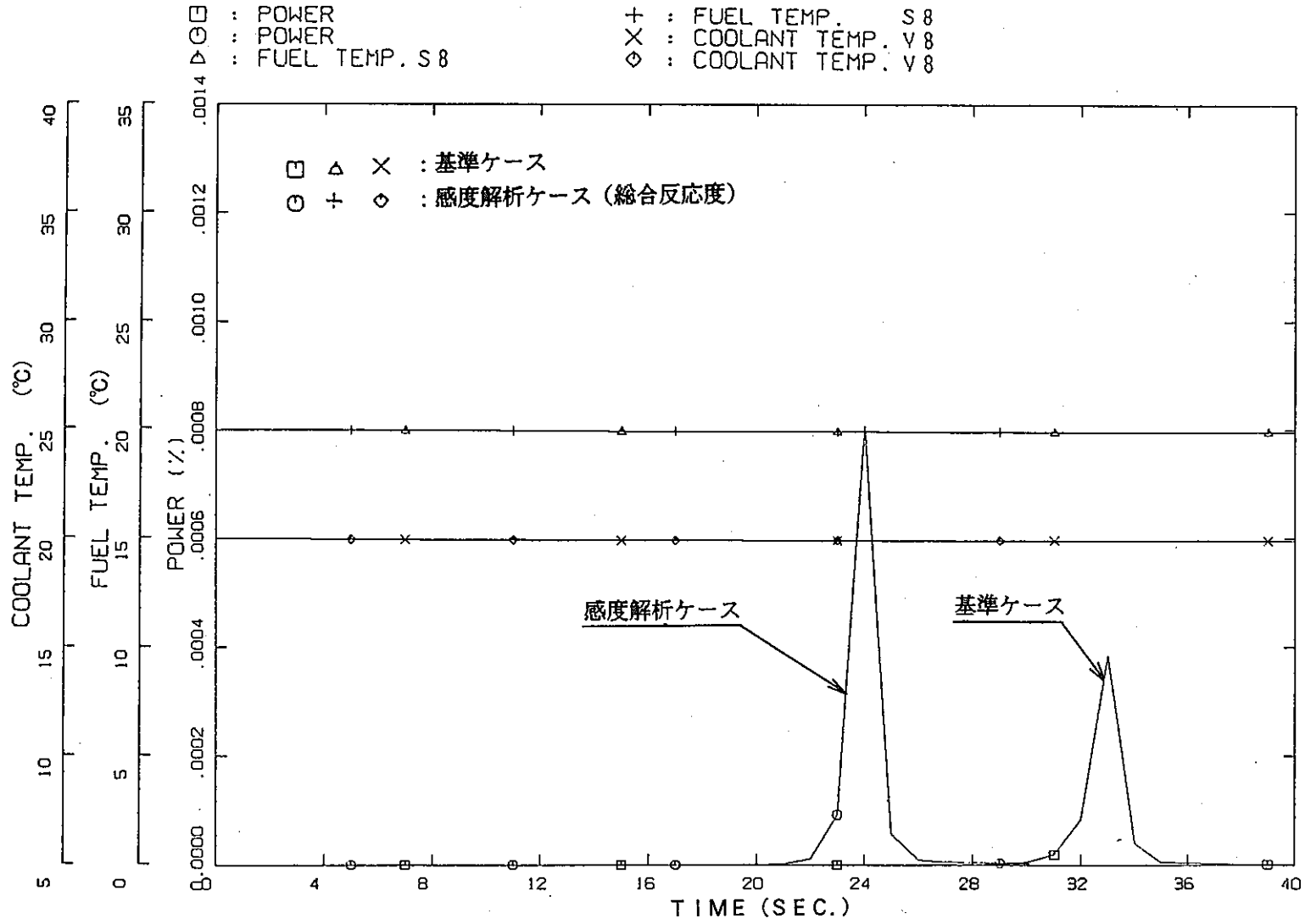


図5.87　総合反応度を使用したＢＤＢＥ（パス⑧）１点近似感度解析における炉出力及び温度変化の比較

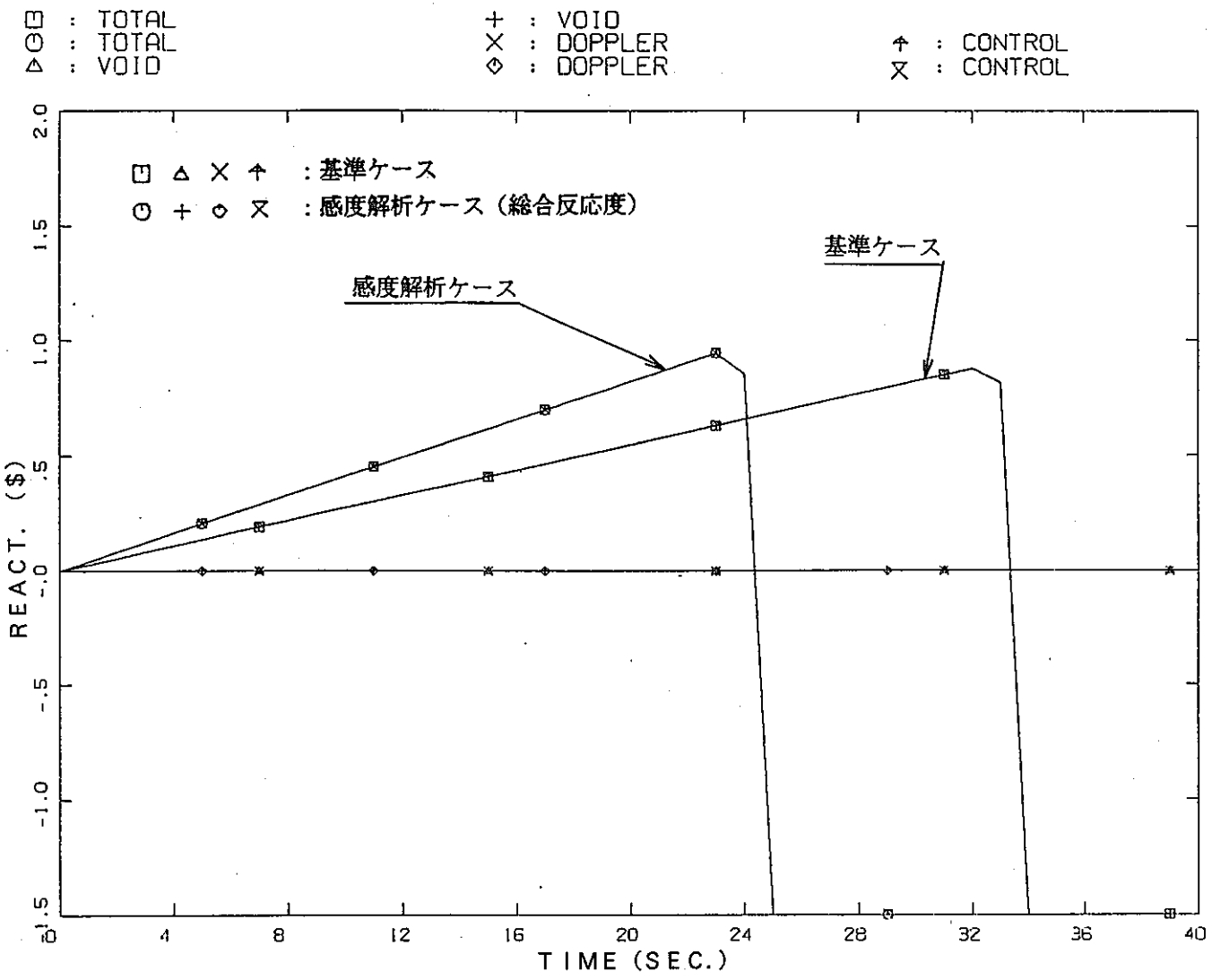


図5.88　総合反応度を使用したＢＤＢＥ（パス⑧）１点近似感度解析における反応度変化の比較

6. 結論

EUREKA-ATRコードを用いて、ATR実証炉の最大反応度投入事象である起動時における制御棒引抜き事象(低温低出力時)を固有のシステム設計条件を含めて解析した結果、以下の結論が得られた。

(1) 設計基準事象(DBE)における解析結果が物理的にみて妥当な挙動を示すものと考えられることから、ATR実証炉の安全解析コードとしてのEUREKA-ATRコードの、起動時における制御棒引抜き事象解析への適用性を確認した。

(2)「幾分DBEを超える想定」の範囲に含まれる事象(BDBE)における解析結果が物理的にみて妥当な挙動を示すものと考えられることから、EUREKA-ATRコードの、起動時における制御棒引抜き事象の事例解析への適用性を確認した。

(3) EUREKA-ATRコードを用いたSPERT-Ⅲ·E及び「ふげん」各炉心の実験解析で確立した基本的解析モデルが、起動時における制御棒引抜き事象解析にも適用できることを確認した。

(4) ATR実証炉の起動時における制御棒引抜き事象の安全評価の観点から1点近似解析手法を検討した結果、1点近似解析における初期出力分布(出力ピーキング係数)、反応度投入率及び反応度係数を以下に示すことを考慮して設定することにより、解析結果(燃料エンタルピー、反応度等)を3次元解析結果より過大に評価できることを確認した。

① スクラム直前の全反応度を評価する場合、反応度投入率を大きく設定し、あるいは反応度係数を正側に設定すれば、投入反応度が大きくなり、フィードバック反応度は小さくなるので全反応度は大きくなる。

② 燃料エンタルピーを評価する場合、1点近似解析では初期出力分布の設定が重要である。出力ピーキング係数が大きい出力分布を設定すれば出力上昇した際の最高燃料温度がより高くなるので、燃料エンタルピーは大きくなる。

参考文献

1) 川太徳夫他　新型転換炉実証炉　EUREKA-ATR/mod3.3コンピュータ・プログラム取扱い説明書[平成2年度版]　PNC ZN9520 90-003.

2) 動力炉・核燃料開発事業団　平成2年度新型転換炉実証炉等反応度投入事象計算(財団法人　原子力安全技術センター　契約業務報告書).

3) 原子力安全委員会　安全審査指針集(改訂6版)　発電用軽水型原子炉施設の反応度投入事象に関する評価指針.

謝　辞

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付録1. EUREKA-ATRの入力データリスト DBE基準ケース3次元解析(パス5)

```
      0
      4
= ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR
*  --- S/D PRESS. = CONSTANT ---
*  PROBLEM DIMENSION CARD
*       LDP NE NT NIR NV NTV NJ NC NF NSB NGM NMT
010001  -2  9  5  7 103  1 110  0  2  81  9   3
*  PROBLEM CONSTANT CARD
*         POWER
010002  1.93E-8
*  EDIT VARIABLE CARD
020000  NQ  0 TR  0 RC  0 RV  0 RW  0 RD  0 RP  0  SE  7 SE  8
*  TIME STEP CARD
*       NIN  MAJ OMP  NCHK DELTH    DTMIN    TLAST   CPU
030010   10  20  10     0   0.1   0.01     2.0  5500.0
030020   10  10  10     0   0.1   0.01     5.0
030030   10  10  10     0   0.1   0.01    90.0
030040    1 100  10     0   0.1   0.01   805.0
030050   10  20  10     0   0.1   0.01 1000.0
*  TRIP CONTROL CARD
*       IDTRP IDSIG IX1 IX2 SETPT DELAY
040010   1     1    0   0  125.0   0.0    * END OF PROBLEM
040020   2     1    0   0    0.0   0.0    * FILL TABLE
040030   7     1    0   0 1000.0   0.0    * SCRUM    SIGNAL
040040   8     1    0   0 1000.0   0.0    * BARI 1   SIGNAL
040050   9     1    0   0 1000.0   0.0    * BARI 2   SIGNAL
040060  10     1    0   0 1000.0   0.0    * ROD STOP SIGNAL
040070   3     1    0   0    2.0   0.0    * KINETICS CALCULATION
*  VOLUME DATA CARD
*       READ P(KG/CM2) T(DEG-C)     X            V(M**3)    ZVOL(M)
*  CHANNEL 1
050011   0   2.910      20.000   -1.0000000   0.001181  0.246667
050021   0   2.860      20.000   -1.0000000   0.002363  0.493333
050031   0   2.770      20.000   -1.0000000   0.002363  0.493333
050041   0   2.690      20.000   -1.0000000   0.002363  0.493333
050051   0   2.610      20.000   -1.0000000   0.001181  0.246667
050061   0   2.540      20.000   -1.0000000   0.002363  0.493333
050071   0   2.440      20.000   -1.0000000   0.002363  0.493333
050081   0   2.340      20.000   -1.0000000   0.002363  0.493333
050091   0   2.280      20.000   -1.0000000   0.001181  0.246667
*  CHANNEL 2
050101   0   2.880      20.000   -1.0000000   0.009450  0.246667
050111   0   2.820      20.000   -1.0000000   0.018901  0.493333
050121   0   2.740      20.000   -1.0000000   0.018901  0.493333
050131   0   2.660      20.000   -1.0000000   0.018901  0.493333
050141   0   2.580      20.000   -1.0000000   0.009450  0.246667
050151   0   2.520      20.000   -1.0000000   0.018901  0.493333
050161   0   2.430      20.000   -1.0000000   0.018901  0.493333
050171   0   2.330      20.000   -1.0000000   0.018901  0.493333
050181   0   2.260      20.000   -1.0000000   0.009450  0.246667
*  CHANNEL  3
050191   0   2.880      20.000   -1.0000000   0.025989  0.246667
050201   0   2.820      20.000   -1.0000000   0.051977  0.493333
050211   0   2.740      20.000   -1.0000000   0.051977  0.493333
050221   0   2.660      20.000   -1.0000000   0.051977  0.493333
050231   0   2.580      20.000   -1.0000000   0.025989  0.246667
050241   0   2.520      20.000   -1.0000000   0.051977  0.493333
050251   0   2.430      20.000   -1.0000000   0.051977  0.493333
050261   0   2.330      20.000   -1.0000000   0.051977  0.493333
050271   0   2.260      20.000   -1.0000000   0.025989  0.246667
*  CHANNEL  4
050281   0   2.890      20.000   -1.0000000   0.146481  0.246667
050291   0   2.830      20.000   -1.0000000   0.292962  0.493333
050301   0   2.750      20.000   -1.0000000   0.292962  0.493333
050311   0   2.670      20.000   -1.0000000   0.292962  0.493333
050321   0   2.590      20.000   -1.0000000   0.146481  0.246667
050331   0   2.520      20.000   -1.0000000   0.292962  0.493333
050341   0   2.430      20.000   -1.0000000   0.292962  0.493333
050351   0   2.330      20.000   -1.0000000   0.292962  0.493333
050361   0   2.270      20.000   -1.0000000   0.146481  0.246667
*  CHANNEL  5
050371   0   2.880      20.000   -1.0000000   0.181920  0.246667
050381   0   2.820      20.000   -1.0000000   0.363840  0.493333
050391   0   2.740      20.000   -1.0000000   0.363840  0.493333
050401   0   2.660      20.000   -1.0000000   0.363840  0.493333
050411   0   2.580      20.000   -1.0000000   0.181920  0.246667
050421   0   2.520      20.000   -1.0000000   0.363840  0.493333
050431   0   2.420      20.000   -1.0000000   0.363840  0.493333
050441   0   2.320      20.000   -1.0000000   0.363840  0.493333
050451   0   2.260      20.000   -1.0000060   0.181920  0.246667
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*  CHANNEL  6
050461   0   2.880      20.000   -1.0000000   0.009450  0.246667
050471   0   2.820      20.000   -1.0000000   0.018901  0.493333
050481   0   2.740      20.000   -1.0000000   0.018901  0.493333
050491   0   2.660      20.000   -1.0000000   0.018901  0.493333
050501   0   2.580      20.000   -1.0000000   0.009450  0.246667
050511   0   2.520      20.000   -1.0000000   0.018901  0.493333
050521   0   2.430      20.000   -1.0000000   0.018901  0.493333
050531   0   2.330      20.000   -1.0000000   0.018901  0.493333
050541   0   2.260      20.000   -1.0000000   0.009450  0.246667
*  CHANNEL  7
050551   0   2.880      20.000   -1.0000000   0.024807  0.246667
050561   0   2.820      20.000   -1.0000000   0.049614  0.493333
050571   0   2.740      20.000   -1.0000000   0.049614  0.493333
050581   0   2.660      20.000   -1.0000000   0.049614  0.493333
050591   0   2.580      20.000   -1.0000000   0.024807  0.246667
050601   0   2.520      20.000   -1.0000000   0.049614  0.493333
050611   0   2.430      20.000   -1.0000000   0.049614  0.493333
050621   0   2.330      20.000   -1.0000000   0.049614  0.493333
050631   0   2.260      20.000   -1.0000000   0.024807  0.246667
*  CHANNEL  8
050641   0   2.890      20.000   -1.0000000   0.146481  0.246667
050651   0   2.830      20.000   -1.0000000   0.292962  0.493333
050661   0   2.750      20.000   -1.0000000   0.292962  0.493333
050671   0   2.670      20.000   -1.0000000   0.292962  0.493333
050681   0   2.590      20.000   -1.0000000   0.146481  0.246667
050691   0   2.520      20.000   -1.0000000   0.292962  0.493333
050701   0   2.430      20.000   -1.0000000   0.292962  0.493333
050711   0   2.330      20.000   -1.0000000   0.292962  0.493333
050721   0   2.270      20.000   -1.0000000   0.146481  0.246667
*  CHANNEL  9
050731   0   2.880      20.000   -1.0000000   0.181920  0.246667
050741   0   2.820      20.000   -1.0000000   0.363840  0.493333
050751   0   2.740      20.000   -1.0000000   0.363840  0.493333
050761   0   2.660      20.000   -1.0000000   0.363840  0.493333
050771   0   2.580      20.000   -1.0000000   0.181920  0.246667
050781   0   2.520      20.000   -1.0000000   0.363840  0.493333
050791   0   2.420      20.000   -1.0000000   0.363840  0.493333
050801   0   2.320      20.000   -1.0000000   0.363840  0.493333
050811   0   2.260      20.000   -1.0000000   0.181920  0.246667
*  CHANNEL 1
050821   0   3.260      20.000   -1.0000000   0.033485  1.734
050911   0   1.670      20.000   -1.0000000   0.098652 10.108
*  CHANNEL 2
050831   0   3.240      20.000   -1.0000000   0.201520  1.734
050921   0   1.660      20.000   -1.0000000   0.772390 10.108
*  CHANNEL 3
050841   0   3.240      20.000   -1.0000000   0.549960  1.734
050931   0   1.660      20.000   -1.0000000   2.159970 10.108
*  CHANNEL 4
050851   0   3.250      20.000   -1.0000000   2.975700  1.734
050941   0   1.660      20.000   -1.0000000  12.115800 10.108
*  CHANNEL 5
050861   0   3.240      20.000   -1.0000000   4.160900  1.734
050951   0   1.660      20.000   -1.0000000  12.457800 10.108
*  CHANNEL 6
050871   0   3.240      20.000   -1.0000000   0.201520  1.734
050961   0   1.660      20.000   -1.0000000   0.772410 10.108
*  CHANNEL 7
050881   0   3.240      20.000   -1.0000000   0.516470  1.734
050971   0   1.660      20.000   -1.0000000   2.061776 10.108
*  CHANNEL 8
050891   0   3.250      20.000   -1.0000000   2.975700  1.734
050981   0   1.670      20.000   -1.0000000  12.115800 10.108
*  CHANNEL 9
050901   0   3.230      20.000   -1.0000000   4.160900  1.734
050991   0   1.660      20.000   -1.0000000  12.457800 10.108
*  A LOOP
051001   0   3.600      20.000   -1.0000000    8.878    0.800000
051011   1   1.000      20.000   -1.0000000   187.29    1.8
*  B LOOP
051021   0   3.600      20.000   -1.0000000    8.878    0.800000
051031   1   1.000      20.000   -1.0000000   187.29    1.8
*         AREA        EQDIA       ELEV
*  CHANNEL 1
050012  0.00478904  0.009319  0.000000
050022  0.00478904  0.009319  0.246667
050032  0.00478904  0.009319  0.740000
050042  0.00478904  0.009319  1.233333
050052  0.00478904  0.009319  1.726667
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161  050062  0.00478904  0.009319  1.973333                    161
162  050072  0.00478904  0.009319  2.466667                    162
163  050082  0.00478904  0.009319  2.960000                    163
164  050092  0.00478904  0.009319  3.453333                    164
165  *  CHANNEL 2                                              165
166  050102  0.03831232  0.009319  0.000000                    166
167  050112  0.03831232  0.009319  0.246667                    167
168  050122  0.03831232  0.009319  0.740000                    168
169  050132  0.03831232  0.009319  1.233333                    169
170  050142  0.03831232  0.009319  1.726667                    170
171  050152  0.03831232  0.009319  1.973333                    171
172  050162  0.03831232  0.009319  2.466667                    172
173  050172  0.03831232  0.009319  2.960000                    173
174  050182  0.03831232  0.009319  3.453333                    174
175  *  CHANNEL 3                                              175
176  050192  0.10535888  0.009319  0.000000                    176
177  050202  0.10535888  0.009319  0.246667                    177
178  050212  0.10535888  0.009319  0.740000                    178
179  050222  0.10535888  0.009319  1.233333                    179
180  050232  0.10535888  0.009319  1.726667                    180
181  050242  0.10535888  0.009319  1.973333                    181
182  050252  0.10535888  0.009319  2.466667                    182
183  050262  0.10535888  0.009319  2.960000                    183
184  050272  0.10535888  0.009319  3.453333                    184
185  *  CHANNEL 4                                              185
186  050282  0.59384096  0.009319  0.000000                    186
187  050292  0.59384096  0.009319  0.246667                    187
188  050302  0.59384096  0.009319  0.740000                    188
189  050312  0.59384096  0.009319  1.233333                    189
190  050322  0.59384096  0.009319  1.726667                    190
191  050332  0.59384096  0.009319  1.973333                    191
192  050342  0.59384096  0.009319  2.466667                    192
193  050352  0.59384096  0.009319  2.960000                    193
194  050362  0.59384096  0.009319  3.453333                    194
195  *  CHANNEL 5                                              195
196  050372  0.73751154  0.009319  0.000000                    196
197  050382  0.73751154  0.009319  0.246667                    197
198  050392  0.73751154  0.009319  0.740000                    198
199  050402  0.73751154  0.009319  1.233333                    199
200  050412  0.73751154  0.009319  1.726667                    200
201  050422  0.73751154  0.009319  1.973333                    201
202  050432  0.73751154  0.009319  2.466667                    202
203  050442  0.73751154  0.009319  2.960000                    203
204  050452  0.73751154  0.009319  3.453333                    204
205  *  CHANNEL 6                                              205
206  050462  0.03831232  0.009319  0.000000                    206
207  050472  0.03831232  0.009319  0.246667                    207
208  050482  0.03831232  0.009319  0.740000                    208
209  050492  0.03831232  0.009319  1.233333                    209
210  050502  0.03831232  0.009319  1.726667                    210
211  050512  0.03831232  0.009319  1.973333                    211
212  050522  0.03831232  0.009319  2.466667                    212
213  050532  0.03831232  0.009319  2.960000                    213
214  050542  0.03831232  0.009319  3.453333                    214
215  *  CHANNEL 7                                              215
216  050552  0.10056984  0.009319  0.000000                    216
217  050562  0.10056984  0.009319  0.246667                    217
218  050572  0.10056984  0.009319  0.740000                    218
219  050582  0.10056984  0.009319  1.233333                    219
220  050592  0.10056984  0.009319  1.726667                    220
221  050602  0.10056984  0.009319  1.973333                    221
222  050612  0.10056984  0.009319  2.466667                    222
223  050622  0.10056984  0.009319  2.960000                    223
224  050632  0.10056984  0.009319  3.453333                    224
225  *  CHANNEL 8                                              225
226  050642  0.59384096  0.009319  0.000000                    226
227  050652  0.59384096  0.009319  0.246667                    227
228  050662  0.59384096  0.009319  0.740000                    228
229  050672  0.59384096  0.009319  1.233333                    229
230  050682  0.59384096  0.009319  1.726667                    230
231  050692  0.59384096  0.009319  1.973333                    231
232  050702  0.59384096  0.009319  2.466667                    232
233  050712  0.59384096  0.009319  2.960000                    233
234  050722  0.59384096  0.009319  3.453333                    234
235  *  CHANNEL 9                                              235
236  050732  0.73751154  0.009319  0.000000                    236
237  050742  0.73751154  0.009319  0.246667                    237
238  050752  0.73751154  0.009319  0.740000                    238
239  050762  0.73751154  0.009319  1.233333                    239
240  050772  0.73751154  0.009319  1.726667                    240
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050782  0.73751154  0.009319  1.973333
050792  0.73751154  0.009319  2.466667
050802  0.73751154  0.009319  2.960000
050812  0.73751154  0.009319  3.453333
*  CHANNEL 1
050822  0.0019244   0.0495   -1.734000
050912  0.0042892   0.0739    3.700000
*  CHANNEL 2
050832  0.015395    0.0495   -1.734000
050922  0.034314    0.0739    3.700000
*  CHANNEL 3
050842  0.042337    0.0495   -1.734000
050932  0.094363    0.0739    3.700000
*  CHANNEL 4
050852  0.238630    0.0495   -1.734000
050942  0.531860    0.0739    3.700000
*  CHANNEL 5
050862  0.296360    0.0495   -1.734000
050952  0.660540    0.0739    3.700000
*  CHANNEL 6
050872  0.015395    0.0495   -1.734000
050962  0.034314    0.0739    3.700000
*  CHANNEL 7
050882  0.040412    0.0495   -1.734000
050972  0.090073    0.0739    3.700000
*  CHANNEL 8
050892  0.238630    0.0495   -1.734000
050982  0.531860    0.0739    3.700000
*  CHANNEL 9
050902  0.296360    0.0495   -1.734000
050992  0.660540    0.0739    3.700000
*  A LOOP
051002  0.5204      0.8140   -2.134000
051012  10.17       3.6      13.808000
*  B LOOP
051022  0.5204      0.8140   -2.134000
051032  10.17       3.6      13.808000
*      IFRIC
070000   1
*      MSLIP MALPH MVOID XALPH
080000   5     5     1
*  JUNCTION DATA CARD
*       IN OUT FILL VALV FLOW     AREA       ELEV     INERT FJUNF  FJUNR
*  CHANNEL 1
080011  82  1    0    0    23.92   .00478904  0.0      0     2.952  1.34
080021   1  2    0    0    23.92   .00478904  0.246667 0     1.34   2.01
080031   2  3    0    0    23.92   .00478904  0.740000 0     2.01   2.01
080041   3  4    0    0    23.92   .00478904  1.233333 0     2.01   2.01
080051   4  5    0    0    23.92   .00478904  1.726667 0     2.01   1.34
080061   5  6    0    0    23.92   .00478904  1.973333 0     1.34   2.01
080071   6  7    0    0    23.92   .00478904  2.466667 0     2.01   2.01
080081   7  8    0    0    23.92   .00478904  2.960000 0     2.01   2.01
080091   8  9    0    0    23.92   .00478904  3.453333 0     2.01   1.34
080101   9 91    0    0    23.92   .00478904  3.700000 0     1.34   3.795
*  CHANNEL 2
080111  83 10    0    0   184.23   .03831232  0.0      0     2.952  1.34
080121  10 11    0    0   184.23   .03831232  0.246667 0     1.34   2.01
080131  11 12    0    0   184.23   .03831232  0.740000 0     2.01   2.01
080141  12 13    0    0   184.23   .03831232  1.233333 0     2.01   2.01
080151  13 14    0    0   184.23   .03831232  1.726667 0     2.01   1.34
080161  14 15    0    0   184.23   .03831232  1.973333 0     1.34   2.01
080171  15 16    0    0   184.23   .03831232  2.466667 0     2.01   2.01
080181  16 17    0    0   184.23   .03831232  2.960000 0     2.01   2.01
080191  17 18    0    0   184.23   .03831232  3.453333 0     2.01   1.34
080201  18 92    0    0   184.23   .03831232  3.700000 0     1.34   3.795
*  CHANNEL 3
080211  84 19    0    0   506.56   .10535888  0.0      0     2.952  1.34
080221  19 20    0    0   506.56   .10535888  0.246667 0     1.34   2.01
080231  20 21    0    0   506.56   .10535888  0.740000 0     2.01   2.01
080241  21 22    0    0   506.56   .10535888  1.233333 0     2.01   2.01
080251  22 23    0    0   506.56   .10535888  1.726667 0     2.01   1.34
080261  23 24    0    0   506.56   .10535888  1.973333 0     1.34   2.01
080271  24 25    0    0   506.56   .10535888  2.466667 0     2.01   2.01
080281  25 26    0    0   506.56   .10535888  2.960000 0     2.01   2.01
080291  26 27    0    0   506.56   .10535888  3.453333 0     2.01   1.34
080301  27 93    0    0   506.56   .10535888  3.700000 0     1.34   3.795
*  CHANNEL 4
080311  85 28    0    0  2877.94   .59384096  0.0      0     2.952  1.34
080321  28 29    0    0  2877.94   .59384096  0.246667 0     1.34   2.01
080331  29 30    0    0  2877.94   .59384096  0.740000 0     2.01   2.01
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321  080341  30 31   0   0  2877.94   .59384096   1.233333 0     2.01   2.01    321
322  080351  31 32   0   0  2877.94   .59384096   1.726667 0     2.01   1.34    322
323  080361  32 33   0   0  2877.94   .59384096   1.973333 0     1.34   2.01    323
324  080371  33 34   0   0  2877.94   .59384096   2.466667 0     2.01   2.01    324
325  080381  34 35   0   0  2877.94   .59384096   2.960000 0     2.01   2.01    325
326  080391  35 36   0   0  2877.94   .59384096   3.453333 0     2.01   1.34    326
327  080401  36 94   0   0  2877.94   .59384096   3.700000 0     1.34   3.795   327
328  * CHANNEL 5                                                                 328
329  080411  86 37   0   0  3536.27   .73751154   0.0      0     2.952  1.34    329
330  080421  37 38   0   0  3536.27   .73751154   0.246667 0     1.34   2.01    330
331  080431  38 39   0   0  3536.27   .73751154   0.740000 0     2.01   2.01    331
332  080441  39 40   0   0  3536.27   .73751154   1.233333 0     2.01   2.01    332
333  080451  40 41   0   0  3536.27   .73751154   1.726667 0     2.01   1.34    333
334  080461  41 42   0   0  3536.27   .73751154   1.973333 0     1.34   2.01    334
335  080471  42 43   0   0  3536.27   .73751154   2.466667 0     2.01   2.01    335
336  080481  43 44   0   0  3536.27   .73751154   2.960000 0     2.01   2.01    336
337  080491  44 45   0   0  3536.27   .73751154   3.453333 0     2.01   1.34    337
338  080501  45 95   0   0  3536.27   .73751154   3.700000 0     1.34   3.795   338
339  * CHANNEL 6                                                                 339
340  080511  87 46   0   0   184.23   .03831232   0.0      0     2.952  1.34    340
341  080521  46 47   0   0   184.23   .03831232   0.246667 0     1.34   2.01    341
342  080531  47 48   0   0   184.23   .03831232   0.740000 0     2.01   2.01    342
343  080541  48 49   0   0   184.23   .03831232   1.233333 0     2.01   2.01    343
344  080551  49 50   0   0   184.23   .03831232   1.726667 0     2.01   1.34    344
345  080561  50 51   0   0   184.23   .03831232   1.973333 0     1.34   2.01    345
346  080571  51 52   0   0   184.23   .03831232   2.466667 0     2.01   2.01    346
347  080581  52 53   0   0   184.23   .03831232   2.960000 0     2.01   2.01    347
348  080591  53 54   0   0   184.23   .03831232   3.453333 0     2.01   1.34    348
349  080601  54 96   0   0   184.23   .03831232   3.700000 0     1.34   3.795   349
350  * CHANNEL 7                                                                 350
351  080611  88 55   0   0   506.56   .10056984   0.0      0     2.952  1.34    351
352  080621  55 56   0   0   506.56   .10056984   0.246667 0     1.34   2.01    352
353  080631  56 57   0   0   506.56   .10056984   0.740000 0     2.01   2.01    353
354  080641  57 58   0   0   506.56   .10056984   1.233333 0     2.01   2.01    354
355  080651  58 59   0   0   506.56   .10056984   1.726667 0     2.01   1.34    355
356  080661  59 60   0   0   506.56   .10056984   1.973333 0     1.34   2.01    356
357  080671  60 61   0   0   506.56   .10056984   2.466667 0     2.01   2.01    357
358  080681  61 62   0   0   506.56   .10056984   2.960000 0     2.01   2.01    358
359  080691  62 63   0   0   506.56   .10056984   3.453333 0     2.01   1.34    359
360  080701  63 97   0   0   506.56   .10056984   3.700000 0     1.34   3.795   360
361  * CHANNEL 8                                                                 361
362  080711  89 64   0   0  2853.85   .59384096   0.0      0     2.952  1.34    362
363  080721  64 65   0   0  2853.85   .59384096   0.246667 0     1.34   2.01    363
364  080731  65 66   0   0  2853.85   .59384096   0.740000 0     2.01   2.01    364
365  080741  66 67   0   0  2853.85   .59384096   1.233333 0     2.01   2.01    365
366  080751  67 68   0   0  2853.85   .59384096   1.726667 0     2.01   1.34    366
367  080761  68 69   0   0  2853.85   .59384096   1.973333 0     1.34   2.01    367
368  080771  69 70   0   0  2853.85   .59384096   2.466667 0     2.01   2.01    368
369  080781  70 71   0   0  2853.85   .59384096   2.960000 0     2.01   2.01    369
370  080791  71 72   0   0  2853.85   .59384096   3.453333 0     2.01   1.34    370
371  080801  72 98   0   0  2853.85   .59384096   3.700000 0     1.34   3.795   371
372  * CHANNEL 9                                                                 372
373  080811  90 73   0   0  3536.44   .73751154   0.0      0     2.952  1.34    373
374  080821  73 74   0   0  3536.44   .73751154   0.246667 0     1.34   2.01    374
375  080831  74 75   0   0  3536.44   .73751154   0.740000 0     2.01   2.01    375
376  080841  75 76   0   0  3536.44   .73751154   1.233333 0     2.01   2.01    376
377  080851  76 77   0   0  3536.44   .73751154   1.726667 0     2.01   1.34    377
378  080861  77 78   0   0  3536.44   .73751154   1.973333 0     1.34   2.01    378
379  080871  78 79   0   0  3536.44   .73751154   2.466667 0     2.01   2.01    379
380  080881  79 80   0   0  3536.44   .73751154   2.960000 0     2.01   2.01    380
381  080891  80 81   0   0  3536.44   .73751154   3.453333 0     2.01   1.34    381
382  080901  81 99   0   0  3536.44   .73751154   3.700000 0     1.34   3.795   382
383  * CHANNEL 1                                                                 383
384  080911 102 82   0   0    23.92   .0019244   -1.734    0     0.0    2.952   384
385  080921  91 103  0   0    23.92   .0042892   13.808    0     3.795  0.0     385
386  * CHANNEL 2                                                                 386
387  080931 100 83   0   0   184.23   .015395    -1.734    0     0.0    2.952   387
388  080941  92 101  0   0   184.23   .034314    13.808    0     3.795  0.0     388
389  * CHANNEL 3                                                                 389
390  080951 100 84   0   0   506.56   .042337    -1.734    0     0.0    2.952   390
391  080961  93 101  0   0   506.56   .094363    13.808    0     3.795  0.0     391
392  * CHANNEL 4                                                                 392
393  080971 100 85   0   0  2877.94   .238630    -1.734    0     0.0    2.952   393
394  080981  94 101  0   0  2877.94   .531860    13.808    0     3.795  0.0     394
395  * CHANNEL 5                                                                 395
396  080991 100 86   0   0  3536.27   .296360    -1.734    0     0.0    2.952   396
397  081001  95 101  0   0  3536.27   .660540    13.808    0     3.795  0.0     397
398  * CHANNEL 6                                                                 398
399  081011 102 87   0   0   184.23   .015395    -1.734    0     0.0    2.952   399
400  081021  96 103  0   0   184.23   .034314    13.808    0     3.795  0.0     400
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401  * CHANNEL 7                                                                  401
402  081031 102 88    0   0   506.56   .040412   -1.734   0     0.0   2.952    402
403  081041  97 103   0   0   506.56   .090073   13.808   0     3.795 0.0      403
404  * CHANNEL 8                                                                  404
405  081051 102 89    0   0  2853.85   .238630   -1.734   0     0.0   2.952    405
406  081061  98 103   0   0  2853.85   .531860   13.808   0     3.795 0.0      406
407  * CHANNEL 9                                                                  407
408  081071 102 90    0   0  3536.44   .296360   -1.734   0     0.0   2.952    408
409  081081  99 103   0   0  3536.44   .660540   13.808   0     3.795 0.0      409
410  * A LOOP                                                                     410
411  081091   0 100   1   0  7105.00  1.0        -1.734   0      .1    .1       411
412  * B LOOP                                                                     412
413  081101   0 102   2   0  7105.00  1.0        -1.734   0      .1    .1       413
414  *      ENTRANS SRCOS                                                        414
415  080012   2     -1.0                                                        415
416  080022   3     -1.0                                                        416
417  080032   3     -1.0                                                        417
418  080042   3     -1.0                                                        418
419  080052   3     -1.0                                                        419
420  080062   3     -1.0                                                        420
421  080072   3     -1.0                                                        421
422  080082   3     -1.0                                                        422
423  080092   3     -1.0                                                        423
424  080102   1     -1.0                                                        424
425  *                                                                         425
426  080112   2     -1.0                                                        426
427  080122   3     -1.0                                                        427
428  080132   3     -1.0                                                        428
429  080142   3     -1.0                                                        429
430  080152   3     -1.0                                                        430
431  080162   3     -1.0                                                        431
432  080172   3     -1.0                                                        432
433  080182   3     -1.0                                                        433
434  080192   3     -1.0                                                        434
435  080202   1     -1.0                                                        435
436  *                                                                         436
437  080212   2     -1.0                                                        437
438  080222   3     -1.0                                                        438
439  080232   3     -1.0                                                        439
440  080242   3     -1.0                                                        440
441  080252   3     -1.0                                                        441
442  080262   3     -1.0                                                        442
443  080272   3     -1.0                                                        443
444  080282   3     -1.0                                                        444
445  080292   3     -1.0                                                        445
446  080302   1     -1.0                                                        446
447  *                                                                         447
448  080312   2     -1.0                                                        448
449  080322   3     -1.0                                                        449
450  080332   3     -1.0                                                        450
451  080342   3     -1.0                                                        451
452  080352   3     -1.0                                                        452
453  080362   3     -1.0                                                        453
454  080372   3     -1.0                                                        454
455  080382   3     -1.0                                                        455
456  080392   3     -1.0                                                        456
457  080402   1     -1.0                                                        457
458  *                                                                         458
459  080412   2     -1.0                                                        459
460  080422   3     -1.0                                                        460
461  080432   3     -1.0                                                        461
462  080442   3     -1.0                                                        462
463  080452   3     -1.0                                                        463
464  080462   3     -1.0                                                        464
465  080472   3     -1.0                                                        465
466  080482   3     -1.0                                                        466
467  080492   3     -1.0                                                        467
468  080502   1     -1.0                                                        468
469  *                                                                         469
470  080512   2     -1.0                                                        470
471  080522   3     -1.0                                                        471
472  080532   3     -1.0                                                        472
473  080542   3     -1.0                                                        473
474  080552   3     -1.0                                                        474
475  080562   3     -1.0                                                        475
476  080572   3     -1.0                                                        476
477  080582   3     -1.0                                                        477
478  080592   3     -1.0                                                        478
479  080602   1     -1.0                                                        479
480  *                                                                         480
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080612  2    -1.0
080622  3    -1.0
080632  3    -1.0
080642  3    -1.0
080652  3    -1.0
080662  3    -1.0
080672  3    -1.0
080682  3    -1.0
080692  3    -1.0
080702  1    -1.0
*
080712  2    -1.0
080722  3    -1.0
080732  3    -1.0
080742  3    -1.0
080752  3    -1.0
080762  3    -1.0
080772  3    -1.0
080782  3    -1.0
080792  3    -1.0
080802  1    -1.0
*
080812  2    -1.0
080822  3    -1.0
080832  3    -1.0
080842  3    -1.0
080852  3    -1.0
080862  3    -1.0
080872  3    -1.0
080882  3    -1.0
080892  3    -1.0
080902  1    -1.0
*
080912  0    -1.0
080922  0    -1.0
*
080932  0    -1.0
080942  0    -1.0
*
080952  0    -1.0
080962  0    -1.0
*
080972  0    -1.0
080982  0    -1.0
*
080992  0    -1.0
081002  0    -1.0
*
081012  0    -1.0
081022  0    -1.0
*
081032  0    -1.0
081042  0    -1.0
*
081052  0    -1.0
081062  0    -1.0
081072  0    -1.0
081082  0    -1.0
* A LOOP
081092  0      0.0
* B LOOP
081102  0      0.0
*       TRIP  NP
130100    2   2
*         TIME      W        H
130101     0.0    7105.00   20.0
130102  1000.0    7105.00   20.0
*       TRIP  NP
130200    2   2
*         TIME      W        H
130201     0.0    7105.00   20.0
130202  1000.0    7105.00   20.0
* KINETICS CONSTANT CARD
*      POWER    BETA   PRLIFE  PROMPT LAMBDA  TAU
140000   1    4.390E-3 1.49E-4  1.0     0.0   0.0
* INITIATED REACTIVITY
*       NPT IDTRP  (TIME * REACTIVITY)
141100 -12   7   0.0   0.0     0.55  0.0     1.05 -0.0006  1.25 -0.0025
141101           1.50 -0.0055  1.77 -0.0108  2.00 -0.0158  2.25 -0.0238
141102           2.50 -0.0368  2.66 -0.0428  2.84 -0.0448 1000.0 -0.0448
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141200  -2    8   0.0  0.0       1000.0  0.0                                  
141300  -2    9   0.0  0.0       1000.0  0.0                                  
141400  -5   10  0.0  0.0 5.0 0.0 15.00 1.200E-3                              
141401                              66.67 7.400E-3  1000.00  7.400E-3          
141500  -2    3   0.0  0.0       1000.0  0.0                                  
*  COMPENSATED REACTIVITY DUE TO VOID                                        
*       NPT  (VOID FRACTION * REACTIVITY)                                    
*  CASE - 0                                                                  
142000   7  0.0      0.0         0.2      0.043E-2   0.3     0.112E-2         
142001       0.4      0.214E-2   0.6      0.571E-2   0.8     1.338E-2         
142002       1.0      2.991E-2                                               
*  COMPENSATED REACTIVITY DUE TO DOPPLER EFFECT                              
*       NPT (BASE DATA)                                                      
143000  -9   20.0    0.0          100.0   -0.215E-2    200.0  -0.473E-2       
143001      287.8   -0.664E-2     529.0   -1.149E-2    629.0  -1.335E-2       
143002      729.0   -1.498E-2    1000.0   -1.909E-2   1500.0  -2.558E-2       
*  COMPENSATED REACTIVITY DUE TO COOLANT EFFECT                              
*       NPT (BASE  DATA)                                                     
145000  -7                        20.0     0.0          50.0    0.021E-2      
145001      100.0    0.099E-2     150.0    0.222E-2    200.0    0.372E-2      
145002      250.0    0.564E-2     287.8    0.662E-2                           
*  HEAT SLAB DATA                                                            
*       RV GEOM STACK IHC  RAREA    VOLS                                     
*  CHANNEL 1                                                                 
150011   1  1     0    0  0.404512  .00146635                                 
150021   2  1     1    0  0.809024  .00293270                                 
150031   3  1     1    0  0.809024  .00293270                                 
150041   4  1     1    0  0.809024  .00293270                                 
150051   5  1     1    0  0.404512  .00146635                                 
150061   6  1     1    0  0.809024  .00293270                                 
150071   7  1     1    0  0.809024  .00293270                                 
150081   8  1     1    0  0.809024  .00293270                                 
150091   9  1     1    0  0.404512  .00146635                                 
*  CHANNEL 2                                                                 
150101  10  2     0    0  3.236096  .01173080                                 
150111  11  2     1    0  6.472192  .02346160                                 
150121  12  2     1    0  6.472192  .02346160                                 
150131  13  2     1    0  6.472192  .02346160                                 
150141  14  2     1    0  3.236096  .01173080                                 
150151  15  2     1    0  6.472192  .02346160                                 
150161  16  2     1    0  6.472192  .02346160                                 
150171  17  2     1    0  6.472192  .02346160                                 
150181  18  2     1    0  3.236096  .01173080                                 
*  CHANNEL 3                                                                 
150191  19  3     0    0  8.899264  .03225970                                 
150201  20  3     1    0 17.798528  .06451940                                 
150211  21  3     1    0 17.798528  .06451940                                 
150221  22  3     1    0 17.798528  .06451940                                 
150231  23  3     1    0  8.899264  .03225970                                 
150241  24  3     1    0 17.798528  .06451940                                 
150251  25  3     1    0 17.798528  .06451940                                 
150261  26  3     1    0 17.798528  .06451940                                 
150271  27  3     1    0  8.899264  .03225970                                 
*  CHANNEL 4                                                                 
150281  28  4     0    0  50.159488 .18182740                                 
150291  29  4     1    0 100.318976 .36365480                                 
150301  30  4     1    0 100.318976 .36365480                                 
150311  31  4     1    0 100.318976 .36365480                                 
150321  32  4     1    0  50.159488 .18182740                                 
150331  33  4     1    0 100.318976 .36365480                                 
150341  34  4     1    0 100.318976 .36365480                                 
150351  35  4     1    0 100.318976 .36365480                                 
150361  36  4     1    0  50.159488 .18182740                                 
*  CHANNEL 5                                                                 
150371  37  5     0    0  62.294848 .22581883                                 
150381  38  5     1    0 124.589696 .45163766                                 
150391  39  5     1    0 124.589696 .45163766                                 
150401  40  5     1    0 124.589696 .45163766                                 
150411  41  5     1    0  62.294848 .22581883                                 
150421  42  5     1    0 124.589696 .45163766                                 
150431  43  5     1    0 124.589696 .45163766                                 
150441  44  5     1    0 124.589696 .45163766                                 
150451  45  5     1    0  62.294848 .22581883                                 
*  CHANNEL 6                                                                 
150461  46  6     0    0  3.236096  .01173080                                 
150471  47  6     1    0  6.472192  .02346160                                 
150481  48  6     1    0  6.472192  .02346160                                 
150491  49  6     1    0  6.472192  .02346160                                 
150501  50  6     1    0  3.236096  .01173080                                 
150511  51  6     1    0  6.472192  .02346160                                 
```

```
641  150521  52  6    1   0  6.472192  .02346160                    641
642  150531  53  6    1   0  6.472192  .02346160                    642
643  150541  54  6    1   0  3.236096  .01173080                    643
644  *  CHANNEL 7                                                   644
645  150551  55  7    0   0  8.494752  .03079335                    645
646  150561  56  7    1   0 16.989504  .06158670                    646
647  150571  57  7    1   0 16.989504  .06158670                    647
648  150581  58  7    1   0 16.989504  .06158670                    648
649  150591  59  7    1   0  8.494752  .03079335                    649
650  150601  60  7    1   0 16.989504  .06158670                    650
651  150611  61  7    1   0 16.989504  .06158670                    651
652  150621  62  7    1   0 16.989504  .06158670                    652
653  150631  63  7    1   0  8.494752  .03079335                    653
654  *  CHANNEL 8                                                   654
655  150641  64  8    0   0  50.159488 .18182740                    655
656  150651  65  8    1   0 100.318976 .36365480                    656
657  150661  66  8    1   0 100.318976 .36365480                    657
658  150671  67  8    1   0 100.318976 .36365480                    658
659  150681  68  8    1   0  50.159488 .18182740                    659
660  150691  69  8    1   0 100.318976 .36365480                    660
661  150701  70  8    1   0 100.318976 .36365480                    661
662  150711  71  8    1   0 100.318976 .36365480                    662
663  150721  72  8    1   0  50.159488 .18182740                    663
664  *  CHANNEL 9                                                   664
665  150731  73  9    0   0  62.294848 .22581883                    665
666  150741  74  9    1   0 124.589696 .45163767                    666
667  150751  75  9    1   0 124.589696 .45163767                    667
668  150761  76  9    1   0 124.589696 .45163767                    668
669  150771  77  9    1   0  62.294848 .22581883                    669
670  150781  78  9    1   0 124.589696 .45163767                    670
671  150791  79  9    1   0 124.589696 .45163767                    671
672  150801  80  9    1   0 124.589696 .45163767                    672
673  150811  81  9    1   0  62.294848 .22581883                    673
674  *       DHEL    DHER      ZBOT    ZTOP                        674
675  150012  0       0.01168   0.0     .246667                     675
676  150022  0       0.01168   0.0     .493333                     676
677  150032  0       0.01168   0.0     .493333                     677
678  150042  0       0.01168   0.0     .493333                     678
679  150052  0       0.01168   0.0     .246667                     679
680  150062  0       0.01168   0.0     .493333                     680
681  150072  0       0.01168   0.0     .493333                     681
682  150082  0       0.01168   0.0     .493333                     682
683  150092  0       0.01168   0.0     .246667                     683
684  *                                                             684
685  150102  0       0.01168   0.0     .246667                     685
686  150112  0       0.01168   0.0     .493333                     686
687  150122  0       0.01168   0.0     .493333                     687
688  150132  0       0.01168   0.0     .493333                     688
689  150142  0       0.01168   0.0     .246667                     689
690  150152  0       0.01168   0.0     .493333                     690
691  150162  0       0.01168   0.0     .493333                     691
692  150172  0       0.01168   0.0     .493333                     692
693  150182  0       0.01168   0.0     .246667                     693
694  *                                                             694
695  150192  0       0.01168   0.0     .246667                     695
696  150202  0       0.01168   0.0     .493333                     696
697  150212  0       0.01168   0.0     .493333                     697
698  150222  0       0.01168   0.0     .493333                     698
699  150232  0       0.01168   0.0     .246667                     699
700  150242  0       0.01168   0.0     .493333                     700
701  150252  0       0.01168   0.0     .493333                     701
702  150262  0       0.01168   0.0     .493333                     702
703  150272  0       0.01168   0.0     .246667                     703
704  *                                                             704
705  150282  0       0.01168   0.0     .246667                     705
706  150292  0       0.01168   0.0     .493333                     706
707  150302  0       0.01168   0.0     .493333                     707
708  150312  0       0.01168   0.0     .493333                     708
709  150322  0       0.01168   0.0     .246667                     709
710  150332  0       0.01168   0.0     .493333                     710
711  150342  0       0.01168   0.0     .493333                     711
712  150352  0       0.01168   0.0     .493333                     712
713  150362  0       0.01168   0.0     .246667                     713
714  *                                                             714
715  150372  0       0.01168   0.0     .246667                     715
716  150382  0       0.01168   0.0     .493333                     716
717  150392  0       0.01168   0.0     .493333                     717
718  150402  0       0.01168   0.0     .493333                     718
719  150412  0       0.01168   0.0     .246667                     719
720  150422  0       0.01168   0.0     .493333                     720
```

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150432  0      0.01168   0.0    .493333
150442  0      0.01168   0.0    .493333
150452  0      0.01168   0.0    .246667
*
150462  0      0.01168   0.0    .246667
150472  0      0.01168   0.0    .493333
150482  0      0.01168   0.0    .493333
150492  0      0.01168   0.0    .493333
150502  0      0.01168   0.0    .246667
150512  0      0.01168   0.0    .493333
150522  0      0.01168   0.0    .493333
150532  0      0.01168   0.0    .493333
150542  0      0.01168   0.0    .246667
*
150552  0      0.01168   0.0    .246667
150562  0      0.01168   0.0    .493333
150572  0      0.01168   0.0    .493333
150582  0      0.01168   0.0    .493333
150592  0      0.01168   0.0    .246667
150602  0      0.01168   0.0    .493333
150612  0      0.01168   0.0    .493333
150622  0      0.01168   0.0    .493333
150632  0      0.01168   0.0    .246667
*
150642  0      0.01168   0.0    .246667
150652  0      0.01168   0.0    .493333
150662  0      0.01168   0.0    .493333
150672  0      0.01168   0.0    .493333
150682  0      0.01168   0.0    .246667
150692  0      0.01168   0.0    .493333
150702  0      0.01168   0.0    .493333
150712  0      0.01168   0.0    .493333
150722  0      0.01168   0.0    .246667
*
150732  0      0.01168   0.0    .246667
150742  0      0.01168   0.0    .493333
150752  0      0.01168   0.0    .493333
150762  0      0.01168   0.0    .493333
150772  0      0.01168   0.0    .246667
150782  0      0.01168   0.0    .493333
150792  0      0.01168   0.0    .493333
150802  0      0.01168   0.0    .493333
150812  0      0.01168   0.0    .246667
*  CORE SLAB DATA CARD
*     ISLB  ITOP  QPMOD
*  CHANNEL  1
160010   1    1    0.0104
160020   2    1    0.0104
160030   3    1    0.0104
160040   4    1    0.0104
160050   5    1    0.0104
160060   6    1    0.0104
160070   7    1    0.0104
160080   8    1    0.0104
160090   9    1    0.0104
*  CHANNEL  2
160100  10    1    0.0104
160110  11    1    0.0104
160120  12    1    0.0104
160130  13    1    0.0104
160140  14    1    0.0104
160150  15    1    0.0104
160160  16    1    0.0104
160170  17    1    0.0104
160180  18    1    0.0104
*  CHANNEL  3
160190  19    1    0.0104
160200  20    1    0.0104
160210  21    1    0.0104
160220  22    1    0.0104
160230  23    1    0.0104
160240  24    1    0.0104
160250  25    1    0.0104
160260  26    1    0.0104
160270  27    1    0.0104
*  CHANNEL  4
160280  28    1    0.0104
160290  29    1    0.0104
160300  30    1    0.0104
160310  31    1    0.0104
```

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160320 32   1   0.0104
160330 33   1   0.0104
160340 34   1   0.0104
160350 35   1   0.0104
160360 36   1   0.0104
* CHANNEL 5
160370 37   1   0.0104
160380 38   1   0.0104
160390 39   1   0.0104
160400 40   1   0.0104
160410 41   1   0.0104
160420 42   1   0.0104
160430 43   1   0.0104
160440 44   1   0.0104
160450 45   1   0.0104
* CHANNEL 6
160460 46   1   0.0104
160470 47   1   0.0104
160480 48   1   0.0104
160490 49   1   0.0104
160500 50   1   0.0104
160510 51   1   0.0104
160520 52   1   0.0104
160530 53   1   0.0104
160540 54   1   0.0104
* CHANNEL 7
160550 55   1   0.0104
160560 56   1   0.0104
160570 57   1   0.0104
160580 58   1   0.0104
160590 59   1   0.0104
160600 60   1   0.0104
160610 61   1   0.0104
160620 62   1   0.0104
160630 63   1   0.0104
* CHANNEL 8
160640 64   1   0.0104
160650 65   1   0.0104
160660 66   1   0.0104
160670 67   1   0.0104
160680 68   1   0.0104
160690 69   1   0.0104
160700 70   1   0.0104
160710 71   1   0.0104
160720 72   1   0.0104
* CHANNEL 9
160730 73   1   0.0104
160740 74   1   0.0104
160750 75   1   0.0104
160760 76   1   0.0104
160770 77   1   0.0104
160780 78   1   0.0104
160790 79   1   0.0104
160800 80   1   0.0104
160810 81   1   0.0104
* SLAB GEOMETRY DATA CARD
*       IG (GAP) NR IN NDX  XO  XR        PF   GAPCON   THS    FRAD  FGAS
170101  2        3  1  10  0.  0.00620  -1.0
170102      1       2   1      0.00015  -1.0   320.0  5000.0  1.0   0.0
170103      0       3   2      0.00090  -1.0
*
170201  2        3  1  10  0.  0.00620  -1.0
170202      1       2   1      0.00015  -1.0  1900.0  5000.0  1.0   0.0
170203      0       3   2      0.00090  -1.0
*
170301  2        3  1  10  0.  0.00620  -1.0
170302      1       2   1      0.00015  -1.0  1900.0  5000.0  1.0   0.0
170303      0       3   2      0.00090  -1.0
*
170401  2        3  1  10  0.  0.00620  -1.0
170402      1       2   1      0.00015  -1.0  1900.0  5000.0  1.0   0.0
170403      0       3   2      0.00090  -1.0
*
170501  2        3  1  10  0.  0.00620  -1.0
170502      1       2   1      0.00015  -1.0  1900.0  5000.0  1.0   0.0
170503      0       3   2      0.00090  -1.0
*
170601  2        3  1  10  0.  0.00620  -1.0
170602      1       2   1      0.00015  -1.0  1900.0  5000.0  1.0   0.0
170603      0       3   2      0.00090  -1.0
```

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*
170701  2       3  1  10  0.  0.00620  -1.0
170702      1       2   1      0.00015  -1.0  1900.0  5000.0  1.0   0.0
170703      0       3   2      0.00090  -1.0
*
170801  2       3  1  10  0.  0.00620  -1.0
170802      1       2   1      0.00015  -1.0  1900.0  5000.0  1.0   0.0
170803      0       3   2      0.00090  -1.0
*
170901  2       3  1  10  0.  0.00620  -1.0
170902      1       2   1      0.00015  -1.0  1900.0  5000.0  1.0   0.0
170903      0       3   2      0.00090  -1.0
*  THERMAL CONDUCTIVITY
*       NPT  (TEMP * CONDUCTIVITY)
*  FUEL          T       K        T       K        T       K
180100  -18       0.0    8.174    200.0   5.465    400.0   4.115
180101           500.0   3.669    600.0   3.316    700.0   3.032
180102           800.0   2.800    900.0   2.610   1000.0   2.454
180103          1200.0   2.221   1400.0   2.071   1600.0   1.988
180104          1800.0   1.962   2000.0   1.988   2200.0   2.060
180105          2400.0   2.180   2600.0   2.345   2800.0   2.556
*  CLAD          T       K        T       K        T       K
180300  -20       0.0    11.10     50.0   11.46    100.0   11.85
180301           150.0   12.26    200.0   12.70    250.0   13.16
180302           300.0   13.65    350.0   14.15    400.0   14.69
180303           450.0   15.25    500.0   15.83    550.0   16.44
180304           600.0   17.07    650.0   17.72    700.0   18.41
180305           800.0   19.84    900.0   21.73   1000.0   23.00
180306         -1200.0   26.55   1500.0   32.61
*  VOLUMETRIC HEAT CAPACITY
*
*  FUEL          T     ROUCP      T      ROUCP     T       ROUCP
190100  -18       0.0   587.22     200.0  726.58    400.0   773.94
190101           500.0  786.91     600.0  797.56    700.0   805.82
190102           800.0  812.87     900.0  818.63   1000.0   824.17
190103          1200.0  836.96    1400.0  857.28   1600.0   892.32
190104          1800.0  950.78    2000.0 1040.09   2200.0  1162.02
190105          2400.0 1317.43    2600.0 1502.58   2800.0  1713.45
*  CLAD          T       CP       T       CP       T       CP
190300  -20       0.0    438.85     50.0   453.26    100.0   466.36
190301           150.0   478.81    200.0   491.25    250.0   502.39
190302           300.0   512.87    350.0   522.69    400.0   531.86
190303           450.0   540.38    500.0   548.24    550.0   554.79
190304           600.0   561.34    650.0   567.23    700.0   573.78
190305           800.0   579.68    900.0   584.26   1000.0   589.50
190306          1200.0   581.64   1500.0   553.48
*  LINEAR EXPANSION
*  FUEL          T      EXP       T      EXP       T      EXP
200100  -20       100.0  0.0       200.0  0.0       300.0  0.0
200101            400.0  0.0       500.0  0.0       600.0  0.0
200102            700.0  0.0       800.0  0.0       900.0  0.0
200103           1000.0  0.0      1100.0  0.0      1200.0  0.0
200104           1300.0  0.0      1400.0  0.0      1500.0  0.0
200105           1600.0  0.0      1700.0  0.0      1800.0  0.0
200106           1900.0  0.0      2000.0  0.0
*  CLAD
200300   -20      100.0  0.0       200.0  0.0       300.0  0.0
200301            400.0  0.0       500.0  0.0       600.0  0.0
200302            700.0  0.0       800.0  0.0       900.0  0.0
200303           1000.0  0.0      1100.0  0.0      1200.0  0.0
200304           1300.0  0.0      1400.0  0.0      1500.0  0.0
200305           1600.0  0.0      1700.0  0.0      1800.0  0.0
200306           1900.0  0.0      2000.0  0.0
*  RADIAL POWER DISTRIBUTION
220101  0.932  0.932  0.932  0.932  0.932
220102  0.938  0.946  0.960  0.988  1.036
220103  1.135
*
220201  0.0
*
220301  0.0  0.0
*       FEMIS   CEMIS   ROUGH
300001   0.7     0.7    0.00005
300002   0.7     0.7    0.00005
300003   0.7     0.7    0.00005
300004   0.7     0.7    0.00005
300005   0.7     0.7    0.00005
300006   0.7     0.7    0.00005
300007   0.7     0.7    0.00005
300008   0.7     0.7    0.00005
```

```
300009  0.7     0.7     0.00005
*       POINT   TEMP    STEP    TEMP    STEP
310100    2     100.0   0.0001  1500.0  0.00015
310200    2     100.0   0.0001  1500.0  0.00015
310300    2     100.0   0.0001  1500.0  0.00015
310400    2     100.0   0.0001  1500.0  0.00015
310500    2     100.0   0.0001  1500.0  0.00015
310600    2     100.0   0.0001  1500.0  0.00015
310700    2     100.0   0.0001  1500.0  0.00015
310800    2     100.0   0.0001  1500.0  0.00015
310900    2     100.0   0.0001  1500.0  0.00015
*       POINT   TGAS    CGAS    TGAS    CGAS
320100    2     100.0   0.7     1500.0  0.7
320200    2     100.0   0.7     1500.0  0.8
320300    2     100.0   0.8     1500.0  0.9
320400    2     100.0   0.7     1500.0  0.8
320500    2     100.0   0.8     1500.0  0.9
320600    2     100.0   0.7     1500.0  0.7
320700    2     100.0   0.7     1500.0  0.8
320800    2     100.0   0.8     1500.0  0.9
320900    2     100.0   0.7     1500.0  0.8
*  MATERIAL  DENSITY
*       FDENS   CDENS
400000  10966.0  6550.0
*     IOPTH     NCH     THIN
500000  -1        9      18.0
*         VOLH    ROHH    PNH    TEMP     GH
*500011   5.761  1096.0    0.012  57.0   110.23
*500021  31.018  1096.0    0.012  57.0   593.52
*500031  37.399  1096.0    0.012  57.0   715.62
*500041 102.139  1096.0    0.012  57.0  1954.39
*500051  60.419  1096.0    0.012  57.0  1156.10
*500061   5.761  1096.0    0.012  57.0   110.23
*500071  31.018  1096.0    0.012  57.0   593.52
*500081  37.399  1096.0    0.012  57.0   715.62
*500091 102.139  1096.0    0.012  57.0  1954.39
*  COMPENSATED REACTIVITY DUE TO COOLANT EFFECT
*       NPT
*501000   0       0.0     0.0
*501001          300.0   -1.2E-2
*       NPT
*502000  -3       40.0    1.001
*502001           60.0    0.999
*502002           80.0    0.998
*  FOR CPR CALCULATION DATA
*      IOPTC  SUMMARY  2D-MAP  DIST.
600000   1       1       0       0
*
*     IFTYPE IFCHF
600001   4      1
*
*       XTH   TLPF  TLPF2 TLPF3 EGD   EGD2  DPT
610000   0.4   1.14  1.14  1.14  1.0   1.0   118.56
*
*FHL
611110   1.000     0.0       0.0       0.0
611120   1.000     0.0       0.0       0.0
611130   1.000     0.0       0.0       0.0
611140   1.000     0.0       0.0       0.0
*
611210   1.000     0.0       0.0       0.0
611220   1.000     0.0       0.0       0.0
611230   1.000     0.0       0.0       0.0
611240   1.000     0.0       0.0       0.0
*
*FI
612000   1.0   1.0   1.0   1.0
*
*NFTYPE  IN  MID  OUT
620010   6    12    18
620020   6    12    18
620030   6    12    18
620040   6    12    18
*
*RFTYPE  IN    MID   OUT
621010   0.725 0.725 0.725
621020   0.725 0.725 0.725
621030   0.725 0.725 0.725
621040   0.725 0.725 0.725
*
```

```
1041  *CLPF1   1          2          3                                    1041
1042  630111   0.5857     0.9580     1.1750                               1042
1043  630112   0.5857     0.9580     1.1750                               1043
1044  630113   0.5857     0.9580     1.1750                               1044
1045  630121   0.5658     0.9288     1.2010                               1045
1046  630122   0.5658     0.9288     1.2010                               1046
1047  630123   0.5658     0.9288     1.2010                               1047
1048  630131   0.5433     0.8401     1.2680                               1048
1049  630132   0.5433     0.8401     1.2680                               1049
1050  630133   0.5433     0.8401     1.2680                               1050
1051  630141   0.5360     0.8269     1.2780                               1051
1052  630142   0.5360     0.8269     1.2780                               1052
1053  630143   0.5360     0.8269     1.2780                               1053
1054  *                                                                   1054
1055  630211   3.732E-2   2.283E-2  -2.064E-2                             1055
1056  630212   3.732E-2   2.283E-2  -2.064E-2                             1056
1057  630213   3.732E-2   2.283E-2  -2.064E-2                             1057
1058  630221   3.367E-2   2.217E-2  -1.869E-2                             1058
1059  630222   3.367E-2   2.217E-2  -1.869E-2                             1059
1060  630223   3.367E-2   2.217E-2  -1.869E-2                             1060
1061  630231   3.677E-2   2.511E-2  -1.827E-2                             1061
1062  630232   3.677E-2   2.511E-2  -1.827E-2                             1062
1063  630233   3.677E-2   2.511E-2  -1.827E-2                             1063
1064  630241   3.460E-2   2.317E-2  -1.661E-2                             1064
1065  630242   3.460E-2   2.317E-2  -1.661E-2                             1065
1066  630243   3.460E-2   2.317E-2  -1.661E-2                             1066
1067  *                                                                   1067
1068  630311  -3.699E-4  -7.613E-4   5.539E-4                             1068
1069  630312  -3.699E-4  -7.613E-4   5.539E-4                             1069
1070  630313  -3.699E-4  -7.613E-4   5.539E-4                             1070
1071  630321  -3.546E-4  -5.007E-4   3.875E-4                             1071
1072  630322  -3.546E-4  -5.007E-4   3.875E-4                             1072
1073  630323  -3.546E-4  -5.007E-4   3.875E-4                             1073
1074  630331  -2.921E-4  -4.993E-4   3.364E-4                             1074
1075  630332  -2.921E-4  -4.993E-4   3.364E-4                             1075
1076  630333  -2.921E-4  -4.993E-4   3.364E-4                             1076
1077  630341  -4.470E-4  -2.988E-4   2.582E-4                             1077
1078  630342  -4.470E-4  -2.988E-4   2.582E-4                             1078
1079  630343  -4.470E-4  -2.988E-4   2.582E-4                             1079
1080  *                                                                   1080
1081  630411  -4.529E-7   6.197E-6  -4.126E-6                             1081
1082  630412  -4.529E-7   6.197E-6  -4.126E-6                             1082
1083  630413  -4.529E-7   6.197E-6  -4.126E-6                             1083
1084  630421   2.698E-6   1.560E-6  -1.974E-6                             1084
1085  630422   2.698E-6   1.560E-6  -1.974E-6                             1085
1086  630423   2.698E-6   1.560E-6  -1.974E-6                             1086
1087  630431  -1.985E-7   9.589E-7  -1.167E-6                             1087
1088  630432  -1.985E-7   9.589E-7  -1.167E-6                             1088
1089  630433  -1.985E-7   9.589E-7  -1.167E-6                             1089
1090  630441   5.139E-6  -1.622E-6  -6.918E-7                             1090
1091  630442   5.139E-6  -1.622E-6  -6.918E-7                             1091
1092  630443   5.139E-6  -1.622E-6  -6.918E-7                             1092
1093  *                                                                   1093
1094  630511   0.0        0.0        0.0                                  1094
1095  630512   0.0        0.0        0.0                                  1095
1096  630513   0.0        0.0        0.0                                  1096
1097  630521   0.0        0.0        0.0                                  1097
1098  630522   0.0        0.0        0.0                                  1098
1099  630523   0.0        0.0        0.0                                  1099
1100  630531   0.0        0.0        0.0                                  1100
1101  630532   0.0        0.0        0.0                                  1101
1102  630533   0.0        0.0        0.0                                  1102
1103  630541   0.0        0.0        0.0                                  1103
1104  630542   0.0        0.0        0.0                                  1104
1105  630543   0.0        0.0        0.0                                  1105
1106  *                                                                   1106
1107  630611   0.0        0.0        0.0                                  1107
1108  630612   0.0        0.0        0.0                                  1108
1109  630613   0.0        0.0        0.0                                  1109
1110  630621   0.0        0.0        0.0                                  1110
1111  630622   0.0        0.0        0.0                                  1111
1112  630623   0.0        0.0        0.0                                  1112
1113  630631   0.0        0.0        0.0                                  1113
1114  630632   0.0        0.0        0.0                                  1114
1115  630633   0.0        0.0        0.0                                  1115
1116  630641   0.0        0.0        0.0                                  1116
1117  630642   0.0        0.0        0.0                                  1117
1118  630643   0.0        0.0        0.0                                  1118
1119  *                                                                   1119
1120  630711   2.958E-3   8.381E-4  -1.470E-3                             1120
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1122	630713	2.958E-3	8.381E-4	-1.470E-3	1122
1123	630721	3.225E-3	9.081E-4	-1.502E-3	1123
1124	630722	3.225E-3	9.081E-4	-1.502E-3	1124
1125	630723	3.225E-3	9.081E-4	-1.502E-3	1125
1126	630731	3.223E-3	1.075E-3	-1.492E-3	1126
1127	630732	3.223E-3	1.075E-3	-1.492E-3	1127
1128	630733	3.223E-3	1.075E-3	-1.492E-3	1128
1129	630741	3.406E-3	1.080E-3	-1.465E-3	1129
1130	630742	3.406E-3	1.080E-3	-1.465E-3	1130
1131	630743	3.406E-3	1.080E-3	-1.465E-3	1131
1132	*				1132
1133	630811	-2.937E-2	2.057E-2	-4.435E-3	1133
1134	630812	-2.937E-2	2.057E-2	-4.435E-3	1134
1135	630813	-2.937E-2	2.057E-2	-4.435E-3	1135
1136	630821	-3.723E-2	2.091E-2	-2.847E-3	1136
1137	630822	-3.723E-2	2.091E-2	-2.847E-3	1137
1138	630823	-3.723E-2	2.091E-2	-2.847E-3	1138
1139	630831	-4.943E-2	8.348E-3	9.221E-3	1139
1140	630832	-4.943E-2	8.348E-3	9.221E-3	1140
1141	630833	-4.943E-2	8.348E-3	9.221E-3	1141
1142	630841	-5.600E-2	9.582E-3	9.414E-3	1142
1143	630842	-5.600E-2	9.582E-3	9.414E-3	1143
1144	630843	-5.600E-2	9.582E-3	9.414E-3	1144
1145	*				1145
1146	630911	1.623E-1	4.814E-2	-7.352E-2	1146
1147	630912	1.623E-1	4.814E-2	-7.352E-2	1147
1148	630913	1.623E-1	4.814E-2	-7.352E-2	1148
1149	630921	1.668E-1	5.227E-2	-7.347E-2	1149
1150	630922	1.668E-1	5.227E-2	-7.347E-2	1150
1151	630923	1.668E-1	5.227E-2	-7.347E-2	1151
1152	630931	1.689E-1	6.784E-2	-7.703E-2	1152
1153	630932	1.689E-1	6.784E-2	-7.703E-2	1153
1154	630933	1.689E-1	6.784E-2	-7.703E-2	1154
1155	630941	1.701E-1	6.950E-2	-7.524E-2	1155
1156	630942	1.701E-1	6.950E-2	-7.524E-2	1156
1157	630943	1.701E-1	6.950E-2	-7.524E-2	1157
1158	*				1158
1159	*CLPF2	1	2	3	1159
1160	631111	0.6219	1.0190	1.2480	1160
1161	631112	0.6219	1.0190	1.2480	1161
1162	631113	0.6219	1.0190	1.2480	1162
1163	631121	0.5975	0.9838	1.2710	1163
1164	631122	0.5975	0.9838	1.2710	1164
1165	631123	0.5975	0.9838	1.2710	1165
1166	631131	0.5835	0.9030	1.3590	1166
1167	631132	0.5835	0.9030	1.3590	1167
1168	631133	0.5835	0.9030	1.3590	1168
1169	631141	0.5723	0.8850	1.3670	1169
1170	631142	0.5723	0.8850	1.3670	1170
1171	631143	0.5723	0.8850	1.3670	1171
1172	*				1172
1173	631211	3.320E-2	1.200E-2	-2.616E-2	1173
1174	631212	3.320E-2	1.200E-2	-2.616E-2	1174
1175	631213	3.320E-2	1.200E-2	-2.616E-2	1175
1176	631221	3.582E-2	1.246E-2	-2.623E-2	1176
1177	631222	3.582E-2	1.246E-2	-2.623E-2	1177
1178	631223	3.582E-2	1.246E-2	-2.623E-2	1178
1179	631231	3.015E-2	1.418E-2	-1.979E-2	1179
1180	631232	3.015E-2	1.418E-2	-1.979E-2	1180
1181	631233	3.015E-2	1.418E-2	-1.979E-2	1181
1182	631241	3.577E-2	1.454E-2	-2.298E-2	1182
1183	631242	3.577E-2	1.454E-2	-2.298E-2	1183
1184	631243	3.577E-2	1.454E-2	-2.298E-2	1184
1185	*				1185
1186	631311	-3.469E-4	5.716E-4	9.114E-4	1186
1187	631312	-3.469E-4	5.716E-4	9.114E-4	1187
1188	631313	-3.469E-4	5.716E-4	9.114E-4	1188
1189	631321	-1.428E-3	7.749E-4	1.444E-3	1189
1190	631322	-1.428E-3	7.749E-4	1.444E-3	1190
1191	631323	-1.428E-3	7.749E-4	1.444E-3	1191
1192	631331	3.623E-4	8.791E-4	-7.515E-5	1192
1193	631332	3.623E-4	8.791E-4	-7.515E-5	1193
1194	631333	3.623E-4	8.791E-4	-7.515E-5	1194
1195	631341	-1.325E-3	7.371E-4	9.978E-4	1195
1196	631342	-1.325E-3	7.371E-4	9.978E-4	1196
1197	631343	-1.325E-3	7.371E-4	9.978E-4	1197
1198	*				1198
1199	631411	-2.426E-6	-7.358E-5	-1.352E-5	1199
1200	631412	-2.426E-6	-7.358E-5	-1.352E-5	1200

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1201  631413  -2.426E-6  -7.358E-5  -1.352E-5  1201
1202  631421   7.820E-5  -7.287E-5  -6.553E-5  1202
1203  631422   7.820E-5  -7.287E-5  -6.553E-5  1203
1204  631423   7.820E-5  -7.287E-5  -6.553E-5  1204
1205  631431  -4.959E-5  -8.357E-5   3.927E-5  1205
1206  631432  -4.959E-5  -8.357E-5   3.927E-5  1206
1207  631433  -4.959E-5  -8.357E-5   3.927E-5  1207
1208  631441   6.649E-5  -6.091E-5  -3.993E-5  1208
1209  631442   6.649E-5  -6.091E-5  -3.993E-5  1209
1210  631443   6.649E-5  -6.091E-5  -3.993E-5  1210
1211  *                                       1211
1212  631511   2.496E-7   2.099E-6   6.467E-8  1212
1213  631512   2.496E-7   2.099E-6   6.467E-8  1213
1214  631513   2.496E-7   2.099E-6   6.467E-8  1214
1215  631521  -1.939E-6   1.872E-6   1.671E-6  1215
1216  631522  -1.939E-6   1.872E-6   1.671E-6  1216
1217  631523  -1.939E-6   1.872E-6   1.671E-6  1217
1218  631531   1.602E-6   2.219E-6  -1.244E-6  1218
1219  631532   1.602E-6   2.219E-6  -1.244E-6  1219
1220  631533   1.602E-6   2.219E-6  -1.244E-6  1220
1221  631541  -1.521E-6   1.496E-6   9.506E-7  1221
1222  631542  -1.521E-6   1.496E-6   9.506E-7  1222
1223  631543  -1.521E-6   1.496E-6   9.506E-7  1223
1224  *                                       1224
1225  631611  -4.766E-9  -1.978E-8   4.279E-10 1225
1226  631612  -4.766E-9  -1.978E-8   4.279E-10 1226
1227  631613  -4.766E-9  -1.978E-8   4.279E-10 1227
1228  631621   1.642E-8  -1.688E-8  -1.590E-8  1228
1229  631622   1.642E-8  -1.688E-8  -1.590E-8  1229
1230  631623   1.642E-8  -1.688E-8  -1.590E-8  1230
1231  631631  -1.795E-8  -2.059E-8   1.245E-8  1231
1232  631632  -1.795E-8  -2.059E-8   1.245E-8  1232
1233  631633  -1.795E-8  -2.059E-8   1.245E-8  1233
1234  631641   1.211E-8  -1.370E-8  -8.589E-9  1234
1235  631642   1.211E-8  -1.370E-8  -8.589E-9  1235
1236  631643   1.211E-8  -1.370E-8  -8.589E-9  1236
1237  *                                       1237
1238  631711   3.144E-3   7.536E-4  -1.512E-3  1238
1239  631712   3.144E-3   7.536E-4  -1.512E-3  1239
1240  631713   3.144E-3   7.536E-4  -1.512E-3  1240
1241  631721   3.506E-3   8.341E-4  -1.549E-3  1241
1242  631722   3.506E-3   8.341E-4  -1.549E-3  1242
1243  631723   3.506E-3   8.341E-4  -1.549E-3  1243
1244  631731   3.346E-3   9.568E-4  -1.438E-3  1244
1245  631732   3.346E-3   9.568E-4  -1.438E-3  1245
1246  631733   3.346E-3   9.568E-4  -1.438E-3  1246
1247  631741   3.682E-3   1.048E-3  -1.502E-3  1247
1248  631742   3.682E-3   1.048E-3  -1.502E-3  1248
1249  631743   3.682E-3   1.048E-3  -1.502E-3  1249
1250  *                                       1250
1251  631811  -3.473E-2   2.249E-2  -4.233E-3  1251
1252  631812  -3.473E-2   2.249E-2  -4.233E-3  1252
1253  631813  -3.473E-2   2.249E-2  -4.233E-3  1253
1254  631821  -4.454E-2   2.281E-2  -2.017E-3  1254
1255  631822  -4.454E-2   2.281E-2  -2.017E-3  1255
1256  631823  -4.454E-2   2.281E-2  -2.017E-3  1256
1257  631831  -5.386E-2   1.043E-2   6.185E-3  1257
1258  631832  -5.386E-2   1.043E-2   6.185E-3  1258
1259  631833  -5.386E-2   1.043E-2   6.185E-3  1259
1260  631841  -6.362E-2   9.858E-3   9.160E-3  1260
1261  631842  -6.362E-2   9.858E-3   9.160E-3  1261
1262  631843  -6.362E-2   9.858E-3   9.160E-3  1262
1263  *                                       1263
1264  631911   1.674E-1   4.760E-2  -7.105E-2  1264
1265  631912   1.674E-1   4.760E-2  -7.105E-2  1265
1266  631913   1.674E-1   4.760E-2  -7.105E-2  1266
1267  631921   1.757E-1   5.205E-2  -7.138E-2  1267
1268  631922   1.757E-1   5.205E-2  -7.138E-2  1268
1269  631923   1.757E-1   5.205E-2  -7.138E-2  1269
1270  631931   1.731E-1   6.748E-2  -6.973E-2  1270
1271  631932   1.731E-1   6.748E-2  -6.973E-2  1271
1272  631933   1.731E-1   6.748E-2  -6.973E-2  1272
1273  631941   1.799E-1   7.189E-2  -7.101E-2  1273
1274  631942   1.799E-1   7.189E-2  -7.101E-2  1274
1275  631943   1.799E-1   7.189E-2  -7.101E-2  1275
1276  *                                       1276
1277  *CFSP                                   1277
1278  632010   1.640     -3.152E-2   3.087E-4  1278
1279  632020   1.640     -3.152E-2   3.087E-4  1279
1280  632030   1.640     -3.152E-2   3.087E-4  1280
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1281  632040  1.640     -3.152E-2  3.087E-4                                  1281
1282  *                                                                      1282
1283  *CFLP                                                                  1283
1284  633110 -10.3      -10.3      -10.3      665.5      -10.3      -10.3    1284
1285  633120 -10.3      -10.3      -10.3      665.5      -10.3      -10.3    1285
1286  633130 -10.3      -10.3      -10.3      665.5      -10.3      -10.3    1286
1287  633140 -10.3      -10.3      -10.3      665.5      -10.3      -10.3    1287
1288  *                                                                      1288
1289  633210  19.20      19.20      19.20     -1708.5     19.2     19.2      1289
1290  633220  19.20      19.20      19.20     -1708.5     19.2     19.2      1290
1291  633230  19.20      19.20      19.20     -1708.5     19.2     19.2      1291
1292  633240  19.20      19.20      19.20     -1708.5     19.2     19.2      1292
1293  *                                                                      1293
1294  633310 -8.128     -8.128     -8.128     1463.8     -8.128    -8.128    1294
1295  633320 -8.128     -8.128     -8.128     1463.8     -8.128    -8.128    1295
1296  633330 -8.128     -8.128     -8.128     1463.8     -8.128    -8.128    1296
1297  633340 -8.128     -8.128     -8.128     1463.8     -8.128    -8.128    1297
1298  *                                                                      1298
1299  633410  0.0        0.0        0.0       -417.9      0.0       0.0      1299
1300  633420  0.0        0.0        0.0       -417.9      0.0       0.0      1300
1301  633430  0.0        0.0        0.0       -417.9      0.0       0.0      1301
1302  633440  0.0        0.0        0.0       -417.9      0.0       0.0      1302
1303  *                                                                      1303
1304  *CFP                                                                   1304
1305  634010  0.687      1.260E-2  -1.162E-4                                 1305
1306  634020  0.687      1.260E-2  -1.162E-4                                 1306
1307  634030  0.687      1.260E-2  -1.162E-4                                 1307
1308  634040  0.687      1.260E-2  -1.162E-4                                 1308
1309  *                                                                      1309
1310  *CFSG                                                                  1310
1311  635010  1.013     -0.1293    0.01986                                   1311
1312  635020  1.013     -0.1293    0.01986                                   1312
1313  635030  1.013     -0.1293    0.01986                                   1313
1314  635040  1.013     -0.1293    0.01986                                   1314
1315  *                                                                      1315
1316  *CFSUB                                                                 1316
1317  636010  0.991     -0.313     0.0                                       1317
1318  636020  0.991     -0.313     0.0                                       1318
1319  636030  0.991     -0.313     0.0                                       1319
1320  636040  0.991     -0.313     0.0                                       1320
1321  *                                                                      1321
1322  *CFD                                                                   1322
1323  637010  5.822      0.8519E-3 -0.3547E-3                                1323
1324  637020  5.822      0.8519E-3 -0.3547E-3                                1324
1325  637030  5.822      0.8519E-3 -0.3547E-3                                1325
1326  637040  5.822      0.8519E-3 -0.3547E-3                                1326
1327  *                                                                      1327
1328  *CSA                                                                   1328
1329  639110  2.580     -4.509     2.071                                     1329
1330  639120  2.580     -4.509     2.071                                     1330
1331  639130  2.580     -4.509     2.071                                     1331
1332  639140  2.580     -4.509     2.071                                     1332
1333  *                                                                      1333
1334  639210  2.341     -3.737     1.631                                     1334
1335  639220  2.341     -3.737     1.631                                     1335
1336  639230  2.341     -3.737     1.631                                     1336
1337  639240  2.341     -3.737     1.631                                     1337
1338  *                                                                      1338
1339  *PSG    1      2      3      4                                         1339
1340  640000  0.88   0.88   0.88   0.88                                      1340
1341  *                                                                      1341
1342  *APERV  1      2      3      4                                         1342
1343  641000  28.47  28.47  28.47  28.47                                     1343
1344  *                                                                      1344
1345  *IGD    1      2      3      4                                         1345
1346  642000  1      1      1      1                                         1346
1347  *                                                                      1347
1348  *SPITCH 1/10   2/11   3/12   4/13   5/14   6/15   7/16   8/17   9/18  1348
1349  643010  320.0 -320.0  260.0  260.0  260.0  260.0  260.0  260.0  260.0 1349
1350  643011  280.0  360.0  460.0  460.0  445.0  445.0                      1350
1351  643020  320.0  320.0  260.0  260.0  260.0  260.0  260.0  260.0  260.0 1351
1352  643021  280.0  360.0  460.0  460.0  445.0  445.0                      1352
1353  643030  320.0  320.0  260.0  260.0  260.0  260.0  260.0  260.0  260.0 1353
1354  643031  280.0  360.0  460.0  460.0  445.0  445.0                      1354
1355  643040  320.0  320.0  260.0  260.0  260.0  260.0  260.0  260.0  260.0 1355
1356  643041  280.0  360.0  460.0  460.0  445.0  445.0                      1356
1357  *                                                                      1357
1358  *INVOL   1    2    3    4    5    6    7    8    9                    1358
1359  644000  102  100  100  100  100  102  102  102  102                   1359
1360  *JCPR    1    2    3    4    5    6    7    8    9                    1360
```

```
650000   13    15    18    21    26
*JLHGR    1     2     3     4     5     6     7     8     9
651000   13    15    18    21    26
*  TIME DEPENDENT VOLUME CARD
*       (CONSTANT CONDITION)
*      IRIN TIME PTABL   TTABL    XTABL        ZTABL
801000   0
*
.
MODEL       7   200  100   1            *  NO RESTART
EBCR        0.02967  0.02053            *  RADIAL BOUDARY CONST.
EBCAU       0.05059  0.03503            *  TOP BOUDARY CONST. 0.66
EBCAL       0.22608  0.15655            *  BOTTOM BOUDARY CONST. 1.8
PROTECT     1      0                    *  CHECK PRINT OPTION ADDED
OPTION      0   0
INITIAL     6.85  20.0   0.0
FIGURE      9   9
AXFUEL(1)  2 2 2 1 1 1 1 1 1 1 1 1 2 2 2
AXFUEL(2)  4 4 4 3 3 3 3 3 3 3 3 3 4 4 4
TYPNAME     4
         INNER RELOAD FUEL  LOW-PU(F)
         INNER RELOAD FUEL   HI-PU(F)
         OUTER RELOAD FUEL  LOW-PU(F)
         OUTER RELOAD FUEL   HI-PU(F)
FUELALOC( 1, 1)                 0  0  0  0  0  0  0  0  0  0 *
                  2  2  2  2  2  2  0  0  0  0  0  0  0  0  0  0
FUELALOC( 2, 1)                 0  0  0  0  0  0  0  2  2  2  2 *
               2  2  2  2  2  2  2  2  2  2  2  0  0  0  0  0  0
FUELALOC( 3, 1)                 0  0  0  0  0  0  2  2  2  2  2 *
               2  2  2  2  2  2  2  2  2  2  2  0  0  0  0  0  0
FUELALOC( 4, 1)                 0  0  0  0  0  2  2  2  2  2  2 *
               2  2  2  2  2  2  2  2  2  2  2  2  0  0  0  0  0
FUELALOC( 5, 1)                 0  0  0  0  2  2  2  2  2  2  2 *
            1  1  1  1  1  1  1  2  2  2  2  2  2  0  0  0  0
FUELALOC( 6, 1)                 0  0  0  2  2  2  2  2  2  1  1 *
            1  1  1  1  1  1  1  1  1  2  2  2  2  2  2  0  0  0
FUELALOC( 7, 1)                 0  0  2  2  2  2  2  2  1  1  1 *
            1  1  1  1  1  1  1  1  1  1  2  2  2  2  2  2  0  0
FUELALOC( 8, 1)                 0  2  2  2  2  2  2  1  1  1  1 *
            1  1  1  1  1  1  1  1  1  1  1  2  2  2  2  2  2  0
FUELALOC( 9, 1)                 0  2  2  2  2  2  1  1  1  1  1 *
            1  1  1  1  1  1  1  1  1  1  1  1  2  2  2  2  2  0
FUELALOC(10, 1)                 0  2  2  2  2  1  1  1  1  1  1 *
            1  1  1  1  1  1  1  1  1  1  1  1  1  2  2  2  2  0
FUELALOC(11, 1)                 0  2  2  2  2  1  1  1  1  1  1 *
            1  1  1  1  1  1  1  1  1  1  1  1  1  1  2  2  2  0
FUELALOC(12, 1)                 2  2  2  2  1  1  1  1  1  1  1 *
            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  2  2  2
FUELALOC(13, 1)                 2  2  2  2  1  1  1  1  1  1  1 *
            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  2  2
FUELALOC(14, 1)                 2  2  2  2  1  1  1  1  1  1  1 *
            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  2  2  2
FUELALOC(15, 1)                 2  2  2  2  1  1  1  1  1  1  1 *
            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  2  2  2
FUELALOC(16, 1)                 2  2  2  2  1  1  1  1  1  1  1 *
            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  2  2  2
FUELALOC(17, 1)                 2  2  2  2  1  1  1  1  1  1  1 *
            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  2  2  2
FUELALOC(18, 1)                 0  2  2  2  2  1  1  1  1  1  1 *
            1  1  1  1  1  1  1  1  1  1  1  1  1  1  2  2  2  0
FUELALOC(19, 1)                 0  2  2  2  2  1  1  1  1  1  1 *
            1  1  1  1  1  1  1  1  1  1  1  1  1  1  2  2  2  0
FUELALOC(20, 1)                 0  2  2  2  2  2  1  1  1  1  1 *
            1  1  1  1  1  1  1  1  1  1  1  1  1  1  2  2  2  0
FUELALOC(21, 1)                 0  2  2  2  2  2  2  1  1  1  1 *
            1  1  1  1  1  1  1  1  1  1  1  1  1  2  2  2  2  0
FUELALOC(22, 1)                 0  0  2  2  2  2  2  2  1  1  1 *
            1  1  1  1  1  1  1  1  1  2  2  2  2  2  2  0  0
FUELALOC(23, 1)                 0  0  0  2  2  2  2  2  2  1  1 *
            1  1  1  1  1  1  1  1  1  2  2  2  2  2  2  0  0  0
FUELALOC(24, 1)                 0  0  0  0  2  2  2  2  2  2  2 *
            1  1  1  1  1  1  1  2  2  2  2  2  2  2  0  0  0  0
FUELALOC(25, 1)                 0  0  0  0  0  2  2  2  2  2  2 *
            2  2  2  2  2  2  2  2  2  2  2  2  2  0  0  0  0  0
FUELALOC(26, 1)                 0  0  0  0  0  0  2  2  2  2  2 *
            2  2  2  2  2  2  2  2  2  2  2  2  2  2  0  0  0  0
FUELALOC(27, 1)                 0  0  0  0  0  0  0  2  2  2  2 *
            2  2  2  2  2  2  2  2  2  2  2  2  2  2  2  0  0  0
FUELALOC(28, 1)                 0  0  0  0  0  0  0  0  0  0  0 *
            2  2  2  2  2  2  2  0  0  0  0  0  0  0  0  0  0  0
```

```
1441  RODPOSITION (1,50) (2,50) (3,100) (4,0) (5,0) (6,50) (7,0) ¥                1441
1442              (8,0)  (9,0)  (10,0)  (11,0) (12,50) (13,50) ¥                 1442
1443              (14,0) (15,100) (16,0) (17,100) (18,0) (20,0) ¥                1443
1444              (21,0) (22,0) (23,0) (24,50) (25,100) (26,0) ¥                 1444
1445              (27,0) (28,50) (29,0) (30,0) (31,0) (32,0) ¥                   1445
1446              (33,0) (34,50) (35,50) (36,0) (37,100) (38,0) ¥                1446
1447              (39,100) (40,0) (42,0) (43,0) (44,0) (45,0) ¥                  1447
1448              (46,50) (47,100) (48,0) (49,0) (50,50) (51,0) ¥                1448
1449              (52,0) (53,0) (54,0) (55,0) (56,50) (57,50) ¥                  1449
1450              (58,0) (59,100) (60,0) (61,100) (62,0) (64,0) ¥                1450
1451              (65,0) (66,0) (67,0) (68,50) (69,100) (70,0) ¥                 1451
1452              (71,0) (72,50) (73,0) (74,0) (75,0) (76,0) ¥                   1452
1453              (77,0) (78,50) (79,50) (80,0) (81,100) (82,0) ¥                1453
1454              (83,100) (84,0) (86,0) (87,0) (88,0) (89,0)                    1454
1455  RODOUT(0)    1.0  1.0                                                      1455
1456  RODOUT(19)   (0,100) (5.0,100) (66.7,0) (80,0) (1000,0)                    1456
1457  RODOUT(41)   (0,100) (5.0,100) (66.7,0) (80,0) (1000,0)                    1457
1458  RODOUT(63)   (0,100) (5.0,100) (66.7,0) (80,0) (1000,0)                    1458
1459  RODOUT(85)   (0,100) (5.0,100) (66.7,0) (80,0) (1000,0)                    1459
1460  SPACECOND(1)   0.49 0.99 1.99 4.99 9.99 14.99 19.99 24.99 29.99 ¥          1460
1461                 34.99                                                      1461
1462  SPACECOND(2)   300    10.0   0.1                                          1462
1463  SPACECOND(3)   0.5     1.0   1.5   2.0   2.5                             1463
1464  HALFUNC        1   1   1   1   1   1   0   0   1   1                     1464
1465  DELAYTIME      0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.5 0.0 0.0                   1465
1466  SUNBYPASS      0  0  0  0  0  0  0  0                                     1466
1467  SRNMPOS        (11,27,9,1) (15,11,9,1) (3,11,9,2) (19,15,9,2) ¥           1467
1468                 (15,19,9,3) (19,3,9,3) (11,15,9,4) (27,19,9,4)             1468
1469  PERDGA(1)     -5  3                                                       1469
1470  PERDGA(2)      5  3                                                       1470
1471  PERDGA(3)      5  3                                                       1471
1472  PERDGA(4)      5  3                                                       1472
1473  PERDRC(1)      40 40                                                      1473
1474  PERDRC(2)      40 40                                                      1474
1475  PERDRC(3)      40 40                                                      1475
1476  PERDRC(4)      40 40                                                      1476
1477  SCRHLN        0.00193                                                     1477
1478  SCRHAN(1)      0.0     0.0     0.0     0.0                               1478
1479  SCRHAN(2)      0.0     0.0     0.0     0.0                               1479
1480  SCRHAN(3)      0.0     0.0     0.0     0.0                               1480
1483  SCRHBN(2)    1500000000000.0  1000.0  1000.0  1000.0                     1483
1484  SCRHBN(3)    1500000000000.0  1000.0  1000.0  1000.0                     1484
1485  SCRHBN(4)    1500000000000.0  1000.0  1000.0  1000.0                     1485
1486  SCRHAL(1)      0.0                                                       1486
1487  SCRHAL(2)      0.0                                                       1487
1488  SCRHAL(3)      0.0                                                       1488
1489  SCRHAL(4)      0.0                                                       1489
1490  HFDELAY        6.0                                                       1490
1491  LPHHIGHT       1.875   5.625   9.375   13.125                            1491
1492  CHCORRES( 1, 1)   0  0  0  0  0  0  0  0  0  0  0  4  4  4               1492
1493  CHCORRES( 2, 1)   0  0  0  0  0  0  0  4  4  4  4  4  4  4               1493
1494  CHCORRES( 3, 1)   0  0  0  0  0  0  0  4  4  4  4  4  4  4               1494
1495  CHCORRES( 4, 1)   0  0  0  0  0  0  4  4  4  4  4  4  4  4               1495
1496  CHCORRES( 5, 1)   0  0  0  0  4  4  4  4  4  4  4  5  5  5               1496
1497  CHCORRES( 6, 1)   0  0  0  4  4  4  4  4  4  5  5  5  5  5               1497
1498  CHCORRES( 7, 1)   0  0  4  4  4  4  4  4  5  5  5  5  5  5               1498
1499  CHCORRES( 8, 1)   0  4  4  4  4  4  4  5  5  5  5  5  5  5               1499
1500  CHCORRES( 9, 1)   0  4  4  4  4  4  4  5  5  5  5  5  5  5               1500
1501  CHCORRES(10, 1)   0  4  4  4  4  5  5  5  5  5  5  5  5  5               1501
1502  CHCORRES(11, 1)   0  3  3  3  4  5  5  5  5  5  5  5  5  5               1502
1503  CHCORRES(12, 1)   3  2  2  3  5  5  5  5  5  5  5  5  5  5               1503
1504  CHCORRES(13, 1)   3  2  2  3  5  5  5  5  5  5  5  5  5  5               1504
1505  CHCORRES(14, 1)   3  3  3  3  5  5  5  5  5  5  5  5  5  5               1505
1506  CHCORRES(15, 1)   8  8  8  8  8  9  9  9  9  9  9  9  9  9               1506
1507  CHCORRES(16, 1)   8  8  8  8  9  9  9  9  9  9  9  9  9  9               1507
1508  CHCORRES(17, 1)   8  8  8  8  9  9  9  9  9  9  9  9  9  9               1508
1509  CHCORRES(18, 1)   0  8  8  8  8  9  9  9  9  9  9  9  9  9               1509
1510  CHCORRES(19, 1)   0  8  8  8  8  9  9  9  9  9  9  9  9  9               1510
1511  CHCORRES(20, 1)   0  8  8  8  8  8  9  9  9  9  9  9  9  9               1511
1512  CHCORRES(21, 1)   0  8  8  8  8  8  8  9  9  9  9  9  9  9               1512
1513  CHCORRES(22, 1)   0  0  8  8  8  8  8  8  9  9  9  9  9  9               1513
1514  CHCORRES(23, 1)   0  0  0  8  8  8  8  8  8  9  9  9  9  9               1514
1515  CHCORRES(24, 1)   0  0  0  0  8  8  8  8  8  8  8  9  9  9               1515
1516  CHCORRES(25, 1)   0  0  0  0  0  8  8  8  8  8  8  7  7  7               1516
1517  CHCORRES(26, 1)   0  0  0  0  0  0  8  8  8  8  8  7  6  6               1517
1518  CHCORRES(27, 1)   0  0  0  0  0  0  0  0  8  8  8  7  6  6               1518
1519  CHCORRES(28, 1)   0  0  0  0  0  0  0  0  0  0  0  0  7  7               1519
1520  CHCORRES( 1,15)   3  3  3  0  0  0  0  0  0  0  0  0  0  0               1520
```

```
 CHCORRES( 2,15)   3  2  2  3  4  4  4  0  0  0  0  0  0  0
 CHCORRES( 3,15)   3  2  2  3  4  4  4  4  0  0  0  0  0  0
 CHCORRES( 4,15)   3  3  3  3  4  4  4  4  4  0  0  0  0  0
 CHCORRES( 5,15)   5  5  5  4  4  4  4  4  4  4  0  0  0  0
 CHCORRES( 6,15)   5  5  5  5  5  4  4  4  4  4  4  0  0  0
 CHCORRES( 7,15)   5  5  5  5  5  5  4  4  4  4  4  4  0  0
 CHCORRES( 8,15)   5  5  5  5  5  5  5  4  4  4  4  4  4  0
 CHCORRES( 9,15)   5  5  5  5  5  5  5  5  4  4  4  4  4  0
 CHCORRES(10,15)   5  5  5  5  5  5  5  5  5  4  4  4  4  0
 CHCORRES(11,15)   5  5  5  5  5  5  5  5  5  5  4  4  4  0
 CHCORRES(12,15)   5  5  5  5  5  5  5  5  5  5  4  4  4  4
 CHCORRES(13,15)   5  5  5  5  5  5  5  5  5  5  4  4  4  4
 CHCORRES(14,15)   5  5  5  5  5  5  5  5  5  5  4  4  4  4
 CHCORRES(15,15)   9  9  9  9  9  9  9  9  9  9  1  7  7  7
 CHCORRES(16,15)   9  9  9  9  9  9  9  9  9  9  7  6  6  7
 CHCORRES(17,15)   9  9  9  9  9  9  9  9  9  9  7  6  6  7
 CHCORRES(18,15)   9  9  9  9  9  9  9  9  9  8  7  7  7  0
 CHCORRES(19,15)   9  9  9  9  9  9  9  9  9  8  8  8  8  0
 CHCORRES(20,15)   9  9  9  9  9  9  9  9  8  8  8  8  8  0
 CHCORRES(21,15)   9  9  9  9  9  9  9  8  8  8  8  8  8  0
 CHCORRES(22,15)   9  9  9  9  9  9  8  8  8  8  8  8  0  0
 CHCORRES(23,15)   9  9  9  9  9  8  8  8  8  8  8  0  0  0
 CHCORRES(24,15)   9  9  9  8  8  8  8  8  8  8  8  0  0  0
 CHCORRES(25,15)   8  8  8  8  8  8  8  8  8  0  0  0  0  0
 CHCORRES(26,15)   8  8  8  8  8  8  8  8  0  0  0  0  0  0
 CHCORRES(27,15)   8  8  8  8  8  8  8  0  0  0  0  0  0  0
 CHCORRES(28,15)   8  8  8  0  0  0  0  0  0  0  0  0  0  0
 EDIT(1) 1 0 0
 EDIT(2) 1 0 0
 EDIT(3) 1
 EDIT(4) 0 0 0 0 0 0 0
 AXBURNUP( 1,12, 1)  11930. 17390. 20130. 20180. 20490. 20570. 20480. ¥
                     20210. 20340. 20190. 19830. 19310. 19090. 16010. ¥
                      9830.
 AXBURNUP( 1,13, 1)   8960. 13170. 15310. 15320. 15550. 15600. 15500. ¥
                     15230. 15380. 15370. 15150. 14730. 14570. 12160. ¥
                      7400.
 AXBURNUP( 1,14, 1)   4650.  6910.  8090.  8050.  8170.  8190.  8130. ¥
                      7960.  8050.  8060.  7960.  7740.  7690.  6370. ¥
                      3830.
 AXBURNUP( 1,15, 1)      0.     0.     0.     0.     0.     0.     0. ¥
                         0.     0.     0.     0.     0.     0.     0. ¥
                         0.
 AXBURNUP( 1,16, 1)  13200. 19090. 22000. 22050. 22370. 22440. 22320. ¥
                     21990. 22150. 22080. 21750. 21180. 20940. 17640. ¥
                     10930.
 AXBURNUP( 1,17, 1)   8060. 11910. 13880. 13890. 14120. 14170. 14100. ¥
                     13880. 13980. 13870. 13610. 13220. 13080. 10890. ¥
                      6590.
 AXBURNUP( 2, 8, 1)   3760.  5610.  6590.  6550.  6650.  6690.  6660. ¥
                      6560.  6610.  6550.  6430.  6260.  6230.  5150. ¥
                      3090.
 AXBURNUP( 2, 9, 1)      0.     0.     0.     0.     0.     0.     0. ¥
                         0.     0.     0.     0.     0.     0.     0. ¥
                         0.
 AXBURNUP( 2,10, 1)  13760. 19840. 22840. 22890. 23220. 23290. 23180. ¥
                     22830. 23030. 23000. 22700. 22120. 21870. 18470. ¥
                     11490.
 AXBURNUP( 2,11, 1)   9790. 14310. 16580. 16600. 16840. 16880. 16780. ¥
                     16450. 16600. 16610. 16460. 16010. 15830. 13260. ¥
                      8130.
 AXBURNUP( 2,12, 1)   5230.  7740.  9040.  9000.  9130.  9150.  9080. ¥
                      8860.  8950.  8940.  8910.  8690.  8620.  7170. ¥
                      4340.
 AXBURNUP( 2,13, 1)      0.     0.     0.     0.     0.     0.     0. ¥
                         0.     0.     0.     0.     0.     0.     0. ¥
                         0.
 AXBURNUP( 2,14, 1)  16120. 22990. 26330. 26340. 26680. 26720. 26540. ¥
                     26050. 26190. 26160. 26020. 25430. 25160. 21360. ¥
                     13460.
 AXBURNUP( 2,15, 1)  10950. 15880. 18320. 18340. 18590. 18600. 18460. ¥
                     18060. 18160. 18110. 18040. 17630. 17420. 14660. ¥
                      9080.
 AXBURNUP( 2,16, 1)   5380.  7940.  9250.  9210.  9340.  9350.  9270. ¥
                      9040.  9110.  9080.  9060.  8840.  8770.  7310. ¥
                      4440.
 AXBURNUP( 2,17, 1)      0.     0.     0.     0.     0.     0.     0. ¥
                         0.     0.     0.     0.     0.     0.     0. ¥
                         0.
 AXBURNUP( 2,18, 1)  14540. 20900. 24030. 24080. 24420. 24480. 24350. ¥
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3361  AXBURNUP(27,15, 1)     0.     0.     0.     0.     0.     0.     0. ¥          3361
3362                         0.     0.     0.     0.     0.     0.     0. ¥          3362
3363                         0.                                                    3363
3364  AXBURNUP(27,16, 1) 15560. 22240. 25480. 25490. 25810. 25850. 25690. ¥          3364
3365                     25240. 25400. 25390. 25250. 24630. 24380. 20680. ¥          3365
3366                     13000.                                                    3366
3367  AXBURNUP(27,17, 1) 10130. 14750. 17050. 17060. 17290. 17320. 17200. ¥          3367
3368                     16850. 16990. 17000. 16910. 16470. 16300. 13690. ¥          3368
3369                      8430.                                                    3369
3370  AXBURNUP(27,18, 1)  5000.  7440.  8700.  8660.  8790.  8810.  8740. ¥          3370
3371                      8550.  8640.  8650.  8610.  8400.  8350.  6930. ¥          3371
3372                      4180.                                                    3372
3373  AXBURNUP(27,19, 1)     0.     0.     0.     0.     0.     0.     0. ¥          3373
3374                         0.     0.     0.     0.     0.     0.     0. ¥          3374
3375                         0.                                                    3375
3376  AXBURNUP(27,20, 1) 12630. 18280. 21080. 21120. 21430. 21510. 21420. ¥          3376
3377                     21140. 21310. 21200. 20870. 20340. 20120. 16960. ¥          3377
3378                     10500.                                                    3378
3379  AXBURNUP(27,21, 1)  3810.  5710.  6710.  6670.  6780.  6810.  6790. ¥          3379
3380                      6680.  6750.  6720.  6610.  6440.  6410.  5290. ¥          3380
3381                      3160.                                                    3381
3382  AXBURNUP(28,12, 1)  4030.  6020.  7070.  7030.  7140.  7160.  7120. ¥          3382
3383                      7000.  7070.  7020.  6890.  6700.  6660.  5510. ¥          3383
3384                      3310.                                                    3384
3385  AXBURNUP(28,13, 1)     0.     0.     0.     0.     0.     0.     0. ¥          3385
3386                         0.     0.     0.     0.     0.     0.     0. ¥          3386
3387                         0.                                                    3387
3388  AXBURNUP(28,14, 1) 13460. 19430. 22370. 22400. 22720. 22780. 22650. ¥          3388
3389                     22300. 22490. 22460. 22120. 21560. 21320. 17980. ¥          3389
3390                     11160.                                                    3390
3391  AXBURNUP(28,15, 1)  9180. 13470. 15630. 15640. 15870. 15910. 15800. ¥          3391
3392                     15510. 15660. 15690. 15480. 15060. 14910. 12460. ¥          3392
3393                      7600.                                                    3393
3394  AXBURNUP(28,16, 1)  4570.  6810.  7980.  7950.  8070.  8090.  8040. ¥          3394
3395                      7870.  7960.  7980.  7890.  7680.  7620.  6310. ¥          3395
3396                      3790.                                                    3396
3397  AXBURNUP(28,17, 1)     0.     0.     0.     0.     0.     0.     0. ¥          3397
3398                         0.     0.     0.     0.     0.     0.     0. ¥          3398
3399                         0.                                                    3399
3400  END DATA                                                                     3400
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付録2. EUREKA-ATRコードによるテストラン解析出力リスト
(1)BDBE基準ケース3次元解析(パス6)

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 EUREKA-ATR/MOD1          ( 1)                    THERMAL REACTOR CORE KINETICS CODE
       ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR
0 CPU TIME =  305.71
 STANDARD TIME STEP NUMBER   250.  ACTUAL TIME STEP NUMBER   269.  TIME = 0.250000E+02 SEC.  LAST DT =  0.100000E+00 SEC.
0
 TOTAL SYSTEM    NORM POWR     POWR          ENERGY        TOT. REAC     DOP. REAC     WAT-T REAC    VOID REAC     EXP. REAC     INSTD REAC
 QUANTITIES                    (MW)          (MWS)         (¥)           (¥)           (¥)           (¥)           (¥)           (¥)
                 8.67584E+00   1.65103E-07   1.19520E-06   4.54146E-01   5.65376E-04  -1.65978E-04   0.00000E+00   0.00000E+00   4.53747E-01
0 VOLUME         AVG. PRES     TOT. MASS     AVG. ENTH     AVG. DENS     AVG. TEMP     AVG. QUAL     LIQ. MASS
  NUMBER         (KG/CM**2A)   (KG) H2O      (KC/KG)       (KG/M3)       (C)                         (KG)
     1           3.19550E+00   1.17893E+00   2.00005E+01   9.98518E+02   1.99019E+01   0.00000E+00   1.17893E+00
     2           3.12598E+00   2.35885E+00   2.00004E+01   9.98515E+02   1.99033E+01   0.00000E+00   2.35885E+00
     3           3.01275E+00   2.35884E+00   2.00000E+01   9.98509E+02   1.99054E+01   0.00000E+00   2.35884E+00
     4           2.90823E+00   2.35883E+00   1.99999E+01   9.98504E+02   1.99076E+01   0.00000E+00   2.35883E+00
     5           2.81219E+00   1.17891E+00   1.99996E+01   9.98500E+02   1.99094E+01   0.00000E+00   1.17891E+00
     6           2.72485E+00   2.35881E+00   1.99999E+01   9.98495E+02   1.99117E+01   0.00000E+00   2.35881E+00
     7           2.60255E+00   2.35879E+00   1.99999E+01   9.98489E+02   1.99143E+01   0.00000E+00   2.35879E+00
     8           2.48013E+00   2.35878E+00   2.00000E+01   9.98483E+02   1.99172E+01   0.00000E+00   2.35878E+00
     9           2.40144E+00   1.17889E+00   1.99999E+01   9.98480E+02   1.99188E+01   0.00000E+00   1.17889E+00
    10           3.23125E+00   9.43346E+00   1.99979E+01   9.98520E+02   1.98985E+01   0.00000E+00   9.43346E+00
    11           3.14931E+00   1.88679E+01   1.99977E+01   9.98516E+02   1.99000E+01   0.00000E+00   1.88679E+01
    12           3.04007E+00   1.88678E+01   1.99970E+01   9.98511E+02   1.99018E+01   0.00000E+00   1.88678E+01
    13           2.93068E+00   1.88677E+01   1.99966E+01   9.98506E+02   1.99038E+01   0.00000E+00   1.88677E+01
    14           2.82860E+00   9.43328E+00   1.99961E+01   9.98501E+02   1.99055E+01   0.00000E+00   9.43328E+00
    15           2.74648E+00   1.88675E+01   1.99960E+01   9.98497E+02   1.99073E+01   0.00000E+00   1.88675E+01
    16           2.62692E+00   1.88674E+01   1.99957E+01   9.98491E+02   1.99096E+01   0.00000E+00   1.88674E+01
    17           2.49725E+00   1.88673E+01   1.99954E+01   9.98485E+02   1.99122E+01   0.00000E+00   1.88673E+01
    18           2.40493E+00   9.43309E+00   1.99951E+01   9.98481E+02   1.99139E+01   0.00000E+00   9.43309E+00
    19           3.23423E+00   2.59435E+01   1.99979E+01   9.98520E+02   1.98984E+01   0.00000E+00   2.59435E+01
    20           3.15225E+00   5.18859E+01   1.99976E+01   9.98517E+02   1.98999E+01   0.00000E+00   5.18859E+01
    21           3.04294E+00   5.18856E+01   1.99970E+01   9.98511E+02   1.99017E+01   0.00000E+00   5.18856E+01
    22           2.93352E+00   5.18853E+01   1.99966E+01   9.98506E+02   1.99037E+01   0.00000E+00   5.18853E+01
    23           2.83139E+00   2.59430E+01   1.99961E+01   9.98501E+02   1.99055E+01   0.00000E+00   2.59430E+01
    24           2.74924E+00   5.18849E+01   1.99959E+01   9.98497E+02   1.99071E+01   0.00000E+00   5.18849E+01
    25           2.62961E+00   5.18846E+01   1.99957E+01   9.98492E+02   1.99095E+01   0.00000E+00   5.18846E+01
    26           2.49985E+00   5.18842E+01   1.99955E+01   9.98485E+02   1.99122E+01   0.00000E+00   5.18842E+01
    27           2.40749E+00   2.59425E+01   1.99951E+01   9.98481E+02   1.99138E+01   0.00000E+00   2.59425E+01
    28           3.25230E+00   1.46225E+02   1.99975E+01   9.98521E+02   1.98976E+01   0.00000E+00   1.46225E+02
    29           3.16979E+00   2.92449E+02   1.99973E+01   9.98517E+02   1.98992E+01   0.00000E+00   2.92449E+02
    30           3.05978E+00   2.92447E+02   1.99967E+01   9.98512E+02   1.99010E+01   0.00000E+00   2.92447E+02
    31           2.94969E+00   2.92445E+02   1.99962E+01   9.98507E+02   1.99030E+01   0.00000E+00   2.92445E+02
    32           2.84696E+00   1.46222E+02   1.99957E+01   9.98502E+02   1.99047E+01   0.00000E+00   1.46222E+02
    33           2.75422E+00   2.92443E+02   1.99955E+01   9.98498E+02   1.99066E+01   0.00000E+00   2.92443E+02
    34           2.63381E+00   2.92441E+02   1.99952E+01   9.98492E+02   1.99090E+01   0.00000E+00   2.92441E+02
    35           2.50330E+00   2.92439E+02   1.99949E+01   9.98486E+02   1.99115E+01   0.00000E+00   2.92439E+02
    36           2.42041E+00   1.46219E+02   1.99946E+01   9.98482E+02   1.99131E+01   0.00000E+00   1.46219E+02
    37           3.20316E+00   1.81601E+02   1.99984E+01   9.98519E+02   1.98995E+01   0.00000E+00   1.81601E+02
    38           3.12157E+00   3.63201E+02   1.99981E+01   9.98515E+02   1.99011E+01   0.00000E+00   3.63201E+02
    39           3.01278E+00   3.63199E+02   1.99976E+01   9.98510E+02   1.99030E+01   0.00000E+00   3.63199E+02
    40           2.90388E+00   3.63198E+02   1.99973E+01   9.98505E+02   1.99050E+01   0.00000E+00   3.63198E+02
    41           2.80228E+00   1.81598E+02   1.99967E+01   9.98500E+02   1.99067E+01   0.00000E+00   1.81598E+02
    42           2.72053E+00   3.63194E+02   1.99967E+01   9.98496E+02   1.99085E+01   0.00000E+00   3.63194E+02
    43           2.59155E+00   3.63192E+02   1.99964E+01   9.98490E+02   1.99111E+01   0.00000E+00   3.63192E+02
    44           2.46247E+00   3.63190E+02   1.99964E+01   9.98483E+02   1.99139E+01   0.00000E+00   3.63190E+02
    45           2.38051E+00   1.81594E+02   1.99961E+01   9.98479E+02   1.99155E+01   0.00000E+00   1.81594E+02
    46           3.23136E+00   9.43346E+00   1.99979E+01   9.98520E+02   1.98985E+01   0.00000E+00   9.43346E+00
    47           3.14942E+00   1.88679E+01   1.99976E+01   9.98516E+02   1.99000E+01   0.00000E+00   1.88679E+01
    48           3.04014E+00   1.88678E+01   1.99971E+01   9.98511E+02   1.99019E+01   0.00000E+00   1.88678E+01
    49           2.93079E+00   1.88677E+01   1.99965E+01   9.98506E+02   1.99037E+01   0.00000E+00   1.88677E+01
    50           2.82872E+00   9.43328E+00   1.99961E+01   9.98501E+02   1.99055E+01   0.00000E+00   9.43328E+00
    51           2.74658E+00   1.88675E+01   1.99960E+01   9.98497E+02   1.99073E+01   0.00000E+00   1.88675E+01
    52           2.62698E+00   1.88674E+01   1.99957E+01   9.98491E+02   1.99096E+01   0.00000E+00   1.88674E+01
    53           2.49729E+00   1.88673E+01   1.99955E+01   9.98485E+02   1.99123E+01   0.00000E+00   1.88673E+01
    54           2.40496E+00   9.43309E+00   1.99953E+01   9.98481E+02   1.99140E+01   0.00000E+00   9.43309E+00
    55           3.23827E+00   2.47636E+01   1.99976E+01   9.98521E+02   1.98980E+01   0.00000E+00   2.47636E+01
    56           3.15594E+00   4.95270E+01   1.99973E+01   9.98517E+02   1.98995E+01   0.00000E+00   4.95270E+01
    57           3.04617E+00   4.95267E+01   1.99967E+01   9.98512E+02   1.99013E+01   0.00000E+00   4.95267E+01
    58           2.93628E+00   4.95265E+01   1.99962E+01   9.98506E+02   1.99032E+01   0.00000E+00   4.95265E+01
    59           2.83449E+00   2.47631E+01   1.99957E+01   9.98501E+02   1.99050E+01   0.00000E+00   2.47631E+01
    60           2.75194E+00   4.95261E+01   1.99955E+01   9.98498E+02   1.99066E+01   0.00000E+00   4.95261E+01
    61           2.63217E+00   4.95258E+01   1.99951E+01   9.98492E+02   1.99089E+01   0.00000E+00   4.95258E+01
    62           2.50266E+00   4.95255E+01   1.99948E+01   9.98486E+02   1.99114E+01   0.00000E+00   4.95255E+01
    63           2.41031E+00   2.47626E+01   1.99944E+01   9.98481E+02   1.99130E+01   0.00000E+00   2.47626E+01
    64           3.25226E+00   1.46225E+02   1.99976E+01   9.98521E+02   1.98977E+01   0.00000E+00   1.46225E+02
    65           3.16981E+00   2.92449E+02   1.99973E+01   9.98517E+02   1.98992E+01   0.00000E+00   2.92449E+02
    66           3.05987E+00   2.92447E+02   1.99967E+01   9.98512E+02   1.99010E+01   0.00000E+00   2.92447E+02
    67           2.94981E+00   2.92445E+02   1.99962E+01   9.98507E+02   1.99030E+01   0.00000E+00   2.92445E+02
    68           2.84695E+00   1.46222E+02   1.99957E+01   9.98502E+02   1.99047E+01   0.00000E+00   1.46222E+02
    69           2.75410E+00   2.92443E+02   1.99956E+01   9.98498E+02   1.99067E+01   0.00000E+00   2.92443E+02
    70           2.63373E+00   2.92441E+02   1.99952E+01   9.98492E+02   1.99089E+01   0.00000E+00   2.92441E+02
    71           2.50308E+00   2.92439E+02   1.99949E+01   9.98486E+02   1.99115E+01   0.00000E+00   2.92439E+02
    72           2.42024E+00   1.46219E+02   1.99945E+01   9.98482E+02   1.99130E+01   0.00000E+00   1.46219E+02
    73           3.20325E+00   1.81601E+02   1.99983E+01   9.98519E+02   1.98995E+01   0.00000E+00   1.81601E+02
    74           3.12163E+00   3.63201E+02   1.99982E+01   9.98515E+02   1.99011E+01   0.00000E+00   3.63201E+02
    75           3.01284E+00   3.63199E+02   1.99977E+01   9.98510E+02   1.99030E+01   0.00000E+00   3.63199E+02
    76           2.90394E+00   3.63198E+02   1.99973E+01   9.98505E+02   1.99051E+01   0.00000E+00   3.63198E+02
    77           2.80233E+00   1.81598E+02   1.99967E+01   9.98500E+02   1.99068E+01   0.00000E+00   1.81598E+02
    78           2.72058E+00   3.63194E+02   1.99967E+01   9.98496E+02   1.99086E+01   0.00000E+00   3.63194E+02
    79           2.59155E+00   3.63192E+02   1.99966E+01   9.98490E+02   1.99112E+01   0.00000E+00   3.63192E+02
    80           2.46250E+00   3.63190E+02   1.99963E+01   9.98483E+02   1.99139E+01   0.00000E+00   3.63190E+02
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81	2.38054E+00	1.81594E+02	1.99960E+01	9.98479E+02	1.99153E+01	0.00000E+00	1.81594E+02	
82	3.85907E+00	3.34274E+01	2.00014E+01	9.98550E+02	1.98881E+01	0.00000E+00	3.34274E+01	
83	3.86333E+00	2.01174E+02	1.99989E+01	9.98551E+02	1.98855E+01	0.00000E+00	2.01174E+02	
84	3.86474E+00	5.49014E+02	1.99989E+01	9.98551E+02	1.98854E+01	0.00000E+00	5.49014E+02	
85	3.87846E+00	2.97059E+03	1.99986E+01	9.98552E+02	1.98849E+01	0.00000E+00	2.97059E+03	
86	3.84973E+00	4.15374E+03	1.99994E+01	9.98550E+02	1.98863E+01	0.00000E+00	4.15374E+03	
87	3.86351E+00	2.01174E+02	1.99989E+01	9.98551E+02	1.98855E+01	0.00000E+00	2.01174E+02	
88	3.86977E+00	5.15582E+02	1.99986E+01	9.98551E+02	1.98850E+01	0.00000E+00	5.15582E+02	
89	3.87804E+00	2.97059E+03	1.99986E+01	9.98552E+02	1.98849E+01	0.00000E+00	2.97059E+03	
90	3.83996E+00	4.15374E+03	1.99994E+01	9.98550E+02	1.98865E+01	0.00000E+00	4.15374E+03	
91	1.72829E+00	9.84715E+01	2.00333E+01	9.98441E+02	1.99671E+01	0.00000E+00	9.84715E+01	
92	1.72883E+00	7.70978E+02	2.00268E+01	9.98442E+02	1.99606E+01	0.00000E+00	7.70978E+02	
93	1.73010E+00	2.15602E+03	2.00272E+01	9.98442E+02	1.99609E+01	0.00000E+00	2.15602E+03	
94	1.73142E+00	1.20937E+04	2.00260E+01	9.98442E+02	1.99597E+01	0.00000E+00	1.20937E+04	
95	1.71671E+00	1.24350E+04	2.00232E+01	9.98442E+02	1.99572E+01	0.00000E+00	1.24350E+04	
96	1.72885E+00	7.70998E+02	2.00268E+01	9.98442E+02	1.99606E+01	0.00000E+00	7.70998E+02	
97	1.73161E+00	2.05801E+03	2.00254E+01	9.98442E+02	1.99591E+01	0.00000E+00	2.05801E+03	
98	1.74139E+00	1.20937E+04	2.00262E+01	9.98443E+02	1.99597E+01	0.00000E+00	1.20937E+04	
99	1.71672E+00	1.24350E+04	2.00232E+01	9.98442E+02	1.99572E+01	0.00000E+00	1.24350E+04	
100	4.50517E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98712E+01	0.00000E+00	8.86301E+03	
101	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05	
102	4.50545E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98712E+01	0.00000E+00	8.86301E+03	
103	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05	

O HEAT SLAB NUMBER	VOL NUM	H.T. NODE	SURF FLUX (KC/HR/M2)	CRIT FLUX (KC/HR/M2)	H.T. COEF (KC/H/M2/C)	SURF TEMP (C)	LOCAL ENGY (CAL/G-UO2)	VOID FRAC	LOCAL MASS FLUX	LOCAL FLUID TEMP.
1	1	1	6.05738E+00	5.86344E+06	1.05395E+04	1.99026E+01	1.07897E+00	0.00000E+00	4.68643E+06	1.99019E+01
2	2	1	6.23984E+00	5.83946E+06	1.05131E+04	1.99041E+01	1.07907E+00	0.00000E+00	4.68643E+06	1.99033E+01
3	3	1	8.43505E-01	5.82862E+06	1.04696E+04	1.99057E+01	1.07921E+00	0.00000E+00	4.68643E+06	1.99054E+01
4	4	1	2.43355E+00	6.76024E+06	1.04289E+04	1.99081E+01	1.07936E+00	0.00000E+00	4.68643E+06	1.99076E+01
5	5	1	1.95141E+00	6.95275E+06	1.03909E+04	1.99098E+01	1.07947E+00	0.00000E+00	4.68643E+06	1.99094E+01
6	6	1	1.24254E+01	6.94269E+06	1.03558E+04	1.99130E+01	1.07961E+00	0.00000E+00	4.68643E+06	1.99117E+01
7	7	1	4.81315E+00	6.92857E+06	1.03058E+04	1.99151E+01	1.07979E+00	0.00000E+00	4.68643E+06	1.99143E+01
8	8	1	4.82566E+00	6.36700E+06	1.02546E+04	1.99180E+01	1.07998E+00	0.00000E+00	4.68643E+06	1.99172E+01
9	9	1	1.19791E+01	6.35860E+06	1.02212E+04	1.99202E+01	1.08008E+00	0.00000E+00	4.68643E+06	1.99188E+01
10	10	1	0.00000E+00	5.86684E+06	0.00000E+00	1.98986E+01	1.07872E+00	0.00000E+00	4.81002E+06	1.98985E+01
11	11	1	2.67842E+00	5.84168E+06	1.07434E+04	1.99004E+01	1.07882E+00	0.00000E+00	4.81002E+06	1.99000E+01
12	12	1	-4.88322E+00	5.83122E+06	1.07007E+04	1.99016E+01	1.07894E+00	0.00000E+00	4.81002E+06	1.99018E+01
13	13	1	2.62025E+00	6.76273E+06	1.06573E+04	1.99042E+01	1.07907E+00	0.00000E+00	4.81002E+06	1.99038E+01
14	14	1	3.84224E+00	6.95463E+06	1.06162E+04	1.99060E+01	1.07918E+00	0.00000E+00	4.81002E+06	1.99055E+01
15	15	1	7.24306E+00	6.94517E+06	1.05826E+04	1.99081E+01	1.07930E+00	0.00000E+00	4.81002E+06	1.99073E+01
16	16	1	2.67743E+00	6.93137E+06	1.05329E+04	1.99100E+01	1.07945E+00	0.00000E+00	4.81002E+06	1.99096E+01
17	17	1	1.91967E+00	6.36882E+06	1.04777E+04	1.99126E+01	1.07962E+00	0.00000E+00	4.81002E+06	1.99122E+01
18	18	1	8.00882E+00	6.35897E+06	1.04378E+04	1.99149E+01	1.07974E+00	0.00000E+00	4.81002E+06	1.99139E+01
19	19	1	0.00000E+00	5.86713E+06	0.00000E+00	1.98985E+01	1.07871E+00	0.00000E+00	4.81191E+06	1.98984E+01
20	20	1	2.77534E+00	5.84196E+06	1.07479E+04	1.99003E+01	1.07882E+00	0.00000E+00	4.81191E+06	1.98999E+01
21	21	1	2.23651E+00	5.83150E+06	1.07052E+04	1.99021E+01	1.07894E+00	0.00000E+00	4.81191E+06	1.99017E+01
22	22	1	6.29944E+00	6.76305E+06	1.06618E+04	1.99045E+01	1.07907E+00	0.00000E+00	4.81191E+06	1.99037E+01
23	23	1	3.75265E+00	6.95495E+06	1.06207E+04	1.99060E+01	1.07917E+00	0.00000E+00	4.81191E+06	1.99055E+01
24	24	1	7.64989E-01	6.94549E+06	1.05871E+04	1.99073E+01	1.07929E+00	0.00000E+00	4.81191E+06	1.99071E+01
25	25	1	5.76360E+00	6.93169E+06	1.05373E+04	1.99102E+01	1.07945E+00	0.00000E+00	4.81191E+06	1.99095E+01
26	26	1	9.38966E+00	6.36909E+06	1.04821E+04	1.99133E+01	1.07962E+00	0.00000E+00	4.81191E+06	1.99122E+01
27	27	1	6.39678E+00	6.35924E+06	1.04422E+04	1.99146E+01	1.07973E+00	0.00000E+00	4.81190E+06	1.99138E+01
28	28	1	-7.35034E+00	5.86886E+06	1.08774E+04	1.98972E+01	1.07867E+00	0.00000E+00	4.86265E+06	1.98976E+01
29	29	1	0.00000E+00	5.84363E+06	0.00000E+00	1.98993E+01	1.07877E+00	0.00000E+00	4.86265E+06	1.98992E+01
30	30	1	4.64936E-01	5.83311E+06	1.08020E+04	1.99012E+01	1.07889E+00	0.00000E+00	4.86265E+06	1.99010E+01
31	31	1	4.49509E+00	6.76485E+06	1.07582E+04	1.99035E+01	1.07901E+00	0.00000E+00	4.86264E+06	1.99030E+01
32	32	1	2.90033E+00	6.95674E+06	1.07165E+04	1.99051E+01	1.07912E+00	0.00000E+00	4.86264E+06	1.99047E+01
33	33	1	-4.35039E-01	6.94606E+06	1.06784E+04	1.99067E+01	1.07925E+00	0.00000E+00	4.86264E+06	1.99066E+01
34	34	1	8.97244E+00	6.93217E+06	1.06279E+04	1.99100E+01	1.07941E+00	0.00000E+00	4.86264E+06	1.99090E+01
35	35	1	3.23754E+00	6.36946E+06	1.05719E+04	1.99121E+01	1.07958E+00	0.00000E+00	4.86264E+06	1.99115E+01
36	36	1	1.11889E+01	6.36061E+06	1.05359E+04	1.99143E+01	1.07967E+00	0.00000E+00	4.86264E+06	1.99131E+01
37	37	1	0.00000E+00	5.86415E+06	0.00000E+00	1.98997E+01	1.07879E+00	0.00000E+00	4.78108E+06	1.98995E+01
38	38	1	2.04958E+00	5.83902E+06	1.06809E+04	1.99014E+01	1.07890E+00	0.00000E+00	4.78107E+06	1.99011E+01
39	39	1	-1.18329E+00	5.82861E+06	1.06384E+04	1.99031E+01	1.07903E+00	0.00000E+00	4.78107E+06	1.99030E+01
40	40	1	4.74518E+00	6.75974E+06	1.05953E+04	1.99056E+01	1.07915E+00	0.00000E+00	4.78107E+06	1.99050E+01
41	41	1	-3.32796E-01	6.95160E+06	1.05544E+04	1.99068E+01	1.07926E+00	0.00000E+00	4.78107E+06	1.99067E+01
42	42	1	3.29924E+00	6.94218E+06	1.05210E+04	1.99090E+01	1.07939E+00	0.00000E+00	4.78107E+06	1.99085E+01
43	43	1	2.05726E+00	6.92728E+06	1.04673E+04	1.99115E+01	1.07956E+00	0.00000E+00	4.78107E+06	1.99111E+01
44	44	1	6.46130E+00	6.36511E+06	1.04124E+04	1.99148E+01	1.07974E+00	0.00000E+00	4.78107E+06	1.99139E+01
45	45	1	8.69890E+00	6.35635E+06	1.03769E+04	1.99165E+01	1.07984E+00	0.00000E+00	4.78107E+06	1.99155E+01
46	46	1	0.00000E+00	5.86686E+06	0.00000E+00	1.98986E+01	1.07873E+00	0.00000E+00	4.81038E+06	1.98985E+01
47	47	1	1.98650E+00	5.84170E+06	1.07441E+04	1.99003E+01	1.07882E+00	0.00000E+00	4.81038E+06	1.99000E+01
48	48	1	1.66715E+00	5.83124E+06	1.07013E+04	1.99022E+01	1.07895E+00	0.00000E+00	4.81038E+06	1.99019E+01
49	49	1	-3.18627E+00	6.76276E+06	1.06580E+04	1.99036E+01	1.07907E+00	0.00000E+00	4.81038E+06	1.99037E+01
50	50	1	-9.15238E-01	6.95465E+06	1.06169E+04	1.99057E+01	1.07918E+00	0.00000E+00	4.81038E+06	1.99055E+01
51	51	1	-3.07270E-01	6.94519E+06	1.05833E+04	1.99074E+01	1.07929E+00	0.00000E+00	4.81038E+06	1.99073E+01
52	52	1	1.64405E+00	6.93139E+06	1.05335E+04	1.99099E+01	1.07945E+00	0.00000E+00	4.81038E+06	1.99096E+01
53	53	1	6.66977E+00	6.36883E+06	1.04784E+04	1.99131E+01	1.07963E+00	0.00000E+00	4.81038E+06	1.99123E+01
54	54	1	1.26703E+01	6.35897E+06	1.04384E+04	1.99154E+01	1.07974E+00	0.00000E+00	4.81038E+06	1.99140E+01
55	55	1	0.00000E+00	5.86752E+06	0.00000E+00	1.98982E+01	1.07869E+00	0.00000E+00	4.95205E+06	1.98980E+01
56	56	1	0.00000E+00	5.84232E+06	0.00000E+00	1.98996E+01	1.07879E+00	0.00000E+00	4.95205E+06	1.98995E+01
57	57	1	-3.99218E+00	5.83182E+06	1.09552E+04	1.99011E+01	1.07890E+00	0.00000E+00	4.95205E+06	1.99013E+01
58	58	1	-2.59299E-01	6.76337E+06	1.09106E+04	1.99034E+01	1.07903E+00	0.00000E+00	4.95205E+06	1.99032E+01
59	59	1	2.01976E+00	6.95531E+06	1.08687E+04	1.99054E+01	1.07913E+00	0.00000E+00	4.95205E+06	1.99050E+01
60	60	1	4.79798E+00	6.94581E+06	1.08342E+04	1.99072E+01	1.07925E+00	0.00000E+00	4.95205E+06	1.99066E+01
61	61	1	8.38991E+00	6.93199E+06	1.07832E+04	1.99098E+01	1.07940E+00	0.00000E+00	4.95205E+06	1.99089E+01
62	62	1	6.46620E+00	6.36941E+06	1.07269E+04	1.99122E+01	1.07957E+00	0.00000E+00	4.95205E+06	1.99114E+01
63	63	1	2.86212E+00	6.35954E+06	1.06861E+04	1.99136E+01	1.07967E+00	0.00000E+00	4.95205E+06	1.99130E+01

64	64	1	0.00000E+00	5.86886E+06	0.00000E+00	1.98979E+01	1.07867E+00	0.00000E+00	4.83942E+06	1.98977E+01
65	65	1	0.00000E+00	5.84364E+06	0.00000E+00	1.98994E+01	1.07877E+00	0.00000E+00	4.83942E+06	1.98992E+01
66	66	1	-6.36634E+00	5.83313E+06	1.07608E+04	1.99007E+01	1.07889E+00	0.00000E+00	4.83942E+06	1.99010E+01
67	67	1	-2.96225E+00	6.76487E+06	1.07171E+04	1.99029E+01	1.07902E+00	0.00000E+00	4.83942E+06	1.99030E+01
68	68	1	-5.06590E+00	6.95675E+06	1.06756E+04	1.99045E+01	1.07912E+00	0.00000E+00	4.83941E+06	1.99047E+01
69	69	1	5.67117E+00	6.94606E+06	1.06375E+04	1.99074E+01	1.07925E+00	0.00000E+00	4.83941E+06	1.99067E+01
70	70	1	-1.77671E+00	6.93217E+06	1.05872E+04	1.99090E+01	1.07940E+00	0.00000E+00	4.83941E+06	1.99089E+01
71	71	1	-1.52396E+00	6.36945E+06	1.05314E+04	1.99117E+01	1.07958E+00	0.00000E+00	4.83941E+06	1.99115E+01
72	72	1	-9.34231E-02	6.36060E+06	1.04955E+04	1.99132E+01	1.07967E+00	0.00000E+00	4.83941E+06	1.99130E+01
73	73	1	-5.71771E+00	5.86418E+06	1.07131E+04	1.98992E+01	1.07879E+00	0.00000E+00	4.78147E+06	1.98995E+01
74	74	1	3.38226E+00	5.83904E+06	1.06816E+04	1.99016E+01	1.07890E+00	0.00000E+00	4.78146E+06	1.99011E+01
75	75	1	2.83221E-01	5.82863E+06	1.06392E+04	1.99032E+01	1.07903E+00	0.00000E+00	4.78146E+06	1.99030E+01
76	76	1	4.02295E+00	6.75976E+06	1.05960E+04	1.99056E+01	1.07916E+00	0.00000E+00	4.78146E+06	1.99051E+01
77	77	1	8.98159E-02	6.95162E+06	1.05551E+04	1.99069E+01	1.07926E+00	0.00000E+00	4.78146E+06	1.99068E+01
78	78	1	3.10023E+00	6.94219E+06	1.05217E+04	1.99091E+01	1.07939E+00	0.00000E+00	4.78146E+06	1.99086E+01
79	79	1	9.98538E+00	6.92729E+06	1.04680E+04	1.99123E+01	1.07956E+00	0.00000E+00	4.78146E+06	1.99112E+01
80	80	1	4.24410E+00	6.36512E+06	1.04131E+04	1.99145E+01	1.07974E+00	0.00000E+00	4.78146E+06	1.99139E+01
81	81	1	4.78872E+00	6.35637E+06	1.03776E+04	1.99160E+01	1.07983E+00	0.00000E+00	4.78146E+06	1.99153E+01

0 HEAT SLAB NUMBER	VOL NUM	GAP CONDUCTANCE (KCAL/M2/HR/C)	GAP DISTANCE (M)	CENT TEMP (C)	AVG. TEMP (C)	FUEL POWER (MW)
1	1	3.20000E+02	0.00000E+00	1.99079E+01	1.99058E+01	1.05539E-11
2	2	3.20000E+02	0.00000E+00	1.99100E+01	1.99076E+01	4.77940E-11
3	3	3.20000E+02	0.00000E+00	1.99129E+01	1.99101E+01	5.65248E-11
4	4	3.20000E+02	0.00000E+00	1.99158E+01	1.99129E+01	5.82103E-11
5	5	3.20000E+02	0.00000E+00	1.99179E+01	1.99149E+01	2.87408E-11
6	6	3.20000E+02	0.00000E+00	1.99208E+01	1.99175E+01	6.02804E-11
7	7	3.20000E+02	0.00000E+00	1.99244E+01	1.99208E+01	6.26625E-11
8	8	3.20000E+02	0.00000E+00	1.99280E+01	1.99241E+01	6.33303E-11
9	9	3.20000E+02	0.00000E+00	1.99301E+01	1.99260E+01	2.25697E-11
10	10	1.90000E+03	0.00000E+00	1.99027E+01	1.99012E+01	5.33271E-11
11	11	1.90000E+03	0.00000E+00	1.99047E+01	1.99031E+01	2.22664E-10
12	12	1.90000E+03	0.00000E+00	1.99071E+01	1.99052E+01	2.36122E-10
13	13	1.90000E+03	0.00000E+00	1.99099E+01	1.99076E+01	2.17753E-10
14	14	1.90000E+03	0.00000E+00	1.99119E+01	1.99096E+01	1.07015E-10
15	15	1.90000E+03	0.00000E+00	1.99144E+01	1.99119E+01	2.23068E-10
16	16	1.90000E+03	0.00000E+00	1.99174E+01	1.99144E+01	2.32803E-10
17	17	1.90000E+03	0.00000E+00	1.99209E+01	1.99177E+01	2.39634E-10
18	18	1.90000E+03	0.00000E+00	1.99231E+01	1.99197E+01	9.27097E-11
19	19	1.90000E+03	0.00000E+00	1.99025E+01	1.99011E+01	1.43232E-10
20	20	1.90000E+03	0.00000E+00	1.99046E+01	1.99029E+01	6.00259E-10
21	21	1.90000E+03	0.00000E+00	1.99070E+01	1.99051E+01	6.86787E-10
22	22	1.90000E+03	0.00000E+00	1.99096E+01	1.99075E+01	6.94173E-10
23	23	1.90000E+03	0.00000E+00	1.99117E+01	1.99094E+01	3.42544E-10
24	24	1.90000E+03	0.00000E+00	1.99141E+01	1.99115E+01	7.17395E-10
25	25	1.90000E+03	0.00000E+00	1.99173E+01	1.99145E+01	7.49148E-10
26	26	1.90000E+03	0.00000E+00	1.99208E+01	1.99176E+01	7.68501E-10
27	27	1.90000E+03	0.00000E+00	1.99229E+01	1.99196E+01	2.93912E-10
28	28	1.90000E+03	0.00000E+00	1.99017E+01	1.99003E+01	7.82453E-10
29	29	1.90000E+03	0.00000E+00	1.99037E+01	1.99021E+01	3.35162E-09
30	30	1.90000E+03	0.00000E+00	1.99060E+01	1.99042E+01	4.06176E-09
31	31	1.90000E+03	0.00000E+00	1.99085E+01	1.99065E+01	4.34016E-09
32	32	1.90000E+03	0.00000E+00	1.99107E+01	1.99085E+01	2.17688E-09
33	33	1.90000E+03	0.00000E+00	1.99133E+01	1.99108E+01	4.58171E-09
34	34	1.90000E+03	0.00000E+00	1.99164E+01	1.99137E+01	4.80138E-09
35	35	1.90000E+03	0.00000E+00	1.99199E+01	1.99168E+01	4.93557E-09
36	36	1.90000E+03	0.00000E+00	1.99217E+01	1.99185E+01	1.87684E-09
37	37	1.90000E+03	0.00000E+00	1.99042E+01	1.99026E+01	1.34951E-09
38	38	1.90000E+03	0.00000E+00	1.99063E+01	1.99045E+01	5.57481E-09
39	39	1.90000E+03	0.00000E+00	1.99089E+01	1.99068E+01	6.45218E-09
40	40	1.90000E+03	0.00000E+00	1.99115E+01	1.99091E+01	6.54540E-09
41	41	1.90000E+03	0.00000E+00	1.99136E+01	1.99110E+01	3.09242E-09
42	42	1.90000E+03	0.00000E+00	1.99161E+01	1.99134E+01	6.14620E-09
43	43	1.90000E+03	0.00000E+00	1.99196E+01	1.99165E+01	6.18068E-09
44	44	1.90000E+03	0.00000E+00	1.99231E+01	1.99198E+01	6.31601E-09
45	45	1.90000E+03	0.00000E+00	1.99251E+01	1.99216E+01	2.43112E-09
46	46	1.90000E+03	0.00000E+00	1.99028E+01	1.99013E+01	6.20159E-11
47	47	1.90000E+03	0.00000E+00	1.99048E+01	1.99031E+01	2.58051E-10
48	48	1.90000E+03	0.00000E+00	1.99072E+01	1.99053E+01	2.72066E-10
49	49	1.90000E+03	0.00000E+00	1.99098E+01	1.99076E+01	2.50205E-10
50	50	1.90000E+03	0.00000E+00	1.99119E+01	1.99096E+01	1.21936E-10
51	51	1.90000E+03	0.00000E+00	1.99143E+01	1.99117E+01	2.55299E-10
52	52	1.90000E+03	0.00000E+00	1.99174E+01	1.99146E+01	2.65710E-10
53	53	1.90000E+03	0.00000E+00	1.99210E+01	1.99178E+01	2.70989E-10
54	54	1.90000E+03	0.00000E+00	1.99232E+01	1.99198E+01	1.01880E-10
55	55	1.90000E+03	0.00000E+00	1.99020E+01	1.99006E+01	1.54509E-10
56	56	1.90000E+03	0.00000E+00	1.99040E+01	1.99024E+01	6.47136E-10
57	57	1.90000E+03	0.00000E+00	1.99063E+01	1.99046E+01	7.35420E-10
58	58	1.90000E+03	0.00000E+00	1.99089E+01	1.99069E+01	7.35965E-10
59	59	1.90000E+03	0.00000E+00	1.99109E+01	1.99087E+01	3.61115E-10
60	60	1.90000E+03	0.00000E+00	1.99132E+01	1.99108E+01	7.54904E-10
61	61	1.90000E+03	0.00000E+00	1.99163E+01	1.99135E+01	7.85879E-10
62	62	1.90000E+03	0.00000E+00	1.99197E+01	1.99167E+01	8.04612E-10
63	63	1.90000E+03	0.00000E+00	1.99217E+01	1.99186E+01	3.05612E-10
64	64	1.90000E+03	0.00000E+00	1.99018E+01	1.99003E+01	7.62971E-10
65	65	1.90000E+03	0.00000E+00	1.99038E+01	1.99022E+01	3.26374E-09
66	66	1.90000E+03	0.00000E+00	1.99062E+01	1.99043E+01	3.94595E-09
67	67	1.90000E+03	0.00000E+00	1.99086E+01	1.99066E+01	4.19238E-09
68	68	1.90000E+03	0.00000E+00	1.99107E+01	1.99086E+01	2.08937E-09
69	69	1.90000E+03	0.00000E+00	1.99134E+01	1.99109E+01	4.36729E-09
70	70	1.90000E+03	0.00000E+00	1.99164E+01	1.99137E+01	4.57984E-09
71	71	1.90000E+03	0.00000E+00	1.99199E+01	1.99168E+01	4.72649E-09
72	72	1.90000E+03	0.00000E+00	1.99217E+01	1.99185E+01	1.80874E-09

73	73	1.90000E+03	0.00000E+00	1.99042E+01	1.99025E+01	1.36339E-09
74	74	1.90000E+03	0.00000E+00	1.99064E+01	1.99045E+01	5.65887E-09
75	75	1.90000E+03	0.00000E+00	1.99088E+01	1.99068E+01	6.55309E-09
76	76	1.90000E+03	0.00000E+00	1.99114E+01	1.99091E+01	6.61188E-09
77	77	1.90000E+03	0.00000E+00	1.99136E+01	1.99111E+01	3.10888E-09
78	78	1.90000E+03	0.00000E+00	1.99161E+01	1.99134E+01	6.16613E-09
79	79	1.90000E+03	0.00000E+00	1.99195E+01	1.99164E+01	6.19854E-09
80	80	1.90000E+03	0.00000E+00	1.99231E+01	1.99198E+01	6.36698E-09
81	81	1.90000E+03	0.00000E+00	1.99250E+01	1.99214E+01	2.45071E-09

0 SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	1	1.99079E+01	2	1.99078E+01	3	1.99077E+01	4	1.99075E+01	5	1.99072E+01	6	1.99068E+01	7	1.99063E+01
2	1	1.99100E+01	2	1.99099E+01	3	1.99098E+01	4	1.99095E+01	5	1.99092E+01	6	1.99088E+01	7	1.99082E+01
3	1	1.99129E+01	2	1.99128E+01	3	1.99126E+01	4	1.99124E+01	5	1.99120E+01	6	1.99115E+01	7	1.99109E+01
4	1	1.99158E+01	2	1.99157E+01	3	1.99155E+01	4	1.99152E+01	5	1.99148E+01	6	1.99143E+01	7	1.99137E+01
5	1	1.99179E+01	2	1.99178E+01	3	1.99177E+01	4	1.99173E+01	5	1.99169E+01	6	1.99164E+01	7	1.99157E+01
6	1	1.99208E+01	2	1.99207E+01	3	1.99205E+01	4	1.99202E+01	5	1.99197E+01	6	1.99191E+01	7	1.99184E+01
7	1	1.99244E+01	2	1.99243E+01	3	1.99241E+01	4	1.99237E+01	5	1.99232E+01	6	1.99225E+01	7	1.99218E+01
8	1	1.99280E+01	2	1.99280E+01	3	1.99277E+01	4	1.99273E+01	5	1.99268E+01	6	1.99261E+01	7	1.99253E+01
9	1	1.99301E+01	2	1.99300E+01	3	1.99298E+01	4	1.99294E+01	5	1.99288E+01	6	1.99281E+01	7	1.99272E+01
10	1	1.99027E+01	2	1.99027E+01	3	1.99026E+01	4	1.99024E+01	5	1.99022E+01	6	1.99020E+01	7	1.99016E+01
11	1	1.99047E+01	2	1.99047E+01	3	1.99046E+01	4	1.99044E+01	5	1.99042E+01	6	1.99039E+01	7	1.99035E+01
12	1	1.99071E+01	2	1.99071E+01	3	1.99070E+01	4	1.99068E+01	5	1.99065E+01	6	1.99062E+01	7	1.99058E+01
13	1	1.99099E+01	2	1.99098E+01	3	1.99097E+01	4	1.99094E+01	5	1.99091E+01	6	1.99087E+01	7	1.99082E+01
14	1	1.99119E+01	2	1.99118E+01	3	1.99117E+01	4	1.99114E+01	5	1.99111E+01	6	1.99107E+01	7	1.99102E+01
15	1	1.99144E+01	2	1.99143E+01	3	1.99142E+01	4	1.99139E+01	5	1.99135E+01	6	1.99131E+01	7	1.99125E+01
16	1	1.99174E+01	2	1.99173E+01	3	1.99171E+01	4	1.99168E+01	5	1.99164E+01	6	1.99159E+01	7	1.99152E+01
17	1	1.99209E+01	2	1.99209E+01	3	1.99207E+01	4	1.99203E+01	5	1.99199E+01	6	1.99193E+01	7	1.99186E+01
18	1	1.99231E+01	2	1.99230E+01	3	1.99228E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99206E+01
19	1	1.99025E+01	2	1.99025E+01	3	1.99024E+01	4	1.99023E+01	5	1.99021E+01	6	1.99018E+01	7	1.99015E+01
20	1	1.99046E+01	2	1.99046E+01	3	1.99045E+01	4	1.99043E+01	5	1.99041E+01	6	1.99038E+01	7	1.99034E+01
21	1	1.99070E+01	2	1.99069E+01	3	1.99068E+01	4	1.99066E+01	5	1.99064E+01	6	1.99060E+01	7	1.99056E+01
22	1	1.99096E+01	2	1.99096E+01	3	1.99094E+01	4	1.99092E+01	5	1.99089E+01	6	1.99085E+01	7	1.99081E+01
23	1	1.99117E+01	2	1.99116E+01	3	1.99115E+01	4	1.99113E+01	5	1.99109E+01	6	1.99105E+01	7	1.99100E+01
24	1	1.99141E+01	2	1.99141E+01	3	1.99139E+01	4	1.99137E+01	5	1.99133E+01	6	1.99129E+01	7	1.99123E+01
25	1	1.99173E+01	2	1.99173E+01	3	1.99171E+01	4	1.99168E+01	5	1.99164E+01	6	1.99159E+01	7	1.99153E+01
26	1	1.99208E+01	2	1.99208E+01	3	1.99206E+01	4	1.99202E+01	5	1.99198E+01	6	1.99192E+01	7	1.99185E+01
27	1	1.99229E+01	2	1.99228E+01	3	1.99226E+01	4	1.99223E+01	5	1.99218E+01	6	1.99212E+01	7	1.99205E+01
28	1	1.99017E+01	2	1.99016E+01	3	1.99015E+01	4	1.99014E+01	5	1.99012E+01	6	1.99010E+01	7	1.99007E+01
29	1	1.99037E+01	2	1.99037E+01	3	1.99036E+01	4	1.99034E+01	5	1.99032E+01	6	1.99029E+01	7	1.99025E+01
30	1	1.99060E+01	2	1.99060E+01	3	1.99058E+01	4	1.99057E+01	5	1.99054E+01	6	1.99051E+01	7	1.99047E+01
31	1	1.99085E+01	2	1.99085E+01	3	1.99084E+01	4	1.99081E+01	5	1.99078E+01	6	1.99075E+01	7	1.99070E+01
32	1	1.99107E+01	2	1.99106E+01	3	1.99105E+01	4	1.99103E+01	5	1.99100E+01	6	1.99096E+01	7	1.99091E+01
33	1	1.99133E+01	2	1.99132E+01	3	1.99131E+01	4	1.99128E+01	5	1.99125E+01	6	1.99120E+01	7	1.99115E+01
34	1	1.99164E+01	2	1.99164E+01	3	1.99162E+01	4	1.99159E+01	5	1.99155E+01	6	1.99151E+01	7	1.99145E+01
35	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99177E+01
36	1	1.99217E+01	2	1.99216E+01	3	1.99214E+01	4	1.99211E+01	5	1.99206E+01	6	1.99201E+01	7	1.99193E+01
37	1	1.99042E+01	2	1.99042E+01	3	1.99041E+01	4	1.99039E+01	5	1.99037E+01	6	1.99034E+01	7	1.99030E+01
38	1	1.99063E+01	2	1.99063E+01	3	1.99061E+01	4	1.99060E+01	5	1.99057E+01	6	1.99054E+01	7	1.99050E+01
39	1	1.99089E+01	2	1.99089E+01	3	1.99088E+01	4	1.99085E+01	5	1.99082E+01	6	1.99079E+01	7	1.99074E+01
40	1	1.99115E+01	2	1.99114E+01	3	1.99113E+01	4	1.99110E+01	5	1.99107E+01	6	1.99102E+01	7	1.99097E+01
41	1	1.99136E+01	2	1.99135E+01	3	1.99134E+01	4	1.99131E+01	5	1.99128E+01	6	1.99123E+01	7	1.99118E+01
42	1	1.99161E+01	2	1.99161E+01	3	1.99159E+01	4	1.99156E+01	5	1.99152E+01	6	1.99147E+01	7	1.99142E+01
43	1	1.99196E+01	2	1.99195E+01	3	1.99193E+01	4	1.99190E+01	5	1.99186E+01	6	1,99181E+01	7	1.99174E+01
44	1	1.99231E+01	2	1.99231E+01	3	1.99229E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99207E+01
45	1	1,99251E+01	2	1.99250E+01	3	1.99248E+01	4	1.99245E+01	5	1.99240E+01	6	1.99233E+01	7	1.99226E+01
46	1	1.99028E+01	2	1.99028E+01	3	1.99027E+01	4	1.99025E+01	5	1.99023E+01	6	1.99020E+01	7	1.99017E+01
47	1	1.99048E+01	2	1.99047E+01	3	1.99046E+01	4	1.99044E+01	5	1.99042E+01	6	1.99039E+01	7	1.99035E+01
48	1	1.99072E+01	2	1.99072E+01	3	1.99070E+01	4	1.99068E+01	5	1.99066E+01	6	1.99062E+01	7	1.99058E+01
49	1	1.99098E+01	2	1.99098E+01	3	1.99096E+01	4	1.99094E+01	5	1.99091E+01	6	1.99087E+01	7	1.99082E+01
50	1	1.99119E+01	2	1.99118E+01	3	1.99117E+01	4	1.99114E+01	5	1.99111E+01	6	1.99107E+01	7	1.99102E+01
51	1	1.99143E+01	2	1.99143E+01	3	1.99141E+01	4	1.99138E+01	5	1.99134E+01	6	1.99130E+01	7	1.99124E+01
52	1	1.99174E+01	2	1.99174E+01	3	1.99172E+01	4	1.99169E+01	5	1.99165E+01	6	1.9916DE+01	7	1.99154E+01
53	1	1.99210E+01	2	1.99209E+01	3	1.99207E+01	4	1.99204E+01	5	1.99199E+01	6	1.99194E+01	7	1.99187E+01
54	1	1.99232E+01	2	1.99231E+01	3	1.99229E+01	4	1.99225E+01	5	1.99221E+01	6	1.99215E+01	7	1.99207E+01
55	1	1.99020E+01	2	1.99020E+01	3	1.99019E+01	4	1.99017E+01	5	1.99015E+01	6	1.99013E+01	7	1.99010E+01
56	1	1.99040E+01	2	1.99040E+01	3	1.99039E+01	4	1.99037E+01	5	1.99035E+01	6	1.99032E+01	7	1.99028E+01
57	1	1.99063E+01	2	1.99063E+01	3	1.99062E+01	4	1.99060E+01	5	1.99057E+01	6	1.99054E+01	7	1.99050E+01
58	1	1.99089E+01	2	1.99088E+01	3	1.99087E+01	4	1.99085E+01	5	1.99082E+01	6	1.99078E+01	7	1.99074E+01
59	1	1.99109E+01	2	1.99108E+01	3	1.99107E+01	4	1.99105E+01	5	1.99101E+01	6	1.99097E+01	7	1.99093E+01
60	1	1.99132E+01	2	1.99132E+01	3	1.99130E+01	4	1.99128E+01	5	1.99124E+01	6	1.99120E+01	7	1.99114E+01
61	1	1.99163E+01	2	1.99162E+01	3	1.99160E+01	4	1.99157E+01	5	1.99154E+01	6	1.99149E+01	7	1.99143E+01
62	1	1.99197E+01	2	1.99196E+01	3	1.99194E+01	4	1.99191E+01	5	1.99187E+01	6	1.99182E+01	7	1.99175E+01
63	1	1.99217E+01	2	1.99217E+01	3	1.99215E+01	4	1.99212E+01	5	1.99207E+01	6	1.99202E+01	7	1.99195E+01
64	1	1.99018E+01	2	1.99017E+01	3	1.99016E+01	4	1.99015E+01	5	1.99013E+01	6	1.99010E+01	7	1.99007E+01
65	1	1.99038E+01	2	1.99037E+01	3	1.99036E+01	4	1.99035E+01	5	1.99032E+01	6	1.99030E+01	7	1.99026E+01
66	1	1.99062E+01	2	1.99061E+01	3	1.99060E+01	4	1.99058E+01	5	1.99056E+01	6	1.99052E+01	7	1.99048E+01
67	1	1.99086E+01	2	1.99086E+01	3	1.99084E+01	4	1.99082E+01	5	1.99079E+01	6	1.99076E+01	7	1.99072E+01
68	1	1.99107E+01	2	1.99107E+01	3	1.99105E+01	4	1.99103E+01	5	1.99100E+01	6	1.99096E+01	7	1.99092E+01
69	1	1.99134E+01	2	1.99133E+01	3	1.99132E+01	4	1.99129E+01	5	1.99126E+01	6	1.99121E+01	7	1.99116E+01
70	1	1.99164E+01	2	1.99163E+01	3	1.99162E+01	4	1.99159E+01	5	1.99155E+01	6	1.99150E+01	7	1.99144E+01
71	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99176E+01
72	1	1.99217E+01	2	1.99216E+01	3	1.99214E+01	4	1.99211E+01	5	1.99206E+01	6	1.99201E+01	7	1.99194E+01
73	1	1.99042E+01	2	1.99041E+01	3	1.99040E+01	4	1.99039E+01	5	1.99036E+01	6	1.99033E+01	7	1.99030E+01
74	1	1.99064E+01	2	1.99063E+01	3	1.99062E+01	4	1.99060E+01	5	1.99058E+01	6	1.99054E+01	7	1.99050E+01
75	1	1.99088E+01	2	1.99088E+01	3	1.99087E+01	4	1.99085E+01	5	1.99082E+01	6	1.99078E+01	7	1.99074E+01
76	1	1.99114E+01	2	1.99114E+01	3	1.99112E+01	4	1.99110E+01	5	1.99106E+01	6	1.99102E+01	7	1.99097E+01
77	1	1.99136E+01	2	1.99136E+01	3	1.99134E+01	4	1.99132E+01	5	1.99128E+01	6	1.99124E+01	7	1.99118E+01
78	1	1.99161E+01	2	1.99161E+01	3	1.99159E+01	4	1.99156E+01	5	1.99152E+01	6	1.99147E+01	7	1.99141E+01
79	1	1.99195E+01	2	1.99194E+01	3	1.99193E+01	4	1.99189E+01	5	1.99185E+01	6	1.99179E+01	7	1.99173E+01
80	1	1.99231E+01	2	1.99230E+01	3	1.99228E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99207E+01
81	1	1.99250E+01	2	1.99250E+01	3	1.99248E+01	4	1.99244E+01	5	1.99239E+01	6	1.99233E+01	7	1.99225E+01

0 SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	8	1.99058E+01	9	1.99052E+01	10	1.99046E+01	11	1.99040E+01	12	1.99040E+01	13	1.99037E+01	14	1.99026E+01
2	8	1.99076E+01	9	1.99069E+01	10	1.99062E+01	11	1.99055E+01	12	1.99055E+01	13	1.99052E+01	14	1.99041E+01
3	8	1.99103E+01	9	1.99095E+01	10	1.99086E+01	11	1.99076E+01	12	1.99076E+01	13	1.99071E+01	14	1.99057E+01
4	8	1.99130E+01	9	1.99121E+01	10	1.99112E+01	11	1.99102E+01	12	1.99102E+01	13	1.99095E+01	14	1.99081E+01
5	8	1.99150E+01	9	1.99141E+01	10	1.99131E+01	11	1.99121E+01	12	1.99120E+01	13	1.99114E+01	14	1.99098E+01
6	8	1.99176E+01	9	1.99166E+01	10	1.99157E+01	11	1.99148E+01	12	1.99147E+01	13	1.99143E+01	14	1.99130E+01
7	8	1.99209E+01	9	1.99199E+01	10	1.99187E+01	11	1.99175E+01	12	1.99174E+01	13	1.99167E+01	14	1.99151E+01
8	8	1.99243E+01	9	1.99232E+01	10	1.99220E+01	11	1.99206E+01	12	1.99206E+01	13	1.99197E+01	14	1.99180E+01
9	8	1.99262E+01	9	1.99250E+01	10	1.99237E+01	11	1.99223E+01	12	1.99223E+01	13	1.99215E+01	14	1.99202E+01
10	8	1.99013E+01	9	1.99008E+01	10	1.99004E+01	11	1.99000E+01	12	1.99000E+01	13	1.98998E+01	14	1.98986E+01
11	8	1.99031E+01	9	1.99027E+01	10	1.99022E+01	11	1.99017E+01	12	1.99017E+01	13	1.99015E+01	14	1.99004E+01
12	8	1.99053E+01	9	1.99048E+01	10	1.99042E+01	11	1.99035E+01	12	1.99035E+01	13	1.99031E+01	14	1.99016E+01
13	8	1.99077E+01	9	1.99070E+01	10	1.99064E+01	11	1.99058E+01	12	1.99058E+01	13	1.99055E+01	14	1.99042E+01
14	8	1.99096E+01	9	1.99090E+01	10	1.99083E+01	11	1.99077E+01	12	1.99077E+01	13	1.99074E+01	14	1.99060E+01
15	8	1.99119E+01	9	1.99112E+01	10	1.99104E+01	11	1.99097E+01	12	1.99097E+01	13	1.99094E+01	14	1.99081E+01
16	8	1.99145E+01	9	1.99137E+01	10	1.99129E+01	11	1.99119E+01	12	1.99119E+01	13	1.99113E+01	14	1.99100E+01
17	8	1.99178E+01	9	1.99169E+01	10	1.99158E+01	11	1.99147E+01	12	1.99147E+01	13	1.99141E+01	14	1.99126E+01
18	8	1.99198E+01	9	1.99189E+01	10	1.99179E+01	11	1.99167E+01	12	1.99167E+01	13	1.99161E+01	14	1.99149E+01
19	8	1.99011E+01	9	1.99007E+01	10	1.99002E+01	11	1.98999E+01	12	1.98999E+01	13	1.98997E+01	14	1.98985E+01
20	8	1.99030E+01	9	1.99025E+01	10	1.99020E+01	11	1.99015E+01	12	1.99015E+01	13	1.99013E+01	14	1.99003E+01
21	8	1.99052E+01	9	1.99046E+01	10	1.99041E+01	11	1.99036E+01	12	1.99036E+01	13	1.99033E+01	14	1.99021E+01
22	8	1.99076E+01	9	1.99070E+01	10	1.99064E+01	11	1.99058E+01	12	1.99058E+01	13	1.99056E+01	14	1.99045E+01
23	8	1.99094E+01	9	1.99087E+01	10	1.99081E+01	11	1.99074E+01	12	1.99074E+01	13	1.99072E+01	14	1.99060E+01
24	8	1.99117E+01	9	1.99109E+01	10	1.99101E+01	11	1.99091E+01	12	1.99091E+01	13	1.99086E+01	14	1.99073E+01
25	8	1.99146E+01	9	1.99138E+01	10	1.99129E+01	11	1.99119E+01	12	1.99119E+01	13	1.99114E+01	14	1.99102E+01
26	8	1.99177E+01	9	1.99168E+01	10	1.99158E+01	11	1.99150E+01	12	1.99150E+01	13	1.99146E+01	14	1.99133E+01
27	8	1.99197E+01	9	1.99188E+01	10	1.99178E+01	11	1.99166E+01	12	1.99166E+01	13	1.99160E+01	14	1.99146E+01
28	8	1.99003E+01	9	1.99000E+01	10	1.98995E+01	11	1.98990E+01	12	1.98990E+01	13	1.98986E+01	14	1.98972E+01
29	8	1.99021E+01	9	1.99017E+01	10	1.99012E+01	11	1.99008E+01	12	1.99008E+01	13	1.99006E+01	14	1.98993E+01
30	8	1.99043E+01	9	1.99038E+01	10	1.99032E+01	11	1.99027E+01	12	1.99027E+01	13	1.99025E+01	14	1.99012E+01
31	8	1.99065E+01	9	1.99060E+01	10	1.99054E+01	11	1.99048E+01	12	1.99048E+01	13	1.99046E+01	14	1.99035E+01
32	8	1.99086E+01	9	1.99080E+01	10	1.99073E+01	11	1.99067E+01	12	1.99067E+01	13	1.99064E+01	14	1.99051E+01
33	8	1.99109E+01	9	1.99102E+01	10	1.99095E+01	11	1.99086E+01	12	1.99086E+01	13	1.99081E+01	14	1.99067E+01
34	8	1.99138E+01	9	1.99130E+01	10	1.99122E+01	11	1.99115E+01	12	1.99115E+01	13	1.99111E+01	14	1.99100E+01
35	8	1.99169E+01	9	1.99161E+01	10	1.99152E+01	11	1.99141E+01	12	1.99141E+01	13	1.99135E+01	14	1.99121E+01
36	8	1.99185E+01	9	1.99176E+01	10	1.99167E+01	11	1.99158E+01	12	1.99158E+01	13	1.99154E+01	14	1.99143E+01
37	8	1.99026E+01	9	1.99021E+01	10	1.99016E+01	11	1.99012E+01	12	1.99012E+01	13	1.99010E+01	14	1.98997E+01
38	8	1.99045E+01	9	1.99040E+01	10	1.99034E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99014E+01
39	8	1.99069E+01	9	1.99063E+01	10	1.99057E+01	11	1.99049E+01	12	1.99049E+01	13	1.99044E+01	14	1.99031E+01
40	8	1.99091E+01	9	1.99085E+01	10	1.99078E+01	11	1.99072E+01	12	1.99072E+01	13	1.99069E+01	14	1.99056E+01
41	8	1.99112E+01	9	1.99104E+01	10	1.99096E+01	11	1.99086E+01	12	1.99086E+01	13	1.99081E+01	14	1.99068E+01
42	8	1.99135E+01	9	1.99127E+01	10	1.99119E+01	11	1.99109E+01	12	1.99109E+01	13	1.99104E+01	14	1.99090E+01
43	8	1.99166E+01	9	1.99157E+01	10	1.99147E+01	11	1.99136E+01	12	1.99136E+01	13	1.99130E+01	14	1.99115E+01
44	8	1.99199E+01	9	1.99190E+01	10	1.99180E+01	11	1.99168E+01	12	1.99168E+01	13	1.99162E+01	14	1.99148E+01
45	8	1.99217E+01	9	1.99207E+01	10	1.99197E+01	11	1.99184E+01	12	1.99184E+01	13	1.99178E+01	14	1.99165E+01
46	8	1.99013E+01	9	1.99009E+01	10	1.99004E+01	11	1.99000E+01	12	1.99000E+01	13	1.98998E+01	14	1.98986E+01
47	8	1.99031E+01	9	1.99026E+01	10	1.99021E+01	11	1.99017E+01	12	1.99017E+01	13	1.99014E+01	14	1.99003E+01
48	8	1.99054E+01	9	1.99048E+01	10	1.99043E+01	11	1.99037E+01	12	1.99037E+01	13	1.99035E+01	14	1.99022E+01
49	8	1.99077E+01	9	1.99070E+01	10	1.99063E+01	11	1.99054E+01	12	1.99054E+01	13	1.99050E+01	14	1.99036E+01
50	8	1.99097E+01	9	1.99091E+01	10	1.99084E+01	11	1.99075E+01	12	1.99075E+01	13	1.99070E+01	14	1.99057E+01
51	8	1.99117E+01	9	1.99110E+01	10	1.99102E+01	11	1.99093E+01	12	1.99093E+01	13	1.99088E+01	14	1.99074E+01
52	8	1.99147E+01	9	1.99139E+01	10	1.99130E+01	11	1.99120E+01	12	1.99120E+01	13	1.99113E+01	14	1.99099E+01
53	8	1.99179E+01	9	1.99171E+01	10	1.99161E+01	11	1.99150E+01	12	1.99150E+01	13	1.99144E+01	14	1.99131E+01
54	8	1.99199E+01	9	1.99189E+01	10	1.99179E+01	11	1.99170E+01	12	1.99170E+01	13	1.99166E+01	14	1.99154E+01
55	8	1.99006E+01	9	1.99002E+01	10	1.98998E+01	11	1.98995E+01	12	1.98995E+01	13	1.98993E+01	14	1.98982E+01
56	8	1.99024E+01	9	1.99020E+01	10	1.99015E+01	11	1.99011E+01	12	1.99011E+01	13	1.99009E+01	14	1.98996E+01
57	8	1.99046E+01	9	1.99041E+01	10	1.99036E+01	11	1.99029E+01	12	1.99029E+01	13	1.99025E+01	14	1.99011E+01
58	8	1.99069E+01	9	1.99064E+01	10	1.99057E+01	11	1.99050E+01	12	1.99050E+01	13	1.99046E+01	14	1.99034E+01
59	8	1.99087E+01	9	1.99081E+01	10	1.99075E+01	11	1.99069E+01	12	1.99069E+01	13	1.99067E+01	14	1.99054E+01
60	8	1.99108E+01	9	1.99101E+01	10	1.99094E+01	11	1.99088E+01	12	1.99088E+01	13	1.99085E+01	14	1.99072E+01
61	8	1.99136E+01	9	1.99128E+01	10	1.99120E+01	11	1.99113E+01	12	1.99113E+01	13	1.99109E+01	14	1.99098E+01
62	8	1.99168E+01	9	1.99160E+01	10	1.99151E+01	11	1.99140E+01	12	1.99140E+01	13	1.99134E+01	14	1.99122E+01
63	8	1.99187E+01	9	1.99178E+01	10	1.99168E+01	11	1.99157E+01	12	1.99157E+01	13	1.99150E+01	14	1.99136E+01
64	8	1.99004E+01	9	1.99000E+01	10	1.98995E+01	11	1.98992E+01	12	1.98992E+01	13	1.98991E+01	14	1.98979E+01
65	8	1.99022E+01	9	1.99017E+01	10	1.99013E+01	11	1.99008E+01	12	1.99008E+01	13	1.99006E+01	14	1.98994E+01
66	8	1.99044E+01	9	1.99039E+01	10	1.99033E+01	11	1.99026E+01	12	1.99026E+01	13	1.99022E+01	14	1.99007E+01
67	8	1.99067E+01	9	1.99061E+01	10	1.99055E+01	11	1.99048E+01	12	1.99048E+01	13	1.99043E+01	14	1.99029E+01
68	8	1.99086E+01	9	1.99081E+01	10	1.99074E+01	11	1.99066E+01	12	1.99066E+01	13	1.99061E+01	14	1.99045E+01
69	8	1.99109E+01	9	1.99102E+01	10	1.99095E+01	11	1.99088E+01	12	1.99088E+01	13	1.99085E+01	14	1.99074E+01
70	8	1.99137E+01	9	1.99130E+01	10	1.99121E+01	11	1.99112E+01	12	1.99112E+01	13	1.99105E+01	14	1.99090E+01
71	8	1.99169E+01	9	1.99160E+01	10	1.99151E+01	11	1.99140E+01	12	1.99140E+01	13	1.99134E+01	14	1.99117E+01
72	8	1.99186E+01	9	1.99177E+01	10	1.99167E+01	11	1.99156E+01	12	1.99156E+01	13	1.99149E+01	14	1.99132E+01
73	8	1.99026E+01	9	1.99022E+01	10	1.99017E+01	11	1.99010E+01	12	1.99010E+01	13	1.99006E+01	14	1.98992E+01
74	8	1.99045E+01	9	1.99040E+01	10	1.99035E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99016E+01
75	8	1.99069E+01	9	1.99063E+01	10	1.99057E+01	11	1.99049E+01	12	1.99049E+01	13	1.99045E+01	14	1.99032E+01
76	8	1.99092E+01	9	1.99085E+01	10	1.99079E+01	11	1.99072E+01	12	1.99072E+01	13	1.99070E+01	14	1.99056E+01
77	8	1.99112E+01	9	1.99105E+01	10	1.99096E+01	11	1.99087E+01	12	1.99087E+01	13	1.99082E+01	14	1.99069E+01
78	8	1.99135E+01	9	1.99127E+01	10	1.99119E+01	11	1.99109E+01	12	1.99109E+01	13	1.99104E+01	14	1.99091E+01
79	8	1.99165E+01	9	1.99156E+01	10	1.99147E+01	11	1.99139E+01	12	1.99139E+01	13	1.99135E+01	14	1.99123E+01
80	8	1.99199E+01	9	1.99189E+01	10	1.99179E+01	11	1.99167E+01	12	1.99167E+01	13	1.99160E+01	14	1.99145E+01
81	8	1.99216E+01	9	1.99205E+01	10	1.99193E+01	11	1.99181E+01	12	1.99181E+01	13	1.99175E+01	14	1.99160E+01

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE
ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR
0 CPU TIME = 305.78

JUNCTION NUMBER	CONNECTING VOLUMES	JCT. FLOW (TON/HR)	JCT. ENTH (KC/KG)	JCT. SPVL (M**3/KG)	PRESSURE DIFFERENTIALS STAG ATA	ELEV ATA	FRIC ATA	ACCL ATA
1	82 TO 10	2.24435E+01	1.99994E+01	1.00147E-03	7.08665E-01	-9.89207E-02	-6.09683E-01	6.13881E-05
2	1 TO 20	2.24435E+01	2.00002E+01	1.00148E-03	6.94871E-02	-3.69568E-02	-3.25457E-02	-1.54460E-05
3	2 TO 30	2.24435E+01	1.99999E+01	1.00149E-03	1.13230E-01	-4.92755E-02	-6.39906E-02	-3.65410E-05
4	3 TO 40	2.24435E+01	1.99995E+01	1.00149E-03	1.04528E-01	-4.92752E-02	-5.52584E-02	-5.19523E-06
5	4 TO 50	2.24435E+01	1.99993E+01	1.00150E-03	9.60550E-02	-3.69563E-02	-5.90895E-02	9.21566E-06
6	5 TO 60	2.24435E+01	1.99993E+01	1.00150E-03	8.73245E-02	-3.69560E-02	-5.03483E-02	2.01363E-05
7	6 TO 70	2.24435E+01	1.99994E+01	1.00151E-03	1.22306E-01	-4.92745E-02	-7.30671E-02	-3.59452E-05
8	7 TO 80	2.24435E+01	1.99993E+01	1.00151E-03	1.22432E-01	-4.92742E-02	-7.31548E-02	2.86401E-06
9	8 TO 90	2.24435E+01	1.99995E+01	1.00152E-03	7.86305E-02	-3.69555E-02	-4.17064E-02	-3.14447E-05
10	9 TO 910	2.24435E+01	1.99996E+01	1.00152E-03	6.70988E-01	-5.17090E-01	-1.53949E-01	-5.04604E-05
11	83 TO 100	1.84283E+02	1.99969E+01	1.00147E-03	6.79607E-01	-9.89208E-02	-5.80604E-01	8.25627E-05
12	10 TO 110	1.84283E+02	1.99976E+01	1.00148E-03	8.18697E-02	-3.69569E-02	-4.49624E-02	-4.95577E-05
13	11 TO 120	1.84283E+02	1.99971E+01	1.00149E-03	1.09274E-01	-4.92756E-02	-6.00062E-02	-7.75584E-06
14	12 TO 130	1.84283E+02	1.99965E+01	1.00149E-03	1.09389E-01	-4.92753E-02	-6.00821E-02	3.11320E-05
15	13 TO 140	1.84283E+02	1.99960E+01	1.00150E-03	1.02066E-01	-3.69564E-02	-6.51191E-02	-9.73576E-06
16	14 TO 150	1.84283E+02	1.99958E+01	1.00150E-03	8.21168E-02	-3.69560E-02	-4.51747E-02	-1.39227E-05
17	15 TO 160	1.84283E+02	1.99955E+01	1.00151E-03	1.19541E-01	-4.92746E-02	-7.03040E-02	-3.75227E-05
18	16 TO 170	1.84283E+02	1.99951E+01	1.00151E-03	1.29689E-01	-4.92743E-02	-8.04046E-02	1.03005E-05
19	17 TO 180	1.84283E+02	1.99948E+01	1.00152E-03	9.22652E-02	-3.69556E-02	-5.53564E-02	-4.67659E-05
20	18 TO 920	1.84283E+02	1.99948E+01	1.00152E-03	6.73828E-01	-5.17091E-01	-1.56794E-01	-5.63596E-05
21	84 TO 190	5.06977E+02	1.99968E+01	1.00147E-03	6.78070E-01	-9.89208E-02	-5.79069E-01	8.10799E-05
22	19 TO 200	5.06977E+02	1.99976E+01	1.00148E-03	8.19069E-02	-3.69569E-02	-4.49995E-02	-4.95271E-05
23	20 TO 210	5.06977E+02	1.99970E+01	1.00149E-03	1.09344E-01	-4.92756E-02	-6.00551E-02	1.30861E-05
24	21 TO 220	5.06977E+02	1.99965E+01	1.00149E-03	1.09388E-01	-4.92753E-02	-6.01310E-02	-1.86694E-05
25	22 TO 230	5.06977E+02	1.99960E+01	1.00150E-03	1.02163E-01	-3.69564E-02	-6.51777E-02	2.88419E-05
26	23 TO 240	5.06977E+02	1.99958E+01	1.00150E-03	8.21126E-02	-3.69560E-02	-4.52120E-02	-5.54177E-05
27	24 TO 250	5.06977E+02	1.99953E+01	1.00151E-03	1.19620E-01	-4.92746E-02	-7.03637E-02	-1.81778E-05
28	25 TO 260	5.06977E+02	1.99951E+01	1.00151E-03	1.29812E-01	-4.92743E-02	-8.04751E-02	6.21294E-05
29	26 TO 270	5.06977E+02	1.99949E+01	1.00152E-03	9.22883E-02	-3.69556E-02	-5.54044E-02	-7.17140E-05
30	27 TO 930	5.06977E+02	1.99948E+01	1.00152E-03	6.75112E-01	-5.17091E-01	-1.58090E-01	-6.87609E-05
31	85 TO 280	2.88764E+03	1.99966E+01	1.00147E-03	6.74727E-01	-9.89209E-02	-5.75762E-01	4.38439E-05
32	28 TO 290	2.88764E+03	1.99973E+01	1.00148E-03	8.24792E-02	-3.69569E-02	-4.55081E-02	1.41707E-05
33	29 TO 300	2.88764E+03	1.99967E+01	1.00149E-03	1.09999E-01	-4.92756E-02	-6.07345E-02	-1.14337E-05
34	30 TO 310	2.88764E+03	1.99961E+01	1.00149E-03	1.10071E-01	-4.92754E-02	-6.08120E-02	-1.62291E-05
35	31 TO 320	2.88764E+03	1.99956E+01	1.00150E-03	1.02767E-01	-3.69564E-02	-6.57913E-02	1.97104E-05
36	32 TO 330	2.88764E+03	1.99954E+01	1.00150E-03	9.27058E-02	-3.69561E-02	-5.57955E-02	-4.57500E-05
37	33 TO 340	2.88764E+03	1.99949E+01	1.00151E-03	1.20411E-01	-4.92746E-02	-7.11071E-02	2.90257E-05
38	34 TO 350	2.88764E+03	1.99946E+01	1.00151E-03	1.30504E-01	-4.92743E-02	-8.12716E-02	-4.23223E-05
39	35 TO 360	2.88764E+03	1.99943E+01	1.00152E-03	8.29078E-02	-3.69556E-02	-4.59083E-02	4.39084E-05
40	36 TO 940	2.88764E+03	1.99943E+01	1.00152E-03	6.86607E-01	-5.17091E-01	-1.69650E-01	-1.34237E-04
41	86 TO 370	3.52610E+03	1.99973E+01	1.00147E-03	6.93541E-01	-9.89207E-02	-5.94535E-01	8.55840E-05
42	37 TO 380	3.52610E+03	1.99981E+01	1.00148E-03	8.15219E-02	-3.69568E-02	-4.46098E-02	-4.47274E-05
43	38 TO 390	3.52610E+03	1.99976E+01	1.00149E-03	1.08782E-01	-4.92755E-02	-5.95351E-02	-2.89359E-05
44	39 TO 400	3.52610E+03	1.99970E+01	1.00149E-03	1.08925E-01	-4.92752E-02	-5.96104E-02	3.93983E-05
45	40 TO 410	3.52610E+03	1.99967E+01	1.00150E-03	1.01557E-01	-3.69563E-02	-6.46389E-02	-3.84693E-05
46	41 TO 420	3.52610E+03	1.99964E+01	1.00150E-03	8.17577E-02	-3.69560E-02	-4.48204E-02	-1.86826E-05
47	42 TO 430	3.52610E+03	1.99961E+01	1.00151E-03	1.28997E-01	-4.92745E-02	-7.97132E-02	9.63606E-06
48	43 TO 440	3.52610E+03	1.99959E+01	1.00151E-03	1.29060E-01	-4.92742E-02	-7.98112E-02	-2.54174E-05
49	44 TO 450	3.52609E+03	1.99958E+01	1.00152E-03	8.19589E-02	-3.69555E-02	-4.49988E-02	4.57896E-06
50	45 TO 950	3.52609E+03	1.99958E+01	1.00152E-03	6.61519E-01	-5.17091E-01	-1.44514E-01	-8.55739E-05
51	87 TO 460	1.84297E+02	1.99969E+01	1.00147E-03	6.79686E-01	-9.89208E-02	-5.80685E-01	8.01906E-05
52	46 TO 470	1.84297E+02	1.99976E+01	1.00148E-03	8.18815E-02	-3.69569E-02	-4.49685E-02	-4.38730E-05
53	47 TO 480	1.84297E+02	1.99971E+01	1.00149E-03	1.09300E-01	-4.92756E-02	-6.00143E-02	1.02178E-05
54	48 TO 490	1.84297E+02	1.99965E+01	1.00149E-03	1.09330E-01	-4.92753E-02	-6.00902E-02	-3.53518E-05
55	49 TO 500	1.84297E+02	1.99960E+01	1.00150E-03	1.02068E-01	-3.69564E-02	-6.51281E-02	-1.60753E-05
56	50 TO 510	1.84297E+02	1.99958E+01	1.00150E-03	8.21605E-02	-3.69560E-02	-4.51808E-02	2.36850E-05
57	51 TO 520	1.84297E+02	1.99954E+01	1.00151E-03	1.19580E-01	-4.92746E-02	-7.03136E-02	-7.87766E-06
58	52 TO 530	1.84297E+02	1.99951E+01	1.00151E-03	1.29660E-01	-4.92743E-02	-8.04157E-02	-2.97057E-05
59	53 TO 540	1.84297E+02	1.99950E+01	1.00152E-03	9.23703E-02	-3.69556E-02	-5.53640E-02	5.07424E-05
60	54 TO 960	1.84297E+02	1.99950E+01	1.00152E-03	6.73778E-01	-5.17091E-01	-1.56817E-01	-1.29739E-04
61	88 TO 550	4.98027E+02	1.99966E+01	1.00147E-03	6.81879E-01	-9.89208E-02	-5.82874E-01	8.36713E-05
62	55 TO 560	4.98027E+02	1.99973E+01	1.00148E-03	8.22695E-02	-3.69569E-02	-4.53508E-02	-3.81750E-05
63	56 TO 570	4.98027E+02	1.99967E+01	1.00149E-03	1.09769E-01	-4.92756E-02	-6.05260E-02	-3.27495E-05
64	57 TO 580	4.98027E+02	1.99961E+01	1.00149E-03	1.09878E-01	-4.92753E-02	-6.06052E-02	-2.83229E-06
65	58 TO 590	4.98027E+02	1.99956E+01	1.00150E-03	1.01847E-01	-3.69564E-02	-6.48340E-02	5.68448E-05
66	59 TO 600	4.98027E+02	1.99954E+01	1.00150E-03	8.25021E-02	-3.69561E-02	-4.55718E-02	-2.57226E-05
67	60 TO 610	4.98027E+02	1.99949E+01	1.00151E-03	1.19759E-01	-4.92746E-02	-7.04958E-02	-1.13712E-05
68	61 TO 620	4.98026E+02	1.99945E+01	1.00151E-03	1.29486E-01	-4.92743E-02	-8.02601E-02	-4.89713E-05
69	62 TO 630	4.98026E+02	1.99942E+01	1.00152E-03	9.24029E-02	-3.69556E-02	-5.54204E-02	2.68867E-05
70	63 TO 970	4.98026E+02	1.99941E+01	1.00152E-03	6.76221E-01	-5.17091E-01	-1.59237E-01	-1.06959E-04
71	89 TO 640	2.87384E+03	1.99966E+01	1.00147E-03	6.73891E-01	-9.89208E-02	-5.74885E-01	8.45197E-05
72	64 TO 650	2.87384E+03	1.99974E+01	1.00148E-03	8.24014E-02	-3.69569E-02	-4.54844E-02	-3.98019E-05
73	65 TO 660	2.87384E+03	1.99967E+01	1.00149E-03	1.09957E-01	-4.92756E-02	-6.07024E-02	-2.12019E-05
74	66 TO 670	2.87384E+03	1.99961E+01	1.00149E-03	1.10049E-01	-4.92754E-02	-6.07793E-02	-6.14149E-06
75	67 TO 680	2.87384E+03	1.99956E+01	1.00150E-03	1.02880E-01	-3.69564E-02	-6.59127E-02	1.08517E-05
76	68 TO 690	2.87384E+03	1.99954E+01	1.00150E-03	9.28153E-02	-3.69561E-02	-5.58435E-02	1.57242E-05
77	69 TO 700	2.87384E+03	1.99950E+01	1.00151E-03	1.20386E-01	-4.92746E-02	-7.11464E-02	-3.46567E-05
78	70 TO 710	2.87384E+03	1.99946E+01	1.00151E-03	1.30659E-01	-4.92743E-02	-8.13834E-02	1.55499E-06
79	71 TO 720	2.87384E+03	1.99943E+01	1.00152E-03	8.28355E-02	-3.69556E-02	-4.58822E-02	-2.29422E-06
80	72 TO 980	2.87384E+03	1.99942E+01	1.00152E-03	6.76480E-01	-5.17091E-01	-1.59496E-01	-1.07586E-04
81	90 TO 730	3.52639E+03	1.99973E+01	1.00147E-03	6.83660E-01	-9.89206E-02	-5.84698E-01	4.19947E-05
82	73 TO 740	3.52639E+03	1.99980E+01	1.00148E-03	8.15743E-02	-3.69568E-02	-4.46144E-02	3.12572E-06
83	74 TO 750	3.52639E+03	1.99976E+01	1.00149E-03	1.08777E-01	-4.92755E-02	-5.95412E-02	-3.99245E-05
84	75 TO 760	3.52638E+03	1.99971E+01	1.00149E-03	1.08940E-01	-4.92752E-02	-5.96165E-02	4.78378E-05
85	76 TO 770	3.52638E+03	1.99967E+01	1.00150E-03	1.01552E-01	-3.69563E-02	-6.46448E-02	-4.88883E-05
86	77 TO 780	3.52638E+03	1.99965E+01	1.00150E-03	8.17737E-02	-3.69560E-02	-4.48250E-02	-7.24127E-06
87	78 TO 790	3.52638E+03	1.99962E+01	1.00151E-03	1.29038E-01	-4.92745E-02	-7.97206E-02	4.28195E-05

88	79 TO 80	3.52638E+03	1.99960E+01	1.00151E-03	1.29045E-01	-4.92742E-02	-7.98187E-02	-4.76278E-05
89	80 TO 81	3.52638E+03	1.99958E+01	1.00152E-03	8.19604E-02	-3.69555E-02	-4.50034E-02	1.40307E-06
90	81 TO 99	3.52638E+03	1.99957E+01	1.00152E-03	6.61523E-01	-5.17091E-01	-1.44529E-01	-9.66868E-05
91	102 TO 82	2.24435E+01	1.99987E+01	1.00142E-03	7.39777E-01	-8.66017E-02	-6.53205E-01	-3.00466E-05
92	91 TO 103	2.24433E+01	2.00215E+01	1.00157E-03	7.38995E-01	-5.94656E-01	-1.44196E-01	1.42758E-04
93	100 TO 83	1.84283E+02	1.99987E+01	1.00142E-03	7.32329E-01	-8.66018E-02	-6.45743E-01	-1.56785E-05
94	92 TO 101	1.84281E+02	2.00150E+01	1.00157E-03	7.40114E-01	-5.94657E-01	-1.45313E-01	1.44576E-04
95	100 TO 84	5.06977E+02	1.99987E+01	1.00142E-03	7.30552E-01	-8.66018E-02	-6.43965E-01	-1.53967E-05
96	93 TO 101	5.06973E+02	2.00153E+01	1.00157E-03	7.41398E-01	-5.94657E-01	-1.46597E-01	1.43815E-04
97	100 TO 85	2.88764E+03	1.99987E+01	1.00142E-03	7.03858E-01	-8.66018E-02	-6.17270E-01	-1.38406E-05
98	94 TO 101	2.88761E+03	2.00141E+01	1.00156E-03	7.42988E-01	-5.94657E-01	-1.48186E-01	1.44420E-04
99	100 TO 86	3.52610E+03	1.99987E+01	1.00142E-03	7.28548E-01	-8.66017E-02	-6.41965E-01	-1.83352E-05
100	95 TO 101	3.52607E+03	2.00114E+01	1.00156E-03	7.27907E-01	-5.94657E-01	-1.33097E-01	1.52120E-04
101	102 TO 87	1.84297E+02	1.99987E+01	1.00142E-03	7.32417E-01	-8.66018E-02	-6.45830E-01	-1.56290E-05
102	96 TO 103	1.84295E+02	2.00150E+01	1.00157E-03	7.40136E-01	-5.94657E-01	-1.45335E-01	1.44624E-04
103	102 TO 88	4.98027E+02	1.99987E+01	1.00142E-03	7.22466E-01	-8.66018E-02	-6.35878E-01	-1.38774E-05
104	97 TO 103	4.98022E+02	2.00136E+01	1.00156E-03	7.43580E-01	-5.94657E-01	-1.48778E-01	1.44480E-04
105	102 TO 89	2.87384E+03	1.99987E+01	1.00142E-03	7.05221E-01	-8.66018E-02	-6.18633E-01	-1.39648E-05
106	98 TO 103	2.87382E+03	2.00144E+01	1.00156E-03	7.52844E-01	-5.94657E-01	-1.58043E-01	1.44222E-04
107	102 TO 90	3.52639E+03	1.99987E+01	1.00142E-03	7.38586E-01	-8.66017E-02	-6.52003E-01	-1.83553E-05
108	99 TO 103	3.52636E+03	2.00114E+01	1.00156E-03	7.27922E-01	-5.94657E-01	-1.33112E-01	1.52688E-04
109	0 TO 100	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
110	0 TO 102	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00

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EUREKA-ATR/HOD1 (1) THERMAL REACTOR CORE KINETICS CODE

ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR

0 CPU TIME = 305.80

OJUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
1	1.30427E+00	1.30427E+00	2.24435E+01	0.00000E+00	2.00027E+01	0.00000E+00	2.00027E+01
2	1.30431E+00	1.30431E+00	2.24435E+01	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
3	1.30431E+00	1.30431E+00	2.24435E+01	0.00000E+00	2.00006E+01	0.00000E+00	2.00006E+01
4	1.30432E+00	1.30432E+00	2.24435E+01	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
5	1.30433E+00	1.30433E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
6	1.30433E+00	1.30433E+00	2.24435E+01	0.00000E+00	1.99998E+01	0.00000E+00	1.99998E+01
7	1.30434E+00	1.30434E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
8	1.30435E+00	1.30435E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
9	1.30435E+00	1.30435E+00	2.24435E+01	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
10	1.30436E+00	1.30436E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
11	1.33866E+00	1.33866E+00	1.84283E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
12	1.33870E+00	1.33870E+00	1.84283E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
13	1.33871E+00	1.33871E+00	1.84283E+02	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
14	1.33872E+00	1.33872E+00	1.84283E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
15	1.33872E+00	1.33872E+00	1.84283E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
16	1.33873E+00	1.33873E+00	1.84283E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
17	1.33873E+00	1.33873E+00	1.84283E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
18	1.33874E+00	1.33874E+00	1.84283E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
19	1.33875E+00	1.33875E+00	1.84283E+02	0.00000E+00	1.99956E+01	0.00000E+00	1.99956E+01
20	1.33876E+00	1.33876E+00	1.84283E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
21	1.33919E+00	1.33919E+00	5.06977E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
22	1.33923E+00	1.33923E+00	5.06977E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
23	1.33923E+00	1.33923E+00	5.06977E+02	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
24	1.33924E+00	1.33924E+00	5.06977E+02	0.00000E+00	1.99972E+01	0.00000E+00	1.99972E+01
25	1.33925E+00	1.33925E+00	5.06977E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
26	1.33925E+00	1.33925E+00	5.06977E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
27	1.33926E+00	1.33926E+00	5.06977E+02	0.00000E+00	1.99961E+01	0.00000E+00	1.99961E+01
28	1.33927E+00	1.33927E+00	5.06977E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
29	1.33927E+00	1.33927E+00	5.06977E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
30	1.33928E+00	1.33928E+00	5.06977E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
31	1.35331E+00	1.35331E+00	2.88764E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
32	1.35335E+00	1.35335E+00	2.88764E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
33	1.35335E+00	1.35335E+00	2.88764E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
34	1.35336E+00	1.35336E+00	2.88764E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
35	1.35337E+00	1.35337E+00	2.88764E+03	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
36	1.35337E+00	1.35337E+00	2.88764E+03	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
37	1.35338E+00	1.35338E+00	2.88764E+03	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
38	1.35339E+00	1.35339E+00	2.88764E+03	0.00000E+00	1.99954E+01	0.00000E+00	1.99954E+01
39	1.35340E+00	1.35340E+00	2.88764E+03	0.00000E+00	1.99951E+01	0.00000E+00	1.99951E+01
40	1.35340E+00	1.35340E+00	2.88764E+03	0.00000E+00	1.99948E+01	0.00000E+00	1.99948E+01
41	1.33061E+00	1.33061E+00	3.52610E+03	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
42	1.33065E+00	1.33065E+00	3.52610E+03	0.00000E+00	1.99986E+01	0.00000E+00	1.99986E+01
43	1.33065E+00	1.33065E+00	3.52610E+03	0.00000E+00	1.99984E+01	0.00000E+00	1.99984E+01
44	1.33066E+00	1.33066E+00	3.52610E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
45	1.33067E+00	1.33067E+00	3.52610E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
46	1.33067E+00	1.33067E+00	3.52610E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
47	1.33068E+00	1.33068E+00	3.52610E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
48	1.33069E+00	1.33069E+00	3.52610E+03	0.00000E+00	1.99967E+01	0.00000E+00	1.99967E+01
49	1.33070E+00	1.33070E+00	3.52609E+03	0.00000E+00	1.99966E+01	0.00000E+00	1.99966E+01

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE
ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR
0 CPU TIME = 305.81

OJUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
50	1.33070E+00	1.33070E+00	3.52609E+03	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
51	1.33876E+00	1.33876E+00	1.84297E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
52	1.33880E+00	1.33880E+00	1.84297E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
53	1.33881E+00	1.33881E+00	1.84297E+02	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
54	1.33881E+00	1.33881E+00	1.84297E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
55	1.33882E+00	1.33882E+00	1.84297E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
56	1.33883E+00	1.33883E+00	1.84297E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
57	1.33883E+00	1.33883E+00	1.84297E+02	0.00000E+00	1.99962E+01	0.00000E+00	1.99962E+01
58	1.33884E+00	1.33884E+00	1.84297E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
59	1.33885E+00	1.33885E+00	1.84297E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
60	1.33885E+00	1.33885E+00	1.84297E+02	0.00000E+00	1.99955E+01	0.00000E+00	1.99955E+01
61	1.37819E+00	1.37819E+00	4.98027E+02	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
62	1.37823E+00	1.37823E+00	4.98027E+02	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
63	1.37824E+00	1.37824E+00	4.98027E+02	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
64	1.37824E+00	1.37824E+00	4.98027E+02	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
65	1.37825E+00	1.37825E+00	4.98027E+02	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
66	1.37826E+00	1.37826E+00	4.98027E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
67	1.37826E+00	1.37826E+00	4.98027E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
68	1.37827E+00	1.37827E+00	4.98026E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
69	1.37828E+00	1.37828E+00	4.98026E+02	0.00000E+00	1.99950E+01	0.00000E+00	1.99950E+01
70	1.37828E+00	1.37828E+00	4.98026E+02	0.00000E+00	1.99946E+01	0.00000E+00	1.99946E+01
71	1.34684E+00	1.34684E+00	2.87384E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
72	1.34688E+00	1.34688E+00	2.87384E+03	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
73	1.34689E+00	1.34689E+00	2.87384E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
74	1.34690E+00	1.34690E+00	2.87384E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
75	1.34690E+00	1.34690E+00	2.87384E+03	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
76	1.34691E+00	1.34691E+00	2.87384E+03	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
77	1.34691E+00	1.34691E+00	2.87384E+03	0.00000E+00	1.99958E+01	0.00000E+00	1.99958E+01
78	1.34692E+00	1.34692E+00	2.87384E+03	0.00000E+00	1.99954E+01	0.00000E+00	1.99954E+01
79	1.34693E+00	1.34693E+00	2.87384E+03	0.00000E+00	1.99951E+01	0.00000E+00	1.99951E+01
80	1.34694E+00	1.34694E+00	2.87384E+03	0.00000E+00	1.99948E+01	0.00000E+00	1.99948E+01
81	1.33072E+00	1.33072E+00	3.52639E+03	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
82	1.33076E+00	1.33076E+00	3.52639E+03	0.00000E+00	1.99985E+01	0.00000E+00	1.99985E+01
83	1.33076E+00	1.33076E+00	3.52639E+03	0.00000E+00	1.99984E+01	0.00000E+00	1.99984E+01
84	1.33077E+00	1.33077E+00	3.52638E+03	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
85	1.33078E+00	1.33078E+00	3.52638E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
86	1.33078E+00	1.33078E+00	3.52638E+03	0.00000E+00	1.99970E+01	0.00000E+00	1.99970E+01
87	1.33079E+00	1.33079E+00	3.52638E+03	0.00000E+00	1.99970E+01	0.00000E+00	1.99970E+01
88	1.33080E+00	1.33080E+00	3.52638E+03	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
89	1.33080E+00	1.33080E+00	3.52638E+03	0.00000E+00	1.99965E+01	0.00000E+00	1.99965E+01
90	1.33081E+00	1.33081E+00	3.52638E+03	0.00000E+00	1.99962E+01	0.00000E+00	1.99962E+01
91	3.24568E+00	3.24568E+00	2.24435E+01	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
92	1.45641E+00	1.45641E+00	2.24433E+01	0.00000E+00	2.00336E+01	0.00000E+00	2.00336E+01
93	3.33132E+00	3.33132E+00	1.84283E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
94	1.49480E+00	1.49480E+00	1.84281E+02	0.00000E+00	2.00271E+01	0.00000E+00	2.00271E+01
95	3.33257E+00	3.33257E+00	5.06977E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
96	1.49539E+00	1.49539E+00	5.06973E+02	0.00000E+00	2.00274E+01	0.00000E+00	2.00274E+01
97	3.36766E+00	3.36766E+00	2.88764E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
98	1.51117E+00	1.51117E+00	2.88761E+03	0.00000E+00	2.00263E+01	0.00000E+00	2.00263E+01
99	3.31120E+00	3.31120E+00	3.52610E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01

1

EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE
ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR
0 CPU TIME = 305.81

OJUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
100	1.48581E+00	1.48581E+00	3.52607E+03	0.00000E+00	2.00235E+01	0.00000E+00	2.00235E+01
101	3.33157E+00	3.33157E+00	1.84297E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
102	1.49491E+00	1.49491E+00	1.84295E+02	0.00000E+00	2.00271E+01	0.00000E+00	2.00271E+01
103	3.42968E+00	3.42968E+00	4.98027E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
104	1.53895E+00	1.53895E+00	4.98022E+02	0.00000E+00	2.00257E+01	0.00000E+00	2.00257E+01
105	3.35157E+00	3.35157E+00	2.87384E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
106	1.50395E+00	1.50395E+00	2.87382E+03	0.00000E+00	2.00265E+01	0.00000E+00	2.00265E+01
107	3.31147E+00	3.31147E+00	3.52639E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
108	1.48593E+00	1.48593E+00	3.52636E+03	0.00000E+00	2.00235E+01	0.00000E+00	2.00235E+01
109	0.00000E+00	0.00000E+00	7.10500E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
110	0.00000E+00	0.00000E+00	7.10500E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01

IPRTCT = 1

CHANNEL RESULTS

CHANNEL NUMBER	CONNECTING VOLUMES	COOLANT TEMPERATURE (C)	COOLANT VOID FRAC (-)	FUEL TEMPERATURE (C)
1	1 TO 9	1.99099E+01	0.00000E+00	1.99155E+01
2	10 TO 18	1.99058E+01	0.00000E+00	1.99100E+01
3	19 TO 27	1.99057E+01	0.00000E+00	1.99099E+01
4	28 TO 36	1.99051E+01	0.00000E+00	1.99090E+01
5	37 TO 45	1.99071E+01	0.00000E+00	1.99117E+01
6	46 TO 54	1.99058E+01	0.00000E+00	1.99101E+01
7	55 TO 63	1.99052E+01	0.00000E+00	1.99092E+01
8	64 TO 72	1.99051E+01	0.00000E+00	1.99091E+01
9	73 TO 81	1.99072E+01	0.00000E+00	1.99117E+01

```
 IM,JM,KM,KMIN,KMAX
 23 13 4 1 15
 IFT,E1,V1,X1
 1 20.009995 0.00000000E+00 0.00000000E+00
 FSP,PLP1(L),FP,FSG,FSUB,FD,FHL,FI,FAX,QCPR(L),CQQ,X1
 AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
  0.1001E+01 0.2281E-05 0.7189E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00 0.6982E-06 0.0000E+00
  0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1000E+01 0.3044E+03 0.2592E+01 0.8800E+00-0.2528E+00 0.1186E+03
 IM,JM,KM,KMIN,KMAX
 23 13 14 1 15
 IFT,E1,V1,X1
 2 15.949999 0.00000000E+00 0.00000000E+00
 FSP,PLP1(L),FP,FSG,FSUB,FD,FHL,FI,FAX,QCPR(L),CQQ,X1
 AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
  0.8388E+00 0.1540E-05 0.7252E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00 0.3127E-07 0.0000E+00
  0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1000E+01 0.3970E+02 0.3122E+01 0.8800E+00-0.2528E+00 0.1186E+03
1  ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR                                                                          91-10-26

                          *************** SUMMARY  TABLE ***************

                              MINIMUM CPR ,(I,J,K),L =    0.000, 28, 17, 15,  3

                              MAXIMUM LHGR,(I,J,K),L =    0.000, 25, 15,  3,  3

                              CPR (25,15, 3)         =   99.990

                              LHGR(28,17,15)         =    0.000

 IPRTCT =    1
OPLOT RECORD NUMBER =     27
ORESTART NUMBER     =      9
1

    EUREKA-ATR       ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR


 **** CHANNEL WISE POWER ****

      CHANNEL NO.          1        2        3        4        5        6        7        8        9
      POWER          1.54734  0.76518  0.85542  0.93923  1.07893  0.87517  0.94831  0.90379  1.08862


 **** CLUSTER WISE POWER ****

 J I      1      2      3      4      5      6      7      8      9     10     11     12     13     14
 1    0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.736  0.751  0.883
 2    0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.491  0.705  0.600  0.844  0.717  1.020  0.786
 3    0.000  0.000  0.000  0.000  0.000  0.000  0.711  0.729  0.936  0.780  1.042  0.933  1.252  1.020
 4    0.000  0.000  0.000  0.000  0.000  0.726  0.695  0.963  0.709  0.868  0.673  1.125  0.885  1.266
 5    0.000  0.000  0.000  0.000  0.675  0.968  0.894  1.174  0.925  1.011  0.842  1.225  1.024  1.369
 6    0.000  0.000  0.000  0.567  0.897  0.771  1.104  0.839  1.159  0.770  1.047  0.829  1.188  0.878
 7    0.000  0.000  0.712  0.773  1.050  0.896  1.203  1.028  1.275  0.963  1.246  1.015  1.316  0.996
 8    0.000  0.631  0.662  0.954  0.724  0.913  0.708  1.087  0.840  1.181  0.863  1.181  0.825  0.978
 9    0.000  0.770  0.828  1.107  0.903  1.006  0.789  1.220  1.019  1.346  1.048  1.337  0.978  1.081
10    0.000  0.596  0.938  0.767  1.101  0.744  1.022  0.818  1.183  0.886  1.184  0.875  1.168  0.812
11    0.000  0.660  1.005  0.932  1.237  0.916  1.201  0.995  1.323  1.017  1.314  1.042  1.322  0.993
12    0.415  0.678  0.624  1.060  0.785  1.112  0.818  1.140  0.848  1.184  0.868  1.183  0.841  1.076
13    0.538  0.770  0.756  1.169  0.944  1.252  0.964  1.219  0.949  1.283  1.008  1.284  0.962  1.174
14    0.684  0.641  0.986  0.800  1.094  0.802  1.066  0.683  0.927  0.789  1.121  0.781  1.043  0.787
15    0.750  0.770  1.108  0.967  1.219  0.948  1.184  0.801  1.029  0.933  1.252  0.920  1.160  0.910
16    0.536  0.858  0.721  1.070  0.762  1.075  0.786  1.067  0.784  1.133  0.843  1.138  0.809  1.053
17    0.540  0.849  0.795  1.068  0.837  1.159  0.940  1.265  0.999  1.316  1.027  1.319  0.995  1.211
18    0.000  0.536  0.815  0.582  0.845  0.700  1.036  0.961  1.163  0.862  1.165  0.865  1.173  0.841
19    0.000  0.562  0.818  0.653  0.881  0.788  1.104  0.783  1.261  1.151  1.285  1.021  1.299  0.973
20    0.000  0.573  0.555  0.829  0.667  1.019  0.729  1.038  0.771  0.940  0.815  1.151  0.808  0.965
21    0.000  0.399  0.597  0.886  0.812  1.113  0.919  1.107  0.866  1.175  0.959  1.268  0.951  1.073
22    0.000  0.000  0.559  0.571  0.882  0.708  0.994  0.648  0.844  0.723  1.055  0.816  1.135  0.814
23    0.000  0.000  0.000  0.563  0.847  0.791  1.033  0.750  0.956  0.835  1.166  0.976  1.298  1.019
24    0.000  0.000  0.000  0.000  0.528  0.824  0.699  0.957  0.728  1.082  0.826  1.105  0.828  1.170
25    0.000  0.000  0.000  0.000  0.000  0.710  0.741  1.005  0.867  1.154  0.946  1.201  0.984  1.304
26    0.000  0.000  0.000  0.000  0.000  0.000  0.652  0.647  0.901  0.727  0.957  0.657  0.921  0.776
27    0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.566  0.776  0.689  0.840  0.657  0.835  0.798
28    0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.552  0.522  0.735
```

**** CLUSTER WISE POWER ****

J I	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1	0.719	0.746	0.559	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.980	0.637	0.772	0.641	0.842	0.632	0.694	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	1.228	0.861	1.023	0.892	1.123	0.901	0.976	0.705	0.000	0.000	0.000	0.000	0.000	0.000
4	0.906	1.210	0.858	1.188	0.851	1.133	0.808	0.968	0.628	0.000	0.000	0.000	0.000	0.000
5	1.067	1.373	1.051	1.382	1.063	1.265	0.967	1.170	0.891	0.851	0.000	0.000	0.000	0.000
6	1.226	0.904	1.241	0.876	1.113	0.757	1.014	0.829	1.137	0.807	0.845	0.000	0.000	0.000
7	1.315	1.068	1.414	1.044	1.266	0.870	1.155	1.063	1.357	1.035	1.124	0.794	0.000	0.000
8	0.734	1.188	1.080	1.268	0.900	1.199	0.864	1.321	0.956	1.263	0.889	1.054	0.860	0.000
9	0.855	1.291	0.897	1.419	1.297	1.441	1.109	1.430	1.148	1.358	1.016	1.184	0.869	0.000
10	1.123	0.855	1.215	0.887	1.052	0.921	1.291	0.926	1.170	0.791	1.027	0.832	0.973	0.000
11	1.295	1.040	1.378	1.058	1.368	1.112	1.445	1.073	1.307	0.956	1.146	0.982	1.072	0.000
12	0.799	1.179	0.891	1.254	0.916	1.274	0.937	1.284	0.923	1.227	0.926	1.236	0.839	0.812
13	0.923	1.284	1.037	1.389	1.078	1.370	1.068	1.447	1.147	1.486	1.209	1.432	1.045	0.978
14	1.065	0.790	1.118	0.881	1.196	0.775	1.063	0.918	1.341	0.996	1.428	0.971	1.170	0.745
15	1.190	0.940	1.259	1.054	1.351	0.925	1.199	1.103	1.522	1.193	1.547	1.117	1.212	0.808
16	0.785	1.163	0.893	1.272	0.933	1.254	0.924	1.334	1.004	1.373	1.001	1.131	0.745	0.830
17	0.960	1.360	1.111	1.474	1.157	1.501	1.173	1.528	1.197	1.539	1.191	1.213	0.842	0.765
18	1.177	0.909	1.303	0.980	1.321	0.995	1.358	0.987	1.319	1.052	1.397	0.947	1.030	0.000
19	1.293	1.073	1.456	1.132	1.472	1.175	1.482	1.073	1.391	1.229	1.517	1.129	1.099	0.000
20	0.735	1.195	0.940	1.331	0.984	1.343	0.927	1.086	0.852	1.341	1.014	1.210	0.785	0.000
21	0.865	1.329	1.106	1.465	1.149	1.485	1.099	1.251	1.001	1.405	1.140	1.181	0.850	0.000
22	1.144	0.883	1.248	0.924	1.245	0.948	1.376	0.953	1.278	0.950	1.139	0.740	0.000	0.000
23	1.340	1.051	1.344	0.985	1.290	1.160	1.481	1.146	1.351	1.011	0.976	0.000	0.000	0.000
24	0.866	1.185	0.824	1.030	0.769	1.234	0.929	1.222	0.872	0.941	0.000	0.000	0.000	0.000
25	1.069	1.333	0.999	1.062	0.852	1.227	1.016	1.123	0.794	0.000	0.000	0.000	0.000	0.000
26	1.129	0.830	1.094	0.771	1.004	0.779	0.972	0.667	0.000	0.000	0.000	0.000	0.000	0.000
27	1.070	0.886	1.026	0.798	0.930	0.774	0.777	0.000	0.000	0.000	0.000	0.000	0.000	0.000
28	0.623	0.773	0.572	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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EUREKA-ATR ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR

*** NORMALIZED AXIAL POWER ***

K H	1	2	3	4	5	6	7	8	9	10
1	0.824	0.856	0.882	0.911	0.827	0.822	0.867	0.912	0.826	0.861
2	1.099	1.071	1.114	1.154	1.036	1.053	1.099	1.150	1.038	1.084
3	1.214	1.140	1.194	1.241	1.112	1.134	1.184	1.233	1.109	1.163
4	1.152	1.083	1.134	1.176	1.053	1.080	1.124	1.167	1.048	1.101
5	1.136	1.066	1.115	1.153	1.049	1.065	1.107	1.142	1.042	1.088
6	1.115	1.043	1.091	1.127	1.045	1.044	1.085	1.116	1.039	1.074
7	1.087	1.016	1.062	1.096	1.045	1.017	1.058	1.087	1.040	1.061
8	1.050	0.988	1.028	1.056	1.052	0.984	1.025	1.054	1.048	1.049
9	1.063	0.999	1.041	1.060	1.103	1.003	1.041	1.062	1.103	1.081
10	1.063	1.011	1.043	1.046	1.123	1.017	1.048	1.052	1.126	1.089
11	1.049	1.040	1.038	1.013	1.114	1.046	1.047	1.022	1.120	1.073
12	1.015	1.140	1.024	0.958	1.080	1.150	1.040	0.968	1.089	1.037
13	0.984	1.140	0.998	0.909	1.051	1.149	1.019	0.920	1.058	1.001
14	0.762	0.916	0.805	0.718	0.845	0.934	0.817	0.726	0.849	0.800
15	0.386	0.492	0.430	0.380	0.459	0.501	0.439	0.385	0.460	0.430

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EUREKA-ATR ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR

***** NORMALIZED POWER (AXIS) FOR THERMAL CALCULATION *****

CHANNEL# 1			CHANNEL# 2			CHANNEL# 3			CHANNEL# 4			CHANNEL# 5		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
9	9	8.24322E-01	18	9	8.55636E-01	27	9	8.82340E-01	36	9	9.10527E-01	45	9	8.26742E-01
8	8	1.15653E+00	17	8	1.10584E+00	26	8	1.15355E+00	35	8	1.19728E+00	44	8	1.07399E+00
7	7	1.14435E+00	16	7	1.07434E+00	25	7	1.12453E+00	34	7	1.16475E+00	43	7	1.05100E+00
6	6	1.10088E+00	15	6	1.02944E+00	24	6	1.07690E+00	33	6	1.11150E+00	42	6	1.04517E+00
5	5	1.04979E+00	14	5	9.87758E-01	23	5	1.02844E+00	32	5	1.05618E+00	41	5	1.05174E+00
4	4	1.06312E+00	13	4	1.00498E+00	22	4	1.04211E+00	31	4	1.05296E+00	40	4	1.11312E+00
3	3	1.03237E+00	12	3	1.08979E+00	21	3	1.03105E+00	30	3	9.85443E-01	39	3	1.09729E+00
2	2	8.72915E-01	11	2	1.02769E+00	20	2	9.01162E-01	29	2	8.13160E-01	38	2	9.48100E-01
1	1	3.85516E-01	10	1	4.92254E-01	19	1	4.30065E-01	28	1	3.79665E-01	37	1	4.58998E-01

CHANNEL# 6			CHANNEL# 7			CHANNEL# 8			CHANNEL# 9		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
54	9	8.22372E-01	63	9	8.67294E-01	72	9	9.12094E-01	81	9	8.26131E-01
53	8	1.09372E+00	62	8	1.14170E+00	71	8	1.19177E+00	80	8	1.07319E+00
52	7	1.07242E+00	61	7	1.11514E+00	70	7	1.15480E+00	79	7	1.04482E+00
51	6	1.03042E+00	60	6	1.07121E+00	69	6	1.10123E+00	78	6	1.03937E+00
50	5	9.84318E-01	59	5	1.02486E+00	68	5	1.05366E+00	77	5	1.04806E+00
49	4	1.00990E+00	58	4	1.04437E+00	67	4	1.05716E+00	76	4	1.11455E+00
48	3	1.09816E+00	57	3	1.04362E+00	66	3	9.95034E-01	75	3	1.10466E+00
47	2	1.04160E+00	56	2	9.18345E-01	65	2	8.23006E-01	74	2	9.53927E-01
46	1	5.00640E-01	55	1	4.38523E-01	64	1	3.84782E-01	73	1	4.59635E-01

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EUREKA-ATR ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR

DIFFUSION CALCULATION HAS BEEN PERFORMED

DIF.CALC.STEP	10
TRANSIENT TIME	25.0000 SEC
REACTOR POWER	1.65103E-07 MWT
CORE AVERAGED FUEL TEMP.	19.91 DEG-C
CORE AVERAGED VOID FRAC.	0.00 %
CORE K-EFFECTIVE	0.9911932
EXECUTTED CONDITION	1 (SPECIFIED TIME)
DIF.OF FUEL TEMP	0.01 DEG-C AT SLAB# 9
REACTOR POWER CHANGING RATIO	1.67
CONTROL ROD POSITION	
C/R# 19 (B4C)	73.10 % INSERTED
C/R# 41 (B4C)	73.10 % INSERTED
C/R# 63 (B4C)	73.10 % INSERTED
C/R# 85 (B4C)	73.10 % INSERTED
CPU TIME IN THIS STEP	7.21 SEC
CONVERGENCY CONDITION	0 (CONVERGED)

FOR PLOTTING INFORMATION

ITEM	UNIT	ABSOLUTE MAXIMUM	ABSOLUTE MINIMUM	NORMALIZED MAXIMUM	NORMALIZED MINIMUM
POWER DENSITY	W/CC	1.432E-02	1.152E-03	1.882E+00	1.513E-01
FAST NEUTRON FLUX	N/CM2.S	2.893E+00	2.477E-01	1.679E+00	1.438E-01
THERMAL NEUTRON FLUX	N/CM2.S	1.908E+00	1.569E-01	1.590E+00	1.308E-01
FUEL TEMPERATURE	DEG-C	1.993E+01	1.990E+01	1.002E+00	1.001E+00
VOID FRACTION	%	0.000E+00	0.000E+00	0.000E+00	0.000E+00

***** THERMAL CALCULATION RESULTS *****

CHANNEL# 1 S N / L D	FUEL TEMP(C)	VOID (%)	CHANNEL# 2 S N / L D	FUEL TEMP(C)	VOID (%)	CHANNEL# 3 S N / L D	FUEL TEMP(C)	VOID (%)	CHANNEL# 4 S N / L D	FUEL TEMP(C)	VOID (%)	CHANNEL# 5 S N / L D	FUEL TEMP(C)	VOID (%)
9 9	19.93	0.00	18 9	19.92	0.00	27 9	19.92	0.00	36 9	19.92	0.00	45 9	19.92	0.00
8 8	19.92	0.00	17 8	19.92	0.00	26 8	19.92	0.00	35 8	19.92	0.00	44 8	19.92	0.00
7 7	19.92	0.00	16 7	19.91	0.00	25 7	19.91	0.00	34 7	19.91	0.00	43 7	19.92	0.00
6 6	19.92	0.00	15 6	19.91	0.00	24 6	19.91	0.00	33 6	19.91	0.00	42 6	19.91	0.00
5 5	19.91	0.00	14 5	19.91	0.00	23 5	19.91	0.00	32 5	19.91	0.00	41 5	19.91	0.00
4 4	19.91	0.00	13 4	19.91	0.00	22 4	19.91	0.00	31 4	19.91	0.00	40 4	19.91	0.00
3 3	19.91	0.00	12 3	19.91	0.00	21 3	19.91	0.00	30 3	19.90	0.00	39 3	19.91	0.00
2 2	19.91	0.00	11 2	19.90	0.00	20 2	19.90	0.00	29 2	19.90	0.00	38 2	19.90	0.00
1 1	19.91	0.00	10 1	19.90	0.00	19 1	19.90	0.00	28 1	19.90	0.00	37 1	19.90	0.00

CHANNEL# 6 S N / L D	FUEL TEMP(C)	VOID (%)	CHANNEL# 7 S N / L D	FUEL TEMP(C)	VOID (%)	CHANNEL# 8 S N / L D	FUEL TEMP(C)	VOID (%)	CHANNEL# 9 S N / L D	FUEL TEMP(C)	VOID (%)
54 9	19.92	0.00	63 9	19.92	0.00	72 9	19.92	0.00	81 9	19.92	0.00
53 8	19.92	0.00	62 8	19.92	0.00	71 8	19.92	0.00	80 8	19.92	0.00
52 7	19.91	0.00	61 7	19.91	0.00	70 7	19.91	0.00	79 7	19.92	0.00
51 6	19.91	0.00	60 6	19.91	0.00	69 6	19.91	0.00	78 6	19.91	0.00
50 5	19.91	0.00	59 5	19.91	0.00	68 5	19.91	0.00	77 5	19.91	0.00
49 4	19.91	0.00	58 4	19.91	0.00	67 4	19.91	0.00	76 4	19.91	0.00
48 3	19.91	0.00	57 3	19.90	0.00	66 3	19.90	0.00	75 3	19.91	0.00
47 2	19.90	0.00	56 2	19.90	0.00	65 2	19.90	0.00	74 2	19.90	0.00
46 1	19.90	0.00	55 1	19.90	0.00	64 1	19.90	0.00	73 1	19.90	0.00

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EUREKA-ATR ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR

***** NORMALIZED POWER DISTRIBUTION FOR THERMAL CALCULATION *****

CHANNEL# 1 SLAB	NODE	VALUE	CHANNEL# 2 SLAB	NODE	VALUE	CHANNEL# 3 SLAB	NODE	VALUE	CHANNEL# 4 SLAB	NODE	VALUE	CHANNEL# 5 SLAB	NODE	VALUE
9	9	1.38146E-04	18	9	5.67281E-04	27	9	1.79842E-03	36	9	1.14851E-02	45	9	1.48775E-02
8	8	3.87641E-04	17	8	1.46632E-03	26	8	4.70246E-03	35	8	3.02030E-02	44	8	3.86518E-02
7	7	3.83559E-04	16	7	1.42456E-03	25	7	4.58414E-03	34	7	2.93823E-02	43	7	3.78244E-02
6	6	3.68987E-04	15	6	1.36502E-03	24	6	4.38997E-03	33	6	2.80388E-02	42	6	3.76145E-02
5	5	1.75932E-04	14	5	6.54878E-04	23	5	2.09621E-03	32	5	1.33223E-02	41	5	1.89261E-02
4	4	3.56332E-04	13	4	1.33259E-03	22	4	4.24814E-03	31	4	2.65623E-02	40	4	4.00602E-02
3	3	3.46024E-04	12	3	1.44505E-03	21	3	4.20307E-03	30	3	2.48592E-02	39	3	3.94905E-02
2	2	2.92580E-04	11	2	1.36270E-03	20	2	3.67357E-03	29	2	2.05132E-02	38	2	3.41211E-02
1	1	6.46078E-05	10	1	3.26361E-04	19	1	8.76580E-04	28	1	4.78894E-03	37	1	8.25982E-03

CHANNEL# 6			CHANNEL# 7			CHANNEL# 8			CHANNEL# 9		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
54	9	6.23603E-04	63	9	1.87063E-03	72	9	1.10707E-02	81	9	1.50000E-02
53	8	1.65872E-03	62	8	4.92501E-03	71	8	2.89293E-02	80	8	3.89702E-02
52	7	1.62643E-03	61	7	4.81040E-03	70	7	2.80322E-02	79	7	3.79396E-02
51	6	1.56273E-03	60	6	4.62089E-03	69	6	2.67317E-02	78	6	3.77419E-02
50	5	7.46407E-04	59	5	2.21049E-03	68	5	1.27890E-02	77	5	1.90293E-02
49	4	1.53161E-03	58	4	4.50513E-03	67	4	2.56619E-02	76	4	4.04719E-02
48	3	1.66546E-03	57	3	4.50188E-03	66	3	2.41538E-02	75	3	4.01127E-02
47	2	1.57968E-03	56	2	3.96148E-03	65	2	1.99781E-02	74	2	3.46392E-02
46	1	3.79634E-04	55	1	9.45836E-04	64	1	4.67032E-03	73	1	8.34561E-03

***** WEIGHTING FACTOR FOR DOPPLER REACTIVITY *****

CHANNEL# 1			CHANNEL# 2			CHANNEL# 3			CHANNEL# 4			CHANNEL# 5		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
9	9	1.34153E-04	18	9	3.28896E-04	27	9	1.19739E-03	36	9	8.42477E-03	45	9	1.17616E-02
8	8	5.17277E-04	17	8	1.18280E-03	26	8	4.36036E-03	35	8	3.08466E-02	44	8	4.26032E-02
7	7	5.25801E-04	16	7	1.17917E-03	25	7	4.36848E-03	34	7	3.07457E-02	43	7	4.30967E-02
6	6	4.85701E-04	15	6	1.08074E-03	24	6	4.00664E-03	33	6	2.79949E-02	42	6	4.23001E-02
5	5	2.25515E-04	14	5	5.04755E-04	23	5	1.86029E-03	32	5	1.28855E-02	41	5	2.16288E-02
4	4	4.52822E-04	13	4	1.02604E-03	22	4	3.73761E-03	31	4	2.51328E-02	40	4	4.73319E-02
3	3	4.27621E-04	12	3	1.16677E-03	21	3	3.63071E-03	30	3	2.20496E-02	39	3	4.60773E-02
2	2	2.98693E-04	11	2	9.64846E-04	20	2	2.63377E-03	29	2	1.44119E-02	38	2	3.25982E-02
1	1	2.95184E-05	10	1	1.01784E-04	19	1	2.76273E-04	28	1	1.45438E-03	37	1	3.46715E-03

CHANNEL# 6			CHANNEL# 7			CHANNEL# 8			CHANNEL# 9		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
54	9	4.02014E-04	63	9	1.35271E-03	72	9	7.93934E-03	81	9	1.19609E-02
53	8	1.49743E-03	62	8	4.95938E-03	71	8	2.87787E-02	80	8	4.30599E-02
52	7	1.51462E-03	61	7	4.98099E-03	70	7	2.84557E-02	79	7	4.31024E-02
51	6	1.39610E-03	60	6	4.59011E-03	69	6	2.58851E-02	78	6	4.23363E-02
50	5	6.51277E-04	59	5	2.14659E-03	68	5	1.20809E-02	77	5	2.17636E-02
49	4	1.34136E-03	58	4	4.36542E-03	67	4	2.39124E-02	76	4	4.80763E-02
48	3	1.54223E-03	57	3	4.32326E-03	66	3	2.12504E-02	75	3	4.73737E-02
47	2	1.29129E-03	56	2	3.17756E-03	65	2	1.39484E-02	74	2	3.35953E-02
46	1	1.37372E-04	55	1	3.34994E-04	64	1	1.40824E-03	73	1	3.55545E-03

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EUREKA-ATR ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR

***** WEIGHTING FACTOR FOR VOID REACTIVITY *****

CHANNEL# 1			CHANNEL# 2			CHANNEL# 3			CHANNEL# 4			CHANNEL# 5		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
9	9	9.79288E-05	18	9	2.44521E-04	27	9	9.62290E-04	36	9	6.62503E-03	45	9	1.03896E-02
8	8	3.88570E-04	17	8	9.77113E-04	26	8	3.83653E-03	35	8	2.64388E-02	44	8	4.12405E-02
7	7	4.33806E-04	16	7	1.09826E-03	25	7	4.31520E-03	34	7	2.95509E-02	43	7	4.74471E-02
6	6	4.01683E-04	15	6	1.00931E-03	24	6	3.97218E-03	33	6	2.70058E-02	42	6	4.67507E-02
5	5	1.79200E-04	14	5	4.47285E-04	23	5	1.76744E-03	32	5	1.19167E-02	41	5	2.31180E-02
4	4	3.74556E-04	13	4	9.52851E-04	22	4	3.69859E-03	31	4	2.42445E-02	40	4	5.31669E-02
3	3	3.53204E-04	12	3	1.10310E-03	21	3	3.58056E-03	30	3	2.11878E-02	39	3	5.14432E-02
2	2	2.24376E-04	11	2	8.32896E-04	20	2	2.30268E-03	29	2	1.23088E-02	38	2	3.17052E-02
1	1	2.13895E-05	10	1	7.94175E-05	19	1	2.17028E-04	28	1	1.12130E-03	37	1	3.00967E-03

CHANNEL# 6			CHANNEL# 7			CHANNEL# 8			CHANNEL# 9		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
54	9	3.00100E-04	63	9	1.07968E-03	72	9	6.21742E-03	81	9	1.04984E-02
53	8	1.21049E-03	62	8	4.31971E-03	71	8	2.46424E-02	80	8	4.13448E-02
52	7	1.37096E-03	61	7	4.86137E-03	70	7	2.73472E-02	79	7	4.71275E-02
51	6	1.26696E-03	60	6	4.49324E-03	69	6	2.50011E-02	78	6	4.64418E-02
50	5	5.66182E-04	59	5	2.01698E-03	68	5	1.11603E-02	77	5	2.30812E-02
49	4	1.21667E-03	58	4	4.27302E-03	67	4	2.30375E-02	76	4	5.35143E-02
48	3	1.43435E-03	57	3	4.21840E-03	66	3	2.03861E-02	75	3	5.23483E-02
47	2	1.09471E-03	56	2	2.75648E-03	65	2	1.18996E-02	74	2	3.24092E-02
46	1	1.05048E-04	55	1	2.61073E-04	64	1	1.08469E-03	73	1	3.07548E-03

***** WEIGHTING FACTOR FOR COOLANT TEMPERATURE REACTIVITY *****

CHANNEL# 1			CHANNEL# 2			CHANNEL# 3			CHANNEL# 4			CHANNEL# 5		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
9	9	9.79288E-05	18	9	2.44521E-04	27	9	9.62290E-04	36	9	6.62503E-03	45	9	1.03896E-02
8	8	3.88570E-04	17	8	9.77113E-04	26	8	3.83653E-03	35	8	2.64388E-02	44	8	4.12405E-02
7	7	4.33806E-04	16	7	1.09826E-03	25	7	4.31520E-03	34	7	2.95509E-02	43	7	4.74471E-02
6	6	4.01683E-04	15	6	1.00931E-03	24	6	3.97218E-03	33	6	2.70058E-02	42	6	4.67507E-02
5	5	1.79200E-04	14	5	4.47285E-04	23	5	1.76744E-03	32	5	1.19167E-02	41	5	2.31180E-02
4	4	3.74556E-04	13	4	9.52851E-04	22	4	3.69859E-03	31	4	2.42445E-02	40	4	5.31669E-02
3	3	3.53204E-04	12	3	1.10310E-03	21	3	3.58056E-03	30	3	2.11878E-02	39	3	5.14432E-02
2	2	2.24376E-04	11	2	8.32896E-04	20	2	2.30268E-03	29	2	1.23088E-02	38	2	3.17052E-02
1	1	2.13895E-05	10	1	7.94175E-05	19	1	2.17028E-04	28	1	1.12130E-03	37	1	3.00967E-03

CHANNEL# 6			CHANNEL# 7			CHANNEL# 8			CHANNEL# 9		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
54	9	3.00100E-04	63	9	1.07968E-03	72	9	6.21742E-03	81	9	1.04984E-02
53	8	1.21049E-03	62	8	4.31971E-03	71	8	2.46424E-02	80	8	4.13448E-02
52	7	1.37096E-03	61	7	4.86137E-03	70	7	2.73472E-02	79	7	4.71275E-02
51	6	1.26696E-03	60	6	4.49324E-03	69	6	2.50011E-02	78	6	4.64418E-02
50	5	5.66182E-04	59	5	2.01698E-03	68	5	1.11603E-02	77	5	2.30812E-02
49	4	1.21667E-03	58	4	4.27302E-03	67	4	2.30375E-02	76	4	5.35143E-02
48	3	1.43435E-03	57	3	4.21840E-03	66	3	2.03861E-02	75	3	5.23483E-02
47	2	1.09471E-03	56	2	2.75648E-03	65	2	1.18996E-02	74	2	3.24092E-02
46	1	1.05048E-04	55	1	2.61073E-04	64	1	1.08469E-03	73	1	3.07548E-03

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 CITATION CALCULATION FLG(TIME,TEMP,POWER) =    1       30.00000        0.01755        10.00000        0.10000
1

 EUREKA-ATR/MOD1          ( 1)                    THERMAL REACTOR CORE KINETICS CODE
       ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR
0 CPU TIME =  323.27
    TIME       NORM POWER    TOTAL REACT CONTROL REAC  VOID REACT  WATER T REAC DOPPLER REAC  PERIOD      F ENTH (C/G- F ENTH (C/G-
      SEC          0             0    ¥       0    ¥       0    ¥       0    ¥       0    ¥       0 SEC  SLB  7 UO2)  SLB  8 UO2)
   26.00000  9.97571E+00  4.54154E-01 4.53747E-01 0.00000E+00 -1.67291E-04 5.74278E-04 7.18788E+00 1.07967E+00 1.07985E+00
   27.00000  1.14502E+01  4.54160E-01 4.53747E-01 0.00000E+00 -1.68419E-04 5.81780E-04 7.26882E+00 1.07957E+00 1.07973E+00
   28.00000  1.31246E+01  4.54166E-01 4.53747E-01 0.00000E+00 -1.69420E-04 5.88231E-04 7.33442E+00 1.07948E+00 1.07963E+00
   29.00000  1.50272E+01  4.54170E-01 4.53747E-01 0.00000E+00 -1.70272E-04 5.93780E-04 7.38814E+00 1.07940E+00 1.07954E+00
   30.00000  1.71904E+01  4.54174E-01 4.53747E-01 0.00000E+00 -1.71032E-04 5.98624E-04 7.43232E+00 1.07933E+00 1.07947E+00
1
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(2)過小投入反応度を用いたDBE(パス5)
3次元感度解析

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 EUREKA-ATR/MOD1          ( 1)                    THERMAL REACTOR CORE KINETICS CODE
       ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR
0 CPU TIME =  194.95
 STANDARD TIME STEP NUMBER    250.  ACTUAL TIME STEP NUMBER    269.  TIME = 0.250000E+02 SEC.  LAST DT =  0.100000E+00 SEC.
0
 TOTAL SYSTEM     NORM POWR     POWR          ENERGY        TOT. REAC     DOP. REAC     WAT-T REAC    VOID REAC     EXP. REAC     INSTD REAC
 QUANTITIES                     (MW)          (MWS)         (¥)           (¥)           (¥)           (¥)           (¥)           (¥)
                1.34016E+00   2.57759E-08   5.19779E-07   1.23135E-01   5.96061E-04  -1.72085E-04   0.00000E+00   0.00000E+00   1.22711E-01
0 VOLUME        AVG. PRES     TOT. MASS     AVG. ENTH     AVG. DENS     AVG. TEMP     AVG. QUAL     LIQ. MASS
  NUMBER        (KG/CM**2A)   (KG) H2O       (KC/KG)      (KG/M3)       (C)                         (KG)
     1          3.19550E+00   1.17893E+00   2.00005E+01   9.98518E+02   1.99019E+01   0.00000E+00   1.17893E+00
     2          3.12598E+00   2.35885E+00   2.00004E+01   9.98515E+02   1.99033E+01   0.00000E+00   2.35885E+00
     3          3.01275E+00   2.35884E+00   2.00000E+01   9.98509E+02   1.99054E+01   0.00000E+00   2.35884E+00
     4          2.90823E+00   2.35883E+00   1.99999E+01   9.98504E+02   1.99076E+01   0.00000E+00   2.35883E+00
     5          2.81219E+00   1.17891E+00   1.99996E+01   9.98500E+02   1.99094E+01   0.00000E+00   1.17891E+00
     6          2.72485E+00   2.35881E+00   1.99999E+01   9.98495E+02   1.99117E+01   0.00000E+00   2.35881E+00
     7          2.60255E+00   2.35879E+00   1.99999E+01   9.98489E+02   1.99143E+01   0.00000E+00   2.35879E+00
     8          2.48013E+00   2.35878E+00   2.00000E+01   9.98483E+02   1.99172E+01   0.00000E+00   2.35878E+00
     9          2.40144E+00   1.17889E+00   1.99999E+01   9.98480E+02   1.99188E+01   0.00000E+00   1.17889E+00
    10          3.23125E+00   9.43346E+00   1.99979E+01   9.98520E+02   1.98985E+01   0.00000E+00   9.43346E+00
    11          3.14934E+00   1.88679E+01   1.99976E+01   9.98516E+02   1.98999E+01   0.00000E+00   1.88679E+01
    12          3.04007E+00   1.88678E+01   1.99970E+01   9.98511E+02   1.99018E+01   0.00000E+00   1.88678E+01
    13          2.93068E+00   1.88677E+01   1.99966E+01   9.98506E+02   1.99038E+01   0.00000E+00   1.88677E+01
    14          2.82860E+00   9.43328E+00   1.99961E+01   9.98501E+02   1.99055E+01   0.00000E+00   9.43328E+00
    15          2.74648E+00   1.88675E+01   1.99960E+01   9.98497E+02   1.99073E+01   0.00000E+00   1.88675E+01
    16          2.62692E+00   1.88674E+01   1.99957E+01   9.98491E+02   1.99096E+01   0.00000E+00   1.88674E+01
    17          2.49725E+00   1.88673E+01   1.99954E+01   9.98485E+02   1.99122E+01   0.00000E+00   1.88673E+01
    18          2.40493E+00   9.43309E+00   1.99951E+01   9.98481E+02   1.99139E+01   0.00000E+00   9.43309E+00
    19          3.23423E+00   2.59435E+01   1.99979E+01   9.98520E+02   1.98984E+01   0.00000E+00   2.59435E+01
    20          3.15225E+00   5.18859E+01   1.99976E+01   9.98517E+02   1.98999E+01   0.00000E+00   5.18859E+01
    21          3.04294E+00   5.18856E+01   1.99970E+01   9.98511E+02   1.99017E+01   0.00000E+00   5.18856E+01
    22          2.93352E+00   5.18853E+01   1.99966E+01   9.98506E+02   1.99037E+01   0.00000E+00   5.18853E+01
    23          2.83139E+00   2.59430E+01   1.99961E+01   9.98501E+02   1.99055E+01   0.00000E+00   2.59430E+01
    24          2.74924E+00   5.18849E+01   1.99959E+01   9.98497E+02   1.99071E+01   0.00000E+00   5.18849E+01
    25          2.62961E+00   5.18846E+01   1.99957E+01   9.98492E+02   1.99095E+01   0.00000E+00   5.18846E+01
    26          2.49985E+00   5.18842E+01   1.99955E+01   9.98485E+02   1.99122E+01   0.00000E+00   5.18842E+01
    27          2.40749E+00   2.59425E+01   1.99951E+01   9.98481E+02   1.99138E+01   0.00000E+00   2.59425E+01
    28          3.25230E+00   1.46225E+02   1.99975E+01   9.98521E+02   1.98976E+01   0.00000E+00   1.46225E+02
    29          3.16979E+00   2.92449E+02   1.99973E+01   9.98517E+02   1.98992E+01   0.00000E+00   2.92449E+02
    30          3.05978E+00   2.92447E+02   1.99967E+01   9.98512E+02   1.99010E+01   0.00000E+00   2.92447E+02
    31          2.94969E+00   2.92445E+02   1.99962E+01   9.98507E+02   1.99030E+01   0.00000E+00   2.92445E+02
    32          2.84696E+00   1.46222E+02   1.99957E+01   9.98502E+02   1.99047E+01   0.00000E+00   1.46222E+02
    33          2.75422E+00   2.92443E+02   1.99955E+01   9.98498E+02   1.99066E+01   0.00000E+00   2.92443E+02
    34          2.63381E+00   2.92441E+02   1.99952E+01   9.98492E+02   1.99090E+01   0.00000E+00   2.92441E+02
    35          2.50330E+00   2.92439E+02   1.99949E+01   9.98486E+02   1.99115E+01   0.00000E+00   2.92439E+02
    36          2.42041E+00   1.46219E+02   1.99946E+01   9.98482E+02   1.99131E+01   0.00000E+00   1.46219E+02
    37          3.20316E+00   1.81601E+02   1.99984E+01   9.98519E+02   1.98995E+01   0.00000E+00   1.81601E+02
    38          3.12157E+00   3.63201E+02   1.99981E+01   9.98515E+02   1.99011E+01   0.00000E+00   3.63201E+02
    39          3.01278E+00   3.63199E+02   1.99976E+01   9.98510E+02   1.99030E+01   0.00000E+00   3.63199E+02
    40          2.90388E+00   3.63198E+02   1.99973E+01   9.98505E+02   1.99050E+01   0.00000E+00   3.63198E+02
    41          2.80228E+00   1.81598E+02   1.99967E+01   9.98500E+02   1.99067E+01   0.00000E+00   1.81598E+02
    42          2.72053E+00   3.63194E+02   1.99967E+01   9.98496E+02   1.99085E+01   0.00000E+00   3.63194E+02
    43          2.59155E+00   3.63192E+02   1.99964E+01   9.98490E+02   1.99111E+01   0.00000E+00   3.63192E+02
    44          2.46247E+00   3.63190E+02   1.99964E+01   9.98483E+02   1.99139E+01   0.00000E+00   3.63190E+02
    45          2.38051E+00   1.81594E+02   1.99961E+01   9.98479E+02   1.99155E+01   0.00000E+00   1.81594E+02
    46          3.23136E+00   9.43346E+00   1.99979E+01   9.98520E+02   1.98985E+01   0.00000E+00   9.43346E+00
    47          3.14942E+00   1.88679E+01   1.99976E+01   9.98516E+02   1.99000E+01   0.00000E+00   1.88679E+01
    48          3.04014E+00   1.88678E+01   1.99971E+01   9.98511E+02   1.99019E+01   0.00000E+00   1.88678E+01
    49          2.93078E+00   1.88677E+01   1.99966E+01   9.98506E+02   1.99038E+01   0.00000E+00   1.88677E+01
    50          2.82872E+00   9.43328E+00   1.99961E+01   9.98501E+02   1.99056E+01   0.00000E+00   9.43328E+00
    51          2.74657E+00   1.88675E+01   1.99960E+01   9.98497E+02   1.99073E+01   0.00000E+00   1.88675E+01
    52          2.62698E+00   1.88674E+01   1.99957E+01   9.98491E+02   1.99096E+01   0.00000E+00   1.88674E+01
    53          2.49730E+00   1.88673E+01   1.99955E+01   9.98485E+02   1.99123E+01   0.00000E+00   1.88673E+01
    54          2.40496E+00   9.43309E+00   1.99953E+01   9.98481E+02   1.99140E+01   0.00000E+00   9.43309E+00
    55          3.23827E+00   2.47636E+01   1.99976E+01   9.98521E+02   1.98980E+01   0.00000E+00   2.47636E+01
    56          3.15596E+00   4.95270E+01   1.99973E+01   9.98517E+02   1.98995E+01   0.00000E+00   4.95270E+01
    57          3.04615E+00   4.95267E+01   1.99968E+01   9.98512E+02   1.99014E+01   0.00000E+00   4.95267E+01
    58          2.93629E+00   4.95265E+01   1.99962E+01   9.98506E+02   1.99032E+01   0.00000E+00   4.95265E+01
    59          2.83452E+00   2.47631E+01   1.99956E+01   9.98502E+02   1.99049E+01   0.00000E+00   2.47631E+01
    60          2.75196E+00   4.95261E+01   1.99954E+01   9.98498E+02   1.99065E+01   0.00000E+00   4.95261E+01
    61          2.63221E+00   4.95258E+01   1.99951E+01   9.98492E+02   1.99089E+01   0.00000E+00   4.95258E+01
    62          2.50266E+00   4.95255E+01   1.99949E+01   9.98486E+02   1.99115E+01   0.00000E+00   4.95255E+01
    63          2.41031E+00   2.47626E+01   1.99944E+01   9.98481E+02   1.99131E+01   0.00000E+00   2.47626E+01
    64          3.25226E+00   1.46225E+02   1.99976E+01   9.98521E+02   1.98977E+01   0.00000E+00   1.46225E+02
    65          3.16981E+00   2.92449E+02   1.99973E+01   9.98517E+02   1.98992E+01   0.00000E+00   2.92449E+02
    66          3.05987E+00   2.92447E+02   1.99967E+01   9.98512E+02   1.99010E+01   0.00000E+00   2.92447E+02
    67          2.94981E+00   2.92445E+02   1.99962E+01   9.98507E+02   1.99030E+01   0.00000E+00   2.92445E+02
    68          2.84691E+00   1.46222E+02   1.99958E+01   9.98502E+02   1.99048E+01   0.00000E+00   1.46222E+02
    69          2.75410E+00   2.92443E+02   1.99956E+01   9.98498E+02   1.99067E+01   0.00000E+00   2.92443E+02
    70          2.63373E+00   2.92441E+02   1.99952E+01   9.98492E+02   1.99089E+01   0.00000E+00   2.92441E+02
    71          2.50308E+00   2.92439E+02   1.99949E+01   9.98486E+02   1.99115E+01   0.00000E+00   2.92439E+02
    72          2.42024E+00   1.46219E+02   1.99945E+01   9.98482E+02   1.99130E+01   0.00000E+00   1.46219E+02
    73          3.20325E+00   1.81601E+02   1.99983E+01   9.98519E+02   1.98995E+01   0.00000E+00   1.81601E+02
    74          3.12164E+00   3.63201E+02   1.99982E+01   9.98515E+02   1.99011E+01   0.00000E+00   3.63201E+02
    75          3.01284E+00   3.63199E+02   1.99977E+01   9.98510E+02   1.99030E+01   0.00000E+00   3.63199E+02
    76          2.90394E+00   3.63198E+02   1.99973E+01   9.98505E+02   1.99051E+01   0.00000E+00   3.63198E+02
    77          2.80233E+00   1.81598E+02   1.99967E+01   9.98500E+02   1.99068E+01   0.00000E+00   1.81598E+02
    78          2.72058E+00   3.63194E+02   1.99967E+01   9.98496E+02   1.99086E+01   0.00000E+00   3.63194E+02
    79          2.59155E+00   3.63192E+02   1.99966E+01   9.98490E+02   1.99112E+01   0.00000E+00   3.63192E+02
    80          2.46250E+00   3.63190E+02   1.99963E+01   9.98483E+02   1.99139E+01   0.00000E+00   3.63190E+02
    81          2.38054E+00   1.81594E+02   1.99960E+01   9.98479E+02   1.99153E+01   0.00000E+00   1.81594E+02
    82          3.85907E+00   3.34274E+01   2.00014E+01   9.98550E+02   1.98881E+01   0.00000E+00   3.34274E+01
    83          3.86333E+00   2.01174E+02   1.99989E+01   9.98551E+02   1.98855E+01   0.00000E+00   2.01174E+02
    84          3.86474E+00   5.49014E+02   1.99989E+01   9.98551E+02   1.98854E+01   0.00000E+00   5.49014E+02
    85          3.87846E+00   2.97059E+03   1.99986E+01   9.98552E+02   1.98849E+01   0.00000E+00   2.97059E+03
    86          3.84973E+00   4.15374E+03   1.99994E+01   9.98550E+02   1.98863E+01   0.00000E+00   4.15374E+03
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87	3.86351E+00	2.01174E+02	1.99989E+01	9.98551E+02	1.98855E+01	0.00000E+00	2.01174E+02	
88	3.86977E+00	5.15582E+02	1.99986E+01	9.98551E+02	1.98850E+01	0.00000E+00	5.15582E+02	
89	3.87804E+00	2.97059E+03	1.99986E+01	9.98552E+02	1.98849E+01	0.00000E+00	2.97059E+03	
90	3.83996E+00	4.15374E+03	1.99994E+01	9.98550E+02	1.98865E+01	0.00000E+00	4.15374E+03	
91	1.72829E+00	9.84715E+01	2.00333E+01	9.98441E+02	1.99671E+01	0.00000E+00	9.84715E+01	
92	1.72883E+00	7.70978E+02	2.00268E+01	9.98442E+02	1.99606E+01	0.00000E+00	7.70978E+02	
93	1.73010E+00	2.15602E+03	2.00272E+01	9.98442E+02	1.99609E+01	0.00000E+00	2.15602E+03	
94	1.73142E+00	1.20937E+04	2.00260E+01	9.98442E+02	1.99597E+01	0.00000E+00	1.20937E+04	
95	1.71671E+00	1.24350E+04	2.00232E+01	9.98442E+02	1.99572E+01	0.00000E+00	1.24350E+04	
96	1.72885E+00	7.70998E+02	2.00268E+01	9.98442E+02	1.99606E+01	0.00000E+00	7.70998E+02	
97	1.73161E+00	2.05801E+03	2.00254E+01	9.98442E+02	1.99591E+01	0.00000E+00	2.05801E+03	
98	1.74139E+00	1.20937E+04	2.00262E+01	9.98443E+02	1.99597E+01	0.00000E+00	1.20937E+04	
99	1.71672E+00	1.24350E+04	2.00232E+01	9.98442E+02	1.99572E+01	0.00000E+00	1.24350E+04	
100	4.50517E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98712E+01	0.00000E+00	8.86301E+03	
101	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05	
102	4.50545E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98712E+01	0.00000E+00	8.86301E+03	
103	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05	

0 HEAT SLAB NUMBER	VOL NUM	H.T. MODE	SURF FLUX (KC/HR/M2)	CRIT FLUX (KC/HR/M2)	H.T. COEF (KC/H/M2/C)	SURF TEMP (C)	LOCAL ENGY (CAL/G-U02)	VOID FRAC	LOCAL MASS FLUX	LOCAL FLUID TEMP.
1	1	1	6.09513E+00	6.99671E+06	1.05395E+04	1.99026E+01	1.07897E+00	0.00000E+00	4.68643E+06	1.99019E+01
2	2	1	6.15131E+00	5.85678E+06	1.05131E+04	1.99040E+01	1.07907E+00	0.00000E+00	4.68643E+06	1.99033E+01
3	3	1	8.58566E-01	5.82862E+06	1.04696E+04	1.99057E+01	1.07921E+00	0.00000E+00	4.68643E+06	1.99054E+01
4	4	1	2.39945E+00	6.14387E+06	1.04289E+04	1.99081E+01	1.07936E+00	0.00000E+00	4.68643E+06	1.99076E+01
5	5	1	1.92977E+00	6.95275E+06	1.03909E+04	1.99098E+01	1.07947E+00	0.00000E+00	4.68643E+06	1.99094E+01
6	6	1	1.24259E+01	6.94269E+06	1.03558E+04	1.99130E+01	1.07961E+00	0.00000E+00	4.68643E+06	1.99117E+01
7	7	1	4.75551E+00	6.92857E+06	1.03058E+04	1.99151E+01	1.07979E+00	0.00000E+00	4.68643E+06	1.99143E+01
8	8	1	4.84620E+00	6.91440E+06	1.02546E+04	1.99180E+01	1.07998E+00	0.00000E+00	4.68643E+06	1.99172E+01
9	9	1	1.19658E+01	6.35860E+06	1.02212E+04	1.99202E+01	1.08008E+00	0.00000E+00	4.68643E+06	1.99188E+01
10	10	1	0.00000E+00	7.00078E+06	0.00000E+00	1.98986E+01	1.07872E+00	0.00000E+00	4.81002E+06	1.98985E+01
11	11	1	-5.81939E+00	5.85901E+06	1.07434E+04	1.98996E+01	1.07882E+00	0.00000E+00	4.81002E+06	1.98999E+01
12	12	1	-5.25613E+00	5.83122E+06	1.07007E+04	1.99015E+01	1.07894E+00	0.00000E+00	4.81002E+06	1.99018E+01
13	13	1	2.54995E+00	6.14614E+06	1.06573E+04	1.99042E+01	1.07907E+00	0.00000E+00	4.81002E+06	1.99038E+01
14	14	1	3.90063E+00	6.95463E+06	1.06162E+04	1.99061E+01	1.07918E+00	0.00000E+00	4.81002E+06	1.99055E+01
15	15	1	7.16262E+00	6.94517E+06	1.05826E+04	1.99081E+01	1.07930E+00	0.00000E+00	4.81002E+06	1.99073E+01
16	16	1	2.66581E+00	6.93137E+06	1.05329E+04	1.99100E+01	1.07945E+00	0.00000E+00	4.81002E+06	1.99096E+01
17	17	1	1.90881E+00	6.91637E+06	1.04777E+04	1.99126E+01	1.07962E+00	0.00000E+00	4.81002E+06	1.99122E+01
18	18	1	8.00143E+00	6.35897E+06	1.04378E+04	1.99149E+01	1.07974E+00	0.00000E+00	4.81002E+06	1.99139E+01
19	19	1	0.00000E+00	7.00112E+06	0.00000E+00	1.98985E+01	1.07871E+00	0.00000E+00	4.81191E+06	1.98984E+01
20	20	1	2.66489E+00	5.85929E+06	1.07479E+04	1.99002E+01	1.07882E+00	0.00000E+00	4.81191E+06	1.98999E+01
21	21	1	2.25754E+00	5.83150E+06	1.07052E+04	1.99021E+01	1.07894E+00	0.00000E+00	4.81191E+06	1.99017E+01
22	22	1	6.27580E+00	6.14643E+06	1.06618E+04	1.99045E+01	1.07907E+00	0.00000E+00	4.81191E+06	1.99037E+01
23	23	1	3.76529E+00	6.95495E+06	1.06207E+04	1.99060E+01	1.07917E+00	0.00000E+00	4.81191E+06	1.99055E+01
24	24	1	7.43087E-01	6.94549E+06	1.05871E+04	1.99073E+01	1.07929E+00	0.00000E+00	4.81191E+06	1.99071E+01
25	25	1	5.75237E+00	6.93169E+06	1.05373E+04	1.99102E+01	1.07945E+00	0.00000E+00	4.81191E+06	1.99095E+01
26	26	1	9.38349E+00	6.91667E+06	1.04821E+04	1.99133E+01	1.07962E+00	0.00000E+00	4.81190E+06	1.99122E+01
27	27	1	6.40966E+00	6.35924E+06	1.04422E+04	1.99146E+01	1.07973E+00	0.00000E+00	4.81190E+06	1.99138E+01
28	28	1	-7.34342E+00	7.00318E+06	1.08774E+04	1.98972E+01	1.07867E+00	0.00000E+00	4.86265E+06	1.98976E+01
29	29	1	0.00000E+00	5.86096E+06	0.00000E+00	1.98993E+01	1.07877E+00	0.00000E+00	4.86265E+06	1.98992E+01
30	30	1	4.69207E-01	5.83311E+06	1.08020E+04	1.99012E+01	1.07889E+00	0.00000E+00	4.86265E+06	1.99010E+01
31	31	1	4.48673E+00	6.14807E+06	1.07582E+04	1.99035E+01	1.07901E+00	0.00000E+00	4.86264E+06	1.99030E+01
32	32	1	2.83728E+00	6.95674E+06	1.07165E+04	1.99051E+01	1.07912E+00	0.00000E+00	4.86264E+06	1.99047E+01
33	33	1	-6.67275E-01	6.94606E+06	1.06784E+04	1.99067E+01	1.07925E+00	0.00000E+00	4.86264E+06	1.99066E+01
34	34	1	9.01057E+00	6.93217E+06	1.06279E+04	1.99100E+01	1.07941E+00	0.00000E+00	4.86264E+06	1.99090E+01
35	35	1	3.32615E+00	6.91707E+06	1.05719E+04	1.99121E+01	1.07958E+00	0.00000E+00	4.86264E+06	1.99115E+01
36	36	1	1.10408E+01	6.36061E+06	1.05359E+04	1.99143E+01	1.07967E+00	0.00000E+00	4.86264E+06	1.99131E+01
37	37	1	0.00000E+00	6.99757E+06	0.00000E+00	1.98997E+01	1.07879E+00	0.00000E+00	4.78108E+06	1.98995E+01
38	38	1	1.56142E+00	5.85634E+06	1.06809E+04	1.99014E+01	1.07890E+00	0.00000E+00	4.78107E+06	1.99011E+01
39	39	1	-1.69918E+00	5.82861E+06	1.06384E+04	1.99030E+01	1.07903E+00	0.00000E+00	4.78107E+06	1.99030E+01
40	40	1	4.83237E+00	6.14342E+06	1.05953E+04	1.99056E+01	1.07915E+00	0.00000E+00	4.78107E+06	1.99050E+01
41	41	1	-4.95855E-01	6.95160E+06	1.05544E+04	1.99068E+01	1.07926E+00	0.00000E+00	4.78107E+06	1.99067E+01
42	42	1	3.30188E+00	6.94218E+06	1.05210E+04	1.99090E+01	1.07939E+00	0.00000E+00	4.78107E+06	1.99085E+01
43	43	1	2.02716E+00	6.92728E+06	1.04673E+04	1.99116E+01	1.07956E+00	0.00000E+00	4.78107E+06	1.99111E+01
44	44	1	6.43442E+00	6.91234E+06	1.04124E+04	1.99148E+01	1.07974E+00	0.00000E+00	4.78107E+06	1.99139E+01
45	45	1	8.67620E+00	6.35635E+06	1.03769E+04	1.99165E+01	1.07984E+00	0.00000E+00	4.78107E+06	1.99155E+01
46	46	1	0.00000E+00	7.00080E+06	0.00000E+00	1.98986E+01	1.07873E+00	0.00000E+00	4.81038E+06	1.98985E+01
47	47	1	1.76798E+00	5.85902E+06	1.07441E+04	1.99003E+01	1.07882E+00	0.00000E+00	4.81038E+06	1.99000E+01
48	48	1	1.74773E+00	5.83124E+06	1.07013E+04	1.99022E+01	1.07895E+00	0.00000E+00	4.81038E+06	1.99019E+01
49	49	1	1.36428E+00	6.14616E+06	1.06580E+04	1.99041E+01	1.07908E+00	0.00000E+00	4.81038E+06	1.99038E+01
50	50	1	-1.43322E+00	6.95465E+06	1.06169E+04	1.99057E+01	1.07918E+00	0.00000E+00	4.81038E+06	1.99056E+01
51	51	1	-3.49141E-01	6.94519E+06	1.05833E+04	1.99074E+01	1.07929E+00	0.00000E+00	4.81038E+06	1.99073E+01
52	52	1	1.65508E+00	6.93139E+06	1.05335E+04	1.99099E+01	1.07945E+00	0.00000E+00	4.81038E+06	1.99096E+01
53	53	1	6.66490E+00	6.91639E+06	1.04784E+04	1.99131E+01	1.07963E+00	0.00000E+00	4.81038E+06	1.99123E+01
54	54	1	1.26648E+01	6.35897E+06	1.04384E+04	1.99154E+01	1.07974E+00	0.00000E+00	4.81038E+06	1.99140E+01
55	55	1	0.00000E+00	7.00159E+06	0.00000E+00	1.98982E+01	1.07869E+00	0.00000E+00	4.95205E+06	1.98980E+01
56	56	1	-3.98295E+00	5.85965E+06	1.09991E+04	1.98993E+01	1.07879E+00	0.00000E+00	4.95205E+06	1.98995E+01
57	57	1	2.18995E+00	5.83182E+06	1.09552E+04	1.99018E+01	1.07891E+00	0.00000E+00	4.95205E+06	1.99014E+01
58	58	1	-2.94825E+00	6.14672E+06	1.09106E+04	1.99032E+01	1.07903E+00	0.00000E+00	4.95205E+06	1.99032E+01
59	59	1	-5.66873E+00	6.95531E+06	1.08687E+04	1.99046E+01	1.07913E+00	0.00000E+00	4.95205E+06	1.99049E+01
60	60	1	-1.38042E+00	6.94581E+06	1.08342E+04	1.99066E+01	1.07924E+00	0.00000E+00	4.95205E+06	1.99065E+01
61	61	1	5.26619E-01	6.93199E+06	1.07832E+04	1.99091E+01	1.07940E+00	0.00000E+00	4.95205E+06	1.99089E+01
62	62	1	6.67539E+00	6.91701E+06	1.07269E+04	1.99123E+01	1.07957E+00	0.00000E+00	4.95205E+06	1.99115E+01
63	63	1	8.99947E-01	6.35954E+06	1.06860E+04	1.99134E+01	1.07967E+00	0.00000E+00	4.95205E+06	1.99131E+01
64	64	1	0.00000E+00	7.00319E+06	0.00000E+00	1.98979E+01	1.07867E+00	0.00000E+00	4.83942E+06	1.98977E+01
65	65	1	0.00000E+00	5.86098E+06	0.00000E+00	1.98994E+01	1.07877E+00	0.00000E+00	4.83942E+06	1.98992E+01
66	66	1	-6.39507E+00	5.83313E+06	1.07608E+04	1.99007E+01	1.07889E+00	0.00000E+00	4.83942E+06	1.99010E+01
67	67	1	-2.96130E+00	6.14809E+06	1.07171E+04	1.99029E+01	1.07902E+00	0.00000E+00	4.83942E+06	1.99030E+01
68	68	1	6.94803E+00	6.95675E+06	1.06756E+04	1.99056E+01	1.07913E+00	0.00000E+00	4.83941E+06	1.99048E+01
69	69	1	5.68090E+00	6.94606E+06	1.06375E+04	1.99074E+01	1.07925E+00	0.00000E+00	4.83941E+06	1.99067E+01
70	70	1	-1.78898E+00	6.93217E+06	1.05872E+04	1.99090E+01	1.07940E+00	0.00000E+00	4.83941E+06	1.99089E+01
71	71	1	-1.53465E+00	6.91705E+06	1.05314E+04	1.99117E+01	1.07958E+00	0.00000E+00	4.83941E+06	1.99115E+01
72	72	1	-7.79558E-02	6.36060E+06	1.04955E+04	1.99132E+01	1.07967E+00	0.00000E+00	4.83941E+06	1.99130E+01
73	73	1	-5.49617E+00	6.99759E+06	1.07131E+04	1.98992E+01	1.07879E+00	0.00000E+00	4.78147E+06	1.98995E+01
74	74	1	2.99441E+00	5.85636E+06	1.06816E+04	1.99015E+01	1.07890E+00	0.00000E+00	4.78146E+06	1.99011E+01
75	75	1	3.24113E-01	5.82863E+06	1.06392E+04	1.99032E+01	1.07903E+00	0.00000E+00	4.78146E+06	1.99030E+01
76	76	1	4.00812E+00	6.14344E+06	1.05960E+04	1.99056E+01	1.07916E+00	0.00000E+00	4.78146E+06	1.99051E+01
77	77	1	5.33723E-02	6.95162E+06	1.05551E+04	1.99069E+01	1.07926E+00	0.00000E+00	4.78146E+06	1.99068E+01

78	78	1	3.10094E+00	6.94219E+06	1.05217E+04	1.99091E+01	1.07939E+00	0.00000E+00	4.78146E+06	1.99086E+01
79	79	1	9.98313E+00	6.92729E+06	1.04680E+04	1.99123E+01	1.07956E+00	0.00000E+00	4.78146E+06	1.99112E+01
80	80	1	4.22793E+00	6.91236E+06	1.04131E+04	1.99145E+01	1.07974E+00	0.00000E+00	4.78146E+06	1.99139E+01
81	81	1	4.79624E+00	6.35637E+06	1.03776E+04	1.99160E+01	1.07983E+00	0.00000E+00	4.78146E+06	1.99153E+01

0 HEAT SLAB NUMBER	VOL NUM	GAP CONDUCTANCE (KCAL/M2/HR/C)	GAP DISTANCE (M)	CENT TEMP (C)	AVG. TEMP (C)	FUEL POWER (MW)
1	1	3.20000E+02	0.00000E+00	1.99079E+01	1.99058E+01	4.09157E-12
2	2	3.20000E+02	0.00000E+00	1.99100E+01	1.99076E+01	1.17248E-11
3	3	3.20000E+02	0.00000E+00	1.99129E+01	1.99101E+01	1.05605E-11
4	4	3.20000E+02	0.00000E+00	1.99158E+01	1.99129E+01	8.71083E-12
5	5	3.20000E+02	0.00000E+00	1.99179E+01	1.99149E+01	3.64715E-12
6	6	3.20000E+02	0.00000E+00	1.99208E+01	1.99175E+01	6.53467E-12
7	7	3.20000E+02	0.00000E+00	1.99244E+01	1.99208E+01	5.63112E-12
8	8	3.20000E+02	0.00000E+00	1.99280E+01	1.99241E+01	4.87872E-12
9	9	3.20000E+02	0.00000E+00	1.99301E+01	1.99260E+01	1.53334E-12
10	10	1.90000E+03	0.00000E+00	1.99027E+01	1.99012E+01	2.04395E-11
11	11	1.90000E+03	0.00000E+00	1.99048E+01	1.99030E+01	5.39315E-11
12	12	1.90000E+03	0.00000E+00	1.99071E+01	1.99052E+01	4.30457E-11
13	13	1.90000E+03	0.00000E+00	1.99099E+01	1.99076E+01	3.26741E-11
14	14	1.90000E+03	0.00000E+00	1.99119E+01	1.99096E+01	1.36537E-11
15	15	1.90000E+03	0.00000E+00	1.99144E+01	1.99119E+01	2.43223E-11
16	16	1.90000E+03	0.00000E+00	1.99174E+01	1.99144E+01	2.10100E-11
17	17	1.90000E+03	0.00000E+00	1.99209E+01	1.99177E+01	1.84889E-11
18	18	1.90000E+03	0.00000E+00	1.99231E+01	1.99197E+01	6.32889E-12
19	19	1.90000E+03	0.00000E+00	1.99025E+01	1.99011E+01	5.57770E-11
20	20	1.90000E+03	0.00000E+00	1.99046E+01	1.99029E+01	1.48243E-10
21	21	1.90000E+03	0.00000E+00	1.99070E+01	1.99051E+01	1.29487E-10
22	22	1.90000E+03	0.00000E+00	1.99096E+01	1.99075E+01	1.05768E-10
23	23	1.90000E+03	0.00000E+00	1.99117E+01	1.99094E+01	4.43581E-11
24	24	1.90000E+03	0.00000E+00	1.99141E+01	1.99115E+01	7.93402E-11
25	25	1.90000E+03	0.00000E+00	1.99173E+01	1.99145E+01	6.84964E-11
26	26	1.90000E+03	0.00000E+00	1.99208E+01	1.99176E+01	6.00192E-11
27	27	1.90000E+03	0.00000E+00	1.99229E+01	1.99196E+01	2.02559E-11
28	28	1.90000E+03	0.00000E+00	1.99017E+01	1.99003E+01	3.03407E-10
29	29	1.90000E+03	0.00000E+00	1.99037E+01	1.99021E+01	8.25561E-10
30	30	1.90000E+03	0.00000E+00	1.99060E+01	1.99042E+01	7.65313E-10
31	31	1.90000E+03	0.00000E+00	1.99085E+01	1.99065E+01	6.58477E-10
32	32	1.90000E+03	0.00000E+00	1.99107E+01	1.99085E+01	2.81326E-10
33	33	1.90000E+03	0.00000E+00	1.99133E+01	1.99108E+01	5.06724E-10
34	34	1.90000E+03	0.00000E+00	1.99164E+01	1.99137E+01	4.39398E-10
35	35	1.90000E+03	0.00000E+00	1.99199E+01	1.99168E+01	3.86003E-10
36	36	1.90000E+03	0.00000E+00	1.99217E+01	1.99185E+01	1.29450E-10
37	37	1.90000E+03	0.00000E+00	1.99042E+01	1.99026E+01	6.17377E-10
38	38	1.90000E+03	0.00000E+00	1.99063E+01	1.99045E+01	1.61379E-09
39	39	1.90000E+03	0.00000E+00	1.99089E+01	1.99068E+01	1.41795E-09
40	40	1.90000E+03	0.00000E+00	1.99115E+01	1.99091E+01	1.14878E-09
41	41	1.90000E+03	0.00000E+00	1.99136E+01	1.99110E+01	4.58727E-10
42	42	1.90000E+03	0.00000E+00	1.99161E+01	1.99134E+01	7.71965E-10
43	43	1.90000E+03	0.00000E+00	1.99196E+01	1.99165E+01	6.34051E-10
44	44	1.90000E+03	0.00000E+00	1.99231E+01	1.99198E+01	5.50054E-10
45	45	1.90000E+03	0.00000E+00	1.99251E+01	1.99216E+01	1.86544E-10
46	46	1.90000E+03	0.00000E+00	1.99028E+01	1.99013E+01	2.33306E-11
47	47	1.90000E+03	0.00000E+00	1.99048E+01	1.99031E+01	6.14604E-11
48	48	1.90000E+03	0.00000E+00	1.99072E+01	1.99053E+01	4.87932E-11
49	49	1.90000E+03	0.00000E+00	1.99098E+01	1.99077E+01	3.69694E-11
50	50	1.90000E+03	0.00000E+00	1.99119E+01	1.99096E+01	1.53238E-11
51	51	1.90000E+03	0.00000E+00	1.99143E+01	1.99117E+01	2.73993E-11
52	52	1.90000E+03	0.00000E+00	1.99174E+01	1.99146E+01	2.35746E-11
53	53	1.90000E+03	0.00000E+00	1.99210E+01	1.99178E+01	2.05482E-11
54	54	1.90000E+03	0.00000E+00	1.99232E+01	1.99198E+01	6.83051E-12
55	55	1.90000E+03	0.00000E+00	1.99020E+01	1.99006E+01	5.89787E-11
56	56	1.90000E+03	0.00000E+00	1.99040E+01	1.99024E+01	1.56830E-10
57	57	1.90000E+03	0.00000E+00	1.99064E+01	1.99046E+01	1.36464E-10
58	58	1.90000E+03	0.00000E+00	1.99089E+01	1.99069E+01	1.10600E-10
59	59	1.90000E+03	0.00000E+00	1.99108E+01	1.99087E+01	4.61468E-11
60	60	1.90000E+03	0.00000E+00	1.99132E+01	1.99107E+01	8.23365E-11
61	61	1.90000E+03	0.00000E+00	1.99163E+01	1.99136E+01	7.07355E-11
62	62	1.90000E+03	0.00000E+00	1.99197E+01	1.99167E+01	6.17762E-11
63	63	1.90000E+03	0.00000E+00	1.99217E+01	1.99186E+01	2.06764E-11
64	64	1.90000E+03	0.00000E+00	1.99018E+01	1.99003E+01	3.03205E-10
65	65	1.90000E+03	0.00000E+00	1.99038E+01	1.99022E+01	8.23624E-10
66	66	1.90000E+03	0.00000E+00	1.99062E+01	1.99043E+01	7.62185E-10
67	67	1.90000E+03	0.00000E+00	1.99086E+01	1.99066E+01	6.52511E-10
68	68	1.90000E+03	0.00000E+00	1.99107E+01	1.99086E+01	2.76979E-10
69	69	1.90000E+03	0.00000E+00	1.99134E+01	1.99109E+01	4.94803E-10
70	70	1.90000E+03	0.00000E+00	1.99164E+01	1.99137E+01	4.28125E-10
71	71	1.90000E+03	0.00000E+00	1.99199E+01	1.99168E+01	3.76862E-10
72	72	1.90000E+03	0.00000E+00	1.99217E+01	1.99185E+01	1.27133E-10
73	73	1.90000E+03	0.00000E+00	1.99042E+01	1.99025E+01	6.29418E-10
74	74	1.90000E+03	0.00000E+00	1.99064E+01	1.99045E+01	1.65389E-09
75	75	1.90000E+03	0.00000E+00	1.99088E+01	1.99068E+01	1.45628E-09
76	76	1.90000E+03	0.00000E+00	1.99114E+01	1.99091E+01	1.17496E-09
77	77	1.90000E+03	0.00000E+00	1.99136E+01	1.99111E+01	4.66976E-10
78	78	1.90000E+03	0.00000E+00	1.99161E+01	1.99134E+01	7.83701E-10
79	79	1.90000E+03	0.00000E+00	1.99195E+01	1.99164E+01	6.42237E-10
80	80	1.90000E+03	0.00000E+00	1.99231E+01	1.99198E+01	5.58981E-10
81	81	1.90000E+03	0.00000E+00	1.99250E+01	1.99214E+01	1.89456E-10

0 SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	1	1.99079E+01	2	1.99078E+01	3	1.99077E+01	4	1.99075E+01	5	1.99072E+01	6	1.99068E+01	7	1.99063E+01
2	1	1.99100E+01	2	1.99099E+01	3	1.99098E+01	4	1.99095E+01	5	1.99092E+01	6	1.99088E+01	7	1.99082E+01
3	1	1.99129E+01	2	1.99128E+01	3	1.99126E+01	4	1.99124E+01	5	1.99120E+01	6	1.99115E+01	7	1.99109E+01
4	1	1.99158E+01	2	1.99157E+01	3	1.99155E+01	4	1.99152E+01	5	1.99148E+01	6	1.99143E+01	7	1.99137E+01
5	1	1.99179E+01	2	1.99178E+01	3	1.99177E+01	4	1.99173E+01	5	1.99169E+01	6	1.99164E+01	7	1.99157E+01
6	1	1.99208E+01	2	1.99207E+01	3	1.99205E+01	4	1.99202E+01	5	1.99197E+01	6	1.99191E+01	7	1.99184E+01
7	1	1.99244E+01	2	1.99243E+01	3	1.99241E+01	4	1.99237E+01	5	1.99232E+01	6	1.99225E+01	7	1.99218E+01
8	1	1.99280E+01	2	1.99280E+01	3	1.99277E+01	4	1.99273E+01	5	1.99268E+01	6	1.99261E+01	7	1.99253E+01
9	1	1.99301E+01	2	1.99300E+01	3	1.99298E+01	4	1.99294E+01	5	1.99288E+01	6	1.99281E+01	7	1.99272E+01
10	1	1.99027E+01	2	1.99027E+01	3	1.99026E+01	4	1.99024E+01	5	1.99022E+01	6	1.99020E+01	7	1.99016E+01
11	1	1.99048E+01	2	1.99047E+01	3	1.99046E+01	4	1.99044E+01	5	1.99042E+01	6	1.99039E+01	7	1.99035E+01
12	1	1.99071E+01	2	1.99071E+01	3	1.99070E+01	4	1.99068E+01	5	1.99065E+01	6	1.99062E+01	7	1.99058E+01
13	1	1.99099E+01	2	1.99098E+01	3	1.99097E+01	4	1.99094E+01	5	1.99091E+01	6	1.99087E+01	7	1.99082E+01
14	1	1.99119E+01	2	1.99118E+01	3	1.99117E+01	4	1.99114E+01	5	1.99111E+01	6	1.99107E+01	7	1.99102E+01
15	1	1.99144E+01	2	1.99143E+01	3	1.99142E+01	4	1.99139E+01	5	1.99135E+01	6	1.99131E+01	7	1.99125E+01
16	1	1.99174E+01	2	1.99173E+01	3	1.99171E+01	4	1.99168E+01	5	1.99164E+01	6	1.99159E+01	7	1.99152E+01
17	1	1.99209E+01	2	1.99209E+01	3	1.99207E+01	4	1.99203E+01	5	1.99199E+01	6	1.99193E+01	7	1.99186E+01
18	1	1.99231E+01	2	1.99230E+01	3	1.99228E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99206E+01
19	1	1.99025E+01	2	1.99025E+01	3	1.99024E+01	4	1.99023E+01	5	1.99021E+01	6	1.99018E+01	7	1.99015E+01
20	1	1.99046E+01	2	1.99046E+01	3	1.99045E+01	4	1.99043E+01	5	1.99041E+01	6	1.99038E+01	7	1.99034E+01
21	1	1.99070E+01	2	1.99069E+01	3	1.99068E+01	4	1.99066E+01	5	1.99064E+01	6	1.99060E+01	7	1.99056E+01
22	1	1.99096E+01	2	1.99096E+01	3	1.99094E+01	4	1.99092E+01	5	1.99089E+01	6	1.99085E+01	7	1.99081E+01
23	1	1.99117E+01	2	1.99116E+01	3	1.99115E+01	4	1.99113E+01	5	1.99109E+01	6	1.99105E+01	7	1.99100E+01
24	1	1.99141E+01	2	1.99141E+01	3	1.99139E+01	4	1.99137E+01	5	1.99133E+01	6	1.99129E+01	7	1.99123E+01
25	1	1.99173E+01	2	1.99173E+01	3	1.99171E+01	4	1.99168E+01	5	1.99164E+01	6	1.99159E+01	7	1.99153E+01
26	1	1.99208E+01	2	1.99208E+01	3	1.99206E+01	4	1.99202E+01	5	1.99198E+01	6	1.99192E+01	7	1.99185E+01
27	1	1.99229E+01	2	1.99228E+01	3	1.99226E+01	4	1.99223E+01	5	1.99218E+01	6	1.99212E+01	7	1.99205E+01
28	1	1.99017E+01	2	1.99016E+01	3	1.99015E+01	4	1.99014E+01	5	1.99012E+01	6	1.99010E+01	7	1.99007E+01
29	1	1.99037E+01	2	1.99036E+01	3	1.99036E+01	4	1.99034E+01	5	1.99032E+01	6	1.99029E+01	7	1.99025E+01
30	1	1.99060E+01	2	1.99060E+01	3	1.99058E+01	4	1.99057E+01	5	1.99054E+01	6	1.99051E+01	7	1.99047E+01
31	1	1.99085E+01	2	1.99085E+01	3	1.99084E+01	4	1.99081E+01	5	1.99078E+01	6	1.99075E+01	7	1.99070E+01
32	1	1.99107E+01	2	1.99106E+01	3	1.99105E+01	4	1.99103E+01	5	1.99100E+01	6	1.99096E+01	7	1.99091E+01
33	1	1.99133E+01	2	1.99132E+01	3	1.99131E+01	4	1.99128E+01	5	1.99125E+01	6	1.99120E+01	7	1.99115E+01
34	1	1.99164E+01	2	1.99164E+01	3	1.99162E+01	4	1.99159E+01	5	1.99155E+01	6	1.99151E+01	7	1.99145E+01
35	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99177E+01
36	1	1.99217E+01	2	1.99216E+01	3	1.99214E+01	4	1.99211E+01	5	1.99206E+01	6	1.99200E+01	7	1.99193E+01
37	1	1.99042E+01	2	1.99042E+01	3	1.99041E+01	4	1.99039E+01	5	1.99037E+01	6	1.99034E+01	7	1.99030E+01
38	1	1.99063E+01	2	1.99063E+01	3	1.99061E+01	4	1.99059E+01	5	1.99057E+01	6	1.99053E+01	7	1.99050E+01
39	1	1.99089E+01	2	1.99089E+01	3	1.99088E+01	4	1.99085E+01	5	1.99082E+01	6	1.99079E+01	7	1.99074E+01
40	1	1.99115E+01	2	1.99114E+01	3	1.99113E+01	4	1.99110E+01	5	1.99107E+01	6	1.99102E+01	7	1.99097E+01
41	1	1.99136E+01	2	1.99135E+01	3	1.99134E+01	4	1.99131E+01	5	1.99128E+01	6	1.99123E+01	7	1.99118E+01
42	1	1.99161E+01	2	1.99161E+01	3	1.99159E+01	4	1.99156E+01	5	1.99152E+01	6	1.99147E+01	7	1.99142E+01
43	1	1.99196E+01	2	1.99195E+01	3	1.99193E+01	4	1.99190E+01	5	1.99186E+01	6	1.99181E+01	7	1.99174E+01
44	1	1.99231E+01	2	1.99231E+01	3	1.99229E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99207E+01
45	1	1.99251E+01	2	1.99250E+01	3	1.99248E+01	4	1.99245E+01	5	1.99240E+01	6	1.99233E+01	7	1.99226E+01
46	1	1.99028E+01	2	1.99028E+01	3	1.99027E+01	4	1.99025E+01	5	1.99023E+01	6	1.99020E+01	7	1.99017E+01
47	1	1.99048E+01	2	1.99047E+01	3	1.99046E+01	4	1.99044E+01	5	1.99042E+01	6	1.99039E+01	7	1.99035E+01
48	1	1.99072E+01	2	1.99072E+01	3	1.99070E+01	4	1.99068E+01	5	1.99066E+01	6	1.99062E+01	7	1.99058E+01
49	1	1.99098E+01	2	1.99098E+01	3	1.99096E+01	4	1.99094E+01	5	1.99091E+01	6	1.99087E+01	7	1.99083E+01
50	1	1.99119E+01	2	1.99118E+01	3	1.99117E+01	4	1.99114E+01	5	1.99111E+01	6	1.99107E+01	7	1.99102E+01
51	1	1.99143E+01	2	1.99143E+01	3	1.99141E+01	4	1.99138E+01	5	1.99134E+01	6	1.99130E+01	7	1.99124E+01
52	1	1.99174E+01	2	1.99174E+01	3	1.99172E+01	4	1.99169E+01	5	1.99165E+01	6	1.99160E+01	7	1.99154E+01
53	1	1.99210E+01	2	1.99209E+01	3	1.99207E+01	4	1.99204E+01	5	1.99199E+01	6	1.99194E+01	7	1.99187E+01
54	1	1.99232E+01	2	1.99231E+01	3	1.99229E+01	4	1.99225E+01	5	1.99221E+01	6	1.99215E+01	7	1.99207E+01
55	1	1.99020E+01	2	1.99020E+01	3	1.99019E+01	4	1.99017E+01	5	1.99015E+01	6	1.99013E+01	7	1.99010E+01
56	1	1.99040E+01	2	1.99040E+01	3	1.99039E+01	4	1.99037E+01	5	1.99035E+01	6	1.99032E+01	7	1.99029E+01
57	1	1.99064E+01	2	1.99063E+01	3	1.99062E+01	4	1.99060E+01	5	1.99058E+01	6	1.99055E+01	7	1.99051E+01
58	1	1.99089E+01	2	1.99088E+01	3	1.99087E+01	4	1.99085E+01	5	1.99082E+01	6	1.99079E+01	7	1.99074E+01
59	1	1.99108E+01	2	1.99108E+01	3	1.99107E+01	4	1.99104E+01	5	1.99101E+01	6	1.99097E+01	7	1.99092E+01
60	1	1.99132E+01	2	1.99131E+01	3	1.99130E+01	4	1.99127E+01	5	1.99124E+01	6	1.99119E+01	7	1.99114E+01
61	1	1.99163E+01	2	1.99162E+01	3	1.99160E+01	4	1.99158E+01	5	1.99154E+01	6	1.99149E+01	7	1.99143E+01
62	1	1.99197E+01	2	1.99196E+01	3	1.99194E+01	4	1.99191E+01	5	1.99187E+01	6	1.99182E+01	7	1.99175E+01
63	1	1.99217E+01	2	1.99217E+01	3	1.99215E+01	4	1.99212E+01	5	1.99207E+01	6	1.99201E+01	7	1.99195E+01
64	1	1.99018E+01	2	1.99017E+01	3	1.99016E+01	4	1.99015E+01	5	1.99013E+01	6	1.99010E+01	7	1.99007E+01
65	1	1.99038E+01	2	1.99037E+01	3	1.99036E+01	4	1.99035E+01	5	1.99032E+01	6	1.99030E+01	7	1.99026E+01
66	1	1.99062E+01	2	1.99061E+01	3	1.99060E+01	4	1.99058E+01	5	1.99056E+01	6	1.99052E+01	7	1.99048E+01
67	1	1.99086E+01	2	1.99086E+01	3	1.99084E+01	4	1.99082E+01	5	1.99079E+01	6	1.99076E+01	7	1.99072E+01
68	1	1.99107E+01	2	1.99107E+01	3	1.99105E+01	4	1.99103E+01	5	1.99100E+01	6	1.99096E+01	7	1.99092E+01
69	1	1.99134E+01	2	1.99133E+01	3	1.99132E+01	4	1.99129E+01	5	1.99126E+01	6	1.99121E+01	7	1.99116E+01
70	1	1.99164E+01	2	1.99163E+01	3	1.99162E+01	4	1.99159E+01	5	1.99155E+01	6	1.99150E+01	7	1.99144E+01
71	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99176E+01
72	1	1.99217E+01	2	1.99216E+01	3	1.99214E+01	4	1.99211E+01	5	1.99206E+01	6	1.99201E+01	7	1.99194E+01
73	1	1.99042E+01	2	1.99041E+01	3	1.99040E+01	4	1.99039E+01	5	1.99036E+01	6	1.99033E+01	7	1.99030E+01
74	1	1.99064E+01	2	1.99063E+01	3	1.99062E+01	4	1.99060E+01	5	1.99058E+01	6	1.99054E+01	7	1.99050E+01
75	1	1.99088E+01	2	1.99088E+01	3	1.99087E+01	4	1.99085E+01	5	1.99082E+01	6	1.99078E+01	7	1.99074E+01
76	1	1.99114E+01	2	1.99114E+01	3	1.99112E+01	4	1.99110E+01	5	1.99106E+01	6	1.99102E+01	7	1.99097E+01
77	1	1.99136E+01	2	1.99136E+01	3	1.99134E+01	4	1.99132E+01	5	1.99128E+01	6	1.99124E+01	7	1.99118E+01
78	1	1.99161E+01	2	1.99161E+01	3	1.99159E+01	4	1.99156E+01	5	1.99152E+01	6	1.99147E+01	7	1.99141E+01
79	1	1.99195E+01	2	1.99194E+01	3	1.99193E+01	4	1.99189E+01	5	1.99185E+01	6	1.99179E+01	7	1.99173E+01
80	1	1.99231E+01	2	1.99230E+01	3	1.99228E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99207E+01
81	1	1.99250E+01	2	1.99250E+01	3	1.99248E+01	4	1.99244E+01	5	1.99239E+01	6	1.99233E+01	7	1.99225E+01

O SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	8	1.99058E+01	9	1.99052E+01	10	1.99046E+01	11	1.99040E+01	12	1.99040E+01	13	1.99037E+01	14	1.99026E+01
2	8	1.99076E+01	9	1.99069E+01	10	1.99062E+01	11	1.99055E+01	12	1.99055E+01	13	1.99052E+01	14	1.99040E+01
3	8	1.99103E+01	9	1.99095E+01	10	1.99086E+01	11	1.99076E+01	12	1.99076E+01	13	1.99071E+01	14	1.99057E+01
4	8	1.99130E+01	9	1.99121E+01	10	1.99112E+01	11	1.99102E+01	12	1.99102E+01	13	1.99095E+01	14	1.99081E+01
5	8	1.99150E+01	9	1.99141E+01	10	1.99131E+01	11	1.99121E+01	12	1.99120E+01	13	1.99114E+01	14	1.99098E+01
6	8	1.99176E+01	9	1.99166E+01	10	1.99157E+01	11	1.99148E+01	12	1.99147E+01	13	1.99143E+01	14	1.99130E+01
7	8	1.99209E+01	9	1.99199E+01	10	1.99187E+01	11	1.99175E+01	12	1.99174E+01	13	1.99167E+01	14	1.99151E+01
8	8	1.99243E+01	9	1.99232E+01	10	1.99220E+01	11	1.99206E+01	12	1.99206E+01	13	1.99197E+01	14	1.99180E+01
9	8	1.99262E+01	9	1.99250E+01	10	1.99237E+01	11	1.99223E+01	12	1.99223E+01	13	1.99215E+01	14	1.99202E+01
10	8	1.99013E+01	9	1.99008E+01	10	1.99004E+01	11	1.99000E+01	12	1.99000E+01	13	1.98998E+01	14	1.98986E+01
11	8	1.99031E+01	9	1.99026E+01	10	1.99021E+01	11	1.99015E+01	12	1.99015E+01	13	1.99010E+01	14	1.98996E+01
12	8	1.99053E+01	9	1.99048E+01	10	1.99042E+01	11	1.99035E+01	12	1.99035E+01	13	1.99030E+01	14	1.99015E+01
13	8	1.99077E+01	9	1.99070E+01	10	1.99064E+01	11	1.99058E+01	12	1.99058E+01	13	1.99055E+01	14	1.99042E+01
14	8	1.99096E+01	9	1.99090E+01	10	1.99083E+01	11	1.99077E+01	12	1.99077E+01	13	1.99074E+01	14	1.99061E+01
15	8	1.99119E+01	9	1.99112E+01	10	1.99104E+01	11	1.99097E+01	12	1.99097E+01	13	1.99094E+01	14	1.99081E+01
16	8	1.99145E+01	9	1.99137E+01	10	1.99129E+01	11	1.99119E+01	12	1.99119E+01	13	1.99114E+01	14	1.99100E+01
17	8	1.99178E+01	9	1.99169E+01	10	1.99158E+01	11	1.99147E+01	12	1.99147E+01	13	1.99141E+01	14	1.99126E+01
18	8	1.99198E+01	9	1.99189E+01	10	1.99179E+01	11	1.99167E+01	12	1.99167E+01	13	1.99161E+01	14	1.99149E+01
19	8	1.99011E+01	9	1.99007E+01	10	1.99002E+01	11	1.98999E+01	12	1.98999E+01	13	1.98997E+01	14	1.98985E+01
20	8	1.99030E+01	9	1.99025E+01	10	1.99020E+01	11	1.99015E+01	12	1.99015E+01	13	1.99013E+01	14	1.99002E+01
21	8	1.99052E+01	9	1.99046E+01	10	1.99041E+01	11	1.99036E+01	12	1.99036E+01	13	1.99033E+01	14	1.99021E+01
22	8	1.99076E+01	9	1.99070E+01	10	1.99064E+01	11	1.99058E+01	12	1.99058E+01	13	1.99056E+01	14	1.99045E+01
23	8	1.99094E+01	9	1.99087E+01	10	1.99081E+01	11	1.99074E+01	12	1.99074E+01	13	1.99072E+01	14	1.99060E+01
24	8	1.99117E+01	9	1.99109E+01	10	1.99101E+01	11	1.99091E+01	12	1.99091E+01	13	1.99086E+01	14	1.99073E+01
25	8	1.99146E+01	9	1.99138E+01	10	1.99129E+01	11	1.99119E+01	12	1.99119E+01	13	1.99114E+01	14	1.99102E+01
26	8	1.99177E+01	9	1.99168E+01	10	1.99158E+01	11	1.99150E+01	12	1.99150E+01	13	1.99146E+01	14	1.99133E+01
27	8	1.99197E+01	9	1.99188E+01	10	1.99178E+01	11	1.99166E+01	12	1.99166E+01	13	1.99160E+01	14	1.99146E+01
28	8	1.99003E+01	9	1.99000E+01	10	1.98995E+01	11	1.98990E+01	12	1.98990E+01	13	1.98986E+01	14	1.98972E+01
29	8	1.99021E+01	9	1.99017E+01	10	1.99012E+01	11	1.99008E+01	12	1.99008E+01	13	1.99006E+01	14	1.98993E+01
30	8	1.99043E+01	9	1.99038E+01	10	1.99032E+01	11	1.99027E+01	12	1.99027E+01	13	1.99025E+01	14	1.99012E+01
31	8	1.99065E+01	9	1.99060E+01	10	1.99054E+01	11	1.99048E+01	12	1.99048E+01	13	1.99046E+01	14	1.99035E+01
32	8	1.99086E+01	9	1.99080E+01	10	1.99073E+01	11	1.99067E+01	12	1.99067E+01	13	1.99064E+01	14	1.99051E+01
33	8	1.99109E+01	9	1.99102E+01	10	1.99095E+01	11	1.99086E+01	12	1.99086E+01	13	1.99081E+01	14	1.99067E+01
34	8	1.99138E+01	9	1.99130E+01	10	1.99122E+01	11	1.99115E+01	12	1.99115E+01	13	1.99111E+01	14	1.99100E+01
35	8	1.99169E+01	9	1.99161E+01	10	1.99152E+01	11	1.99141E+01	12	1.99141E+01	13	1.99135E+01	14	1.99121E+01
36	8	1.99185E+01	9	1.99176E+01	10	1.99167E+01	11	1.99158E+01	12	1.99158E+01	13	1.99154E+01	14	1.99143E+01
37	8	1.99026E+01	9	1.99021E+01	10	1.99016E+01	11	1.99012E+01	12	1.99012E+01	13	1.99010E+01	14	1.98997E+01
38	8	1.99045E+01	9	1.99040E+01	10	1.99034E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99014E+01
39	8	1.99069E+01	9	1.99063E+01	10	1.99057E+01	11	1.99049E+01	12	1.99049E+01	13	1.99044E+01	14	1.99030E+01
40	8	1.99091E+01	9	1.99085E+01	10	1.99078E+01	11	1.99072E+01	12	1.99072E+01	13	1.99069E+01	14	1.99056E+01
41	8	1.99112E+01	9	1.99104E+01	10	1.99096E+01	11	1.99086E+01	12	1.99086E+01	13	1.99081E+01	14	1.99068E+01
42	8	1.99135E+01	9	1.99127E+01	10	1.99119E+01	11	1.99109E+01	12	1.99109E+01	13	1.99104E+01	14	1.99090E+01
43	8	1.99166E+01	9	1.99157E+01	10	1.99147E+01	11	1.99136E+01	12	1.99136E+01	13	1.99130E+01	14	1.99116E+01
44	8	1.99199E+01	9	1.99190E+01	10	1.99180E+01	11	1.99168E+01	12	1.99168E+01	13	1.99162E+01	14	1.99148E+01
45	8	1.99217E+01	9	1.99207E+01	10	1.99197E+01	11	1.99184E+01	12	1.99184E+01	13	1.99178E+01	14	1.99165E+01
46	8	1.99013E+01	9	1.99009E+01	10	1.99004E+01	11	1.99000E+01	12	1.99000E+01	13	1.98998E+01	14	1.98986E+01
47	8	1.99031E+01	9	1.99026E+01	10	1.99021E+01	11	1.99017E+01	12	1.99017E+01	13	1.99014E+01	14	1.99003E+01
48	8	1.99054E+01	9	1.99048E+01	10	1.99043E+01	11	1.99037E+01	12	1.99037E+01	13	1.99035E+01	14	1.99022E+01
49	8	1.99078E+01	9	1.99072E+01	10	1.99065E+01	11	1.99057E+01	12	1.99057E+01	13	1.99053E+01	14	1.99041E+01
50	8	1.99097E+01	9	1.99091E+01	10	1.99084E+01	11	1.99075E+01	12	1.99075E+01	13	1.99070E+01	14	1.99057E+01
51	8	1.99117E+01	9	1.99110E+01	10	1.99102E+01	11	1.99093E+01	12	1.99093E+01	13	1.99088E+01	14	1.99074E+01
52	8	1.99147E+01	9	1.99139E+01	10	1.99130E+01	11	1.99120E+01	12	1.99120E+01	13	1.99113E+01	14	1.99099E+01
53	8	1.99179E+01	9	1.99171E+01	10	1.99161E+01	11	1.99150E+01	12	1.99150E+01	13	1.99144E+01	14	1.99131E+01
54	8	1.99199E+01	9	1.99189E+01	10	1.99179E+01	11	1.99170E+01	12	1.99170E+01	13	1.99166E+01	14	1.99154E+01
55	8	1.99006E+01	9	1.99002E+01	10	1.98998E+01	11	1.98995E+01	12	1.98995E+01	13	1.98993E+01	14	1.98982E+01
56	8	1.99025E+01	9	1.99020E+01	10	1.99015E+01	11	1.99009E+01	12	1.99009E+01	13	1.99005E+01	14	1.98993E+01
57	8	1.99046E+01	9	1.99042E+01	10	1.99036E+01	11	1.99031E+01	12	1.99031E+01	13	1.99029E+01	14	1.99018E+01
58	8	1.99069E+01	9	1.99064E+01	10	1.99058E+01	11	1.99050E+01	12	1.99050E+01	13	1.99045E+01	14	1.99032E+01
59	8	1.99087E+01	9	1.99081E+01	10	1.99075E+01	11	1.99067E+01	12	1.99067E+01	13	1.99062E+01	14	1.99046E+01
60	8	1.99108E+01	9	1.99101E+01	10	1.99093E+01	11	1.99084E+01	12	1.99084E+01	13	1.99079E+01	14	1.99066E+01
61	8	1.99137E+01	9	1.99129E+01	10	1.99121E+01	11	1.99111E+01	12	1.99111E+01	13	1.99106E+01	14	1.99091E+01
62	8	1.99168E+01	9	1.99160E+01	10	1.99151E+01	11	1.99140E+01	12	1.99140E+01	13	1.99135E+01	14	1.99123E+01
63	8	1.99187E+01	9	1.99178E+01	10	1.99168E+01	11	1.99157E+01	12	1.99157E+01	13	1.99150E+01	14	1.99134E+01
64	8	1.99004E+01	9	1.99000E+01	10	1.98995E+01	11	1.98992E+01	12	1.98992E+01	13	1.98991E+01	14	1.98979E+01
65	8	1.99022E+01	9	1.99017E+01	10	1.99013E+01	11	1.99008E+01	12	1.99008E+01	13	1.99006E+01	14	1.98994E+01
66	8	1.99044E+01	9	1.99039E+01	10	1.99033E+01	11	1.99026E+01	12	1.99026E+01	13	1.99022E+01	14	1.99007E+01
67	8	1.99067E+01	9	1.99061E+01	10	1.99055E+01	11	1.99048E+01	12	1.99048E+01	13	1.99043E+01	14	1.99029E+01
68	8	1.99086E+01	9	1.99081E+01	10	1.99075E+01	11	1.99069E+01	12	1.99069E+01	13	1.99066E+01	14	1.99056E+01
69	8	1.99109E+01	9	1.99102E+01	10	1.99095E+01	11	1.99088E+01	12	1.99088E+01	13	1.99085E+01	14	1.99074E+01
70	8	1.99137E+01	9	1.99130E+01	10	1.99121E+01	11	1.99112E+01	12	1.99112E+01	13	1.99105E+01	14	1.99090E+01
71	8	1.99169E+01	9	1.99160E+01	10	1.99151E+01	11	1.99140E+01	12	1.99140E+01	13	1.99134E+01	14	1.99117E+01
72	8	1.99186E+01	9	1.99177E+01	10	1.99167E+01	11	1.99156E+01	12	1.99156E+01	13	1.99149E+01	14	1.99132E+01
73	8	1.99026E+01	9	1.99022E+01	10	1.99017E+01	11	1.99010E+01	12	1.99010E+01	13	1.99006E+01	14	1.98992E+01
74	8	1.99046E+01	9	1.99040E+01	10	1.99035E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99015E+01
75	8	1.99069E+01	9	1.99063E+01	10	1.99057E+01	11	1.99049E+01	12	1.99049E+01	13	1.99045E+01	14	1.99032E+01
76	8	1.99092E+01	9	1.99085E+01	10	1.99079E+01	11	1.99072E+01	12	1.99072E+01	13	1.99070E+01	14	1.99056E+01
77	8	1.99112E+01	9	1.99105E+01	10	1.99096E+01	11	1.99087E+01	12	1.99087E+01	13	1.99082E+01	14	1.99069E+01
78	8	1.99135E+01	9	1.99127E+01	10	1.99119E+01	11	1.99109E+01	12	1.99109E+01	13	1.99104E+01	14	1.99091E+01
79	8	1.99165E+01	9	1.99156E+01	10	1.99147E+01	11	1.99139E+01	12	1.99139E+01	13	1.99135E+01	14	1.99123E+01
80	8	1.99199E+01	9	1.99189E+01	10	1.99179E+01	11	1.99167E+01	12	1.99167E+01	13	1.99160E+01	14	1.99145E+01
81	8	1.99216E+01	9	1.99205E+01	10	1.99193E+01	11	1.99181E+01	12	1.99181E+01	13	1.99175E+01	14	1.99160E+01

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE

ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR

0 CPU TIME = 194.97

OJUNCTION NUMBER	CONNECTING VOLUMES	JCT. FLOW (TON/HR)	JCT. ENTH (KC/KG)	JCT. SPVL (M**3/KG)	P R E S S U R E D I F F E R E N T I A L S STAG ATA	ELEV ATA	FRIC ATA	ACCL ATA
1	82 TO 1□	2.24435E+01	1.99994E+01	1.00147E-03	7.08664E-01	-9.89207E-02	-6.09683E-01	6.11150E-05
2	1 TO 2□	2.24435E+01	2.00002E+01	1.00148E-03	6.94879E-02	-3.69568E-02	-3.25457E-02	-1.46212E-05
3	2 TO 3□	2.24435E+01	1.99999E+01	1.00149E-03	1.13229E-01	-4.92755E-02	-6.39906E-02	-3.72371E-05
4	3 TO 4□	2.24435E+01	1.99995E+01	1.00149E-03	1.04529E-01	-4.92752E-02	-5.52584E-02	-4.93999E-06
5	4 TO 5□	2.24435E+01	1.99993E+01	1.00150E-03	9.60549E-02	-3.69563E-02	-5.90895E-02	9.13502E-06
6	5 TO 6□	2.24435E+01	1.99993E+01	1.00150E-03	8.73244E-02	-3.69560E-02	-5.03483E-02	2.00848E-05
7	6 TO 7□	2.24435E+01	1.99994E+01	1.00151E-03	1.22306E-01	-4.92745E-02	-7.30671E-02	-3.57333E-05
8	7 TO 8□	2.24435E+01	1.99993E+01	1.00151E-03	1.22432E-01	-4.92742E-02	-7.31548E-02	2.56284E-06
9	8 TO 9□	2.24435E+01	1.99995E+01	1.00152E-03	7.86307E-02	-3.69555E-02	-4.17064E-02	-3.12631E-05
10	9 TO 91□	2.24435E+01	1.99996E+01	1.00152E-03	6.70988E-01	-5.17090E-01	-1.53949E-01	-5.05513E-05
11	83 TO 10□	1.84283E+02	1.99969E+01	1.00147E-03	6.79607E-01	-9.89208E-02	-5.80604E-01	8.25642E-05
12	10 TO 11□	1.84283E+02	1.99976E+01	1.00148E-03	8.18570E-02	-3.69569E-02	-4.49624E-02	-6.22758E-05
13	11 TO 12□	1.84283E+02	1.99970E+01	1.00149E-03	1.09290E-01	-4.92756E-02	-6.00062E-02	7.89438E-06
14	12 TO 13□	1.84283E+02	1.99965E+01	1.00149E-03	1.09385E-01	-4.92753E-02	-6.00821E-02	2.79748E-05
15	13 TO 14□	1.84283E+02	1.99960E+01	1.00150E-03	1.02065E-01	-3.69564E-02	-6.51191E-02	-1.05317E-05
16	14 TO 15□	1.84283E+02	1.99958E+01	1.00150E-03	8.21181E-02	-3.69560E-02	-4.51747E-02	-1.26430E-05
17	15 TO 16□	1.84283E+02	1.99955E+01	1.00151E-03	1.19541E-01	-4.92746E-02	-7.03040E-02	-3.76053E-05
18	16 TO 17□	1.84283E+02	1.99951E+01	1.00151E-03	1.29689E-01	-4.92743E-02	-8.04046E-02	1.03620E-05
19	17 TO 18□	1.84283E+02	1.99948E+01	1.00152E-03	9.22651E-02	-3.69556E-02	-5.53564E-02	-4.68518E-05
20	18 TO 92□	1.84283E+02	1.99948E+01	1.00152E-03	6.73828E-01	-5.17091E-01	-1.56794E-01	-5.64920E-05
21	84 TO 19□	5.06977E+02	1.99968E+01	1.00147E-03	6.78070E-01	-9.89208E-02	-5.79069E-01	8.10595E-05
22	19 TO 20□	5.06977E+02	1.99976E+01	1.00148E-03	8.19075E-02	-3.69569E-02	-4.49995E-02	-4.89336E-05
23	20 TO 21□	5.06977E+02	1.99970E+01	1.00149E-03	1.09343E-01	-4.92756E-02	-6.00551E-02	1.22932E-05
24	21 TO 22□	5.06977E+02	1.99965E+01	1.00149E-03	1.09388E-01	-4.92753E-02	-6.01310E-02	-1.82662E-05
25	22 TO 23□	5.06977E+02	1.99960E+01	1.00150E-03	1.02163E-01	-3.69564E-02	-6.51777E-02	2.85446E-05
26	23 TO 24□	5.06977E+02	1.99958E+01	1.00150E-03	8.21128E-02	-3.69560E-02	-4.52120E-02	-5.52189E-05
27	24 TO 25□	5.06977E+02	1.99953E+01	1.00151E-03	1.19620E-01	-4.92746E-02	-7.03637E-02	-1.82436E-05
28	25 TO 26□	5.06977E+02	1.99951E+01	1.00151E-03	1.29812E-01	-4.92743E-02	-8.04751E-02	6.21496E-05
29	26 TO 27□	5.06977E+02	1.99949E+01	1.00152E-03	9.22882E-02	-3.69556E-02	-5.54044E-02	-7.18069E-05
30	27 TO 93□	5.06977E+02	1.99948E+01	1.00152E-03	6.75112E-01	-5.17091E-01	-1.58090E-01	-6.86984E-05
31	85 TO 28□	2.88764E+03	1.99966E+01	1.00147E-03	6.74727E-01	-9.89209E-02	-5.75762E-01	4.38215E-05
32	28 TO 29□	2.88764E+03	1.99973E+01	1.00148E-03	8.24798E-02	-3.69569E-02	-4.55081E-02	1.47505E-05
33	29 TO 30□	2.88764E+03	1.99967E+01	1.00149E-03	1.09998E-01	-4.92756E-02	-6.07345E-02	-1.21240E-05
34	30 TO 31□	2.88764E+03	1.99961E+01	1.00149E-03	1.10071E-01	-4.92754E-02	-6.08120E-02	-1.60369E-05
35	31 TO 32□	2.88764E+03	1.99956E+01	1.00150E-03	1.02768E-01	-3.69564E-02	-6.57913E-02	2.00292E-05
36	32 TO 33□	2.88764E+03	1.99954E+01	1.00150E-03	9.27061E-02	-3.69561E-02	-5.57955E-02	-4.54272E-05
37	33 TO 34□	2.88764E+03	1.99949E+01	1.00151E-03	1.20410E-01	-4.92746E-02	-7.11071E-02	2.80302E-05
38	34 TO 35□	2.88764E+03	1.99947E+01	1.00151E-03	1.30504E-01	-4.92743E-02	-8.12716E-02	-4.22697E-05
39	35 TO 36□	2.88764E+03	1.99943E+01	1.00152E-03	8.29091E-02	-3.69556E-02	-4.59083E-02	4.52197E-05
40	36 TO 94□	2.88764E+03	1.99943E+01	1.00152E-03	6.86606E-01	-5.17091E-01	-1.69650E-01	-1.35303E-04
41	86 TO 37□	3.52610E+03	1.99973E+01	1.00147E-03	6.93541E-01	-9.89207E-02	-5.94535E-01	8.54980E-05
42	37 TO 38□	3.52610E+03	1.99981E+01	1.00148E-03	8.15244E-02	-3.69568E-02	-4.46098E-02	-4.22128E-05
43	38 TO 39□	3.52610E+03	1.99976E+01	1.00149E-03	1.08781E-01	-4.92755E-02	-5.95351E-02	-2.95781E-05
44	39 TO 40□	3.52610E+03	1.99970E+01	1.00149E-03	1.08923E-01	-4.92752E-02	-5.96104E-02	3.74618E-05
45	40 TO 41□	3.52610E+03	1.99967E+01	1.00150E-03	1.01558E-01	-3.69563E-02	-6.46389E-02	-3.74612E-05
46	41 TO 42□	3.52610E+03	1.99964E+01	1.00150E-03	8.17560E-02	-3.69560E-02	-4.48204E-02	-2.03554E-05
47	42 TO 43□	3.52610E+03	1.99961E+01	1.00151E-03	1.28998E-01	-4.92745E-02	-7.97132E-02	1.00054E-05
48	43 TO 44□	3.52610E+03	1.99959E+01	1.00151E-03	1.29060E-01	-4.92742E-02	-7.98112E-02	-2.50873E-05
49	44 TO 45□	3.52609E+03	1.99958E+01	1.00152E-03	8.19592E-02	-3.69555E-02	-4.49988E-02	4.80072E-06
50	45 TO 95□	3.52609E+03	1.99958E+01	1.00152E-03	6.61519E-01	-5.17091E-01	-1.44514E-01	-8.56594E-05
51	87 TO 46□	1.84297E+02	1.99969E+01	1.00147E-03	6.79685E-01	-9.89208E-02	-5.80685E-01	7.94309E-05
52	46 TO 47□	1.84297E+02	1.99976E+01	1.00148E-03	8.18835E-02	-3.69569E-02	-4.49685E-02	-4.17785E-05
53	47 TO 48□	1.84297E+02	1.99971E+01	1.00149E-03	1.09298E-01	-4.92756E-02	-6.00143E-02	8.27885E-06
54	48 TO 49□	1.84297E+02	1.99965E+01	1.00149E-03	1.09317E-01	-4.92753E-02	-6.00902E-02	-4.87587E-05
55	49 TO 50□	1.84297E+02	1.99961E+01	1.00150E-03	1.02108E-01	-3.69564E-02	-6.51281E-02	2.36795E-05
56	50 TO 51□	1.84297E+02	1.99958E+01	1.00150E-03	8.21351E-02	-3.69560E-02	-4.51808E-02	-1.71730E-06
57	51 TO 52□	1.84297E+02	1.99954E+01	1.00151E-03	1.19580E-01	-4.92746E-02	-7.03136E-02	-8.18298E-06
58	52 TO 53□	1.84297E+02	1.99951E+01	1.00151E-03	1.29660E-01	-4.92743E-02	-8.04157E-02	-2.96143E-05
59	53 TO 54□	1.84297E+02	1.99950E+01	1.00152E-03	9.23703E-02	-3.69556E-02	-5.53640E-02	5.07449E-05
60	54 TO 96□	1.84297E+02	1.99950E+01	1.00152E-03	6.73778E-01	-5.17091E-01	-1.56817E-01	-1.29862E-04
61	88 TO 55□	4.98027E+02	1.99966E+01	1.00147E-03	6.81879E-01	-9.89208E-02	-5.82874E-01	8.37616E-05
62	55 TO 56□	4.98027E+02	1.99973E+01	1.00148E-03	8.22338E-02	-3.69569E-02	-4.53508E-02	-7.39220E-05
63	56 TO 57□	4.98027E+02	1.99967E+01	1.00149E-03	1.09841E-01	-4.92756E-02	-6.05260E-02	3.94327E-05
64	57 TO 58□	4.98027E+02	1.99962E+01	1.00149E-03	1.09847E-01	-4.92753E-02	-6.06052E-02	-3.37296E-05
65	58 TO 59□	4.98027E+02	1.99956E+01	1.00150E-03	1.01805E-01	-3.69564E-02	-6.48340E-02	1.50867E-05
66	59 TO 60□	4.98027E+02	1.99953E+01	1.00150E-03	8.25111E-02	-3.69561E-02	-4.55718E-02	-1.67070E-05
67	60 TO 61□	4.98027E+02	1.99948E+01	1.00151E-03	1.19755E-01	-4.92746E-02	-7.04958E-02	-1.53461E-05
68	61 TO 62□	4.98026E+02	1.99945E+01	1.00151E-03	1.29523E-01	-4.92743E-02	-8.02601E-02	-1.13086E-05
69	62 TO 63□	4.98026E+02	1.99943E+01	1.00152E-03	9.24081E-02	-3.69556E-02	-5.54204E-02	3.21212E-05
70	63 TO 97□	4.98026E+02	1.99941E+01	1.00152E-03	6.76209E-01	-5.17091E-01	-1.59237E-01	-1.18641E-04
71	89 TO 64□	2.87384E+03	1.99966E+01	1.00147E-03	6.73891E-01	-9.89208E-02	-5.74885E-01	8.43555E-05
72	64 TO 65□	2.87384E+03	1.99974E+01	1.00148E-03	8.24020E-02	-3.69569E-02	-4.54844E-02	-3.92538E-05
73	65 TO 66□	2.87384E+03	1.99967E+01	1.00149E-03	1.09956E-01	-4.92756E-02	-6.07024E-02	-2.15719E-05
74	66 TO 67□	2.87384E+03	1.99961E+01	1.00149E-03	1.10049E-01	-4.92754E-02	-6.07793E-02	-6.16463E-06
75	67 TO 68□	2.87384E+03	1.99956E+01	1.00150E-03	1.02880E-01	-3.69564E-02	-6.59127E-02	1.10950E-05
76	68 TO 69□	2.87384E+03	1.99955E+01	1.00150E-03	9.28150E-02	-3.69561E-02	-5.58435E-02	1.53915E-05
77	69 TO 70□	2.87384E+03	1.99950E+01	1.00151E-03	1.20386E-01	-4.92746E-02	-7.11464E-02	-3.45162E-05
78	70 TO 71□	2.87384E+03	1.99946E+01	1.00151E-03	1.30659E-01	-4.92743E-02	-8.13834E-02	1.53515E-06
79	71 TO 72□	2.87384E+03	1.99943E+01	1.00152E-03	8.28354E-02	-3.69556E-02	-4.58822E-02	-2.39444E-06
80	72 TO 98□	2.87384E+03	1.99942E+01	1.00152E-03	6.76480E-01	-5.17091E-01	-1.59496E-01	-1.07524E-04
81	90 TO 73□	3.52639E+03	1.99973E+01	1.00147E-03	6.83659E-01	-9.89206E-02	-5.84698E-01	4.11543E-05
82	73 TO 74□	3.52639E+03	1.99980E+01	1.00148E-03	8.15772E-02	-3.69568E-02	-4.46144E-02	6.03315E-06
83	74 TO 75□	3.52639E+03	1.99976E+01	1.00149E-03	1.08774E-01	-4.92755E-02	-5.95412E-02	-4.25749E-05
84	75 TO 76□	3.52638E+03	1.99971E+01	1.00149E-03	1.08940E-01	-4.92752E-02	-5.96165E-02	4.85673E-05
85	76 TO 77□	3.52638E+03	1.99967E+01	1.00150E-03	1.01552E-01	-3.69563E-02	-6.46448E-02	-4.89335E-05
86	77 TO 78□	3.52638E+03	1.99965E+01	1.00150E-03	8.17736E-02	-3.69560E-02	-4.48250E-02	-7.38265E-06
87	78 TO 79□	3.52638E+03	1.99962E+01	1.00151E-03	1.29038E-01	-4.92745E-02	-7.97206E-02	4.28654E-05
88	79 TO 80□	3.52638E+03	1.99960E+01	1.00151E-03	1.29045E-01	-4.92742E-02	-7.98187E-02	-4.75924E-05
89	80 TO 81□	3.52638E+03	1.99958E+01	1.00152E-03	8.19603E-02	-3.69555E-02	-4.50034E-02	1.29906E-06
90	81 TO 99□	3.52638E+03	1.99957E+01	1.00152E-03	6.61523E-01	-5.17091E-01	-1.44529E-01	-9.66392E-05
91	102 TO 82□	2.24435E+01	1.99987E+01	1.00142E-03	7.39777E-01	-8.66017E-02	-6.53205E-01	-3.00572E-05

92	91 TO 103	2.24433E+01	2.00215E+01	1.00157E-03	7.38995E-01	-5.94656E-01	-1.44196E-01	1.42752E-04
93	100 TO 83	1.84283E+02	1.99987E+01	1.00142E-03	7.32330E-01	-8.66018E-02	-6.45743E-01	-1.56542E-05
94	92 TO 101	1.84281E+02	2.00150E+01	1.00157E-03	7.40114E-01	-5.94657E-01	-1.45313E-01	1.44552E-04
95	100 TO 84	5.06977E+02	1.99987E+01	1.00142E-03	7.30552E-01	-8.66018E-02	-6.43965E-01	-1.53935E-05
96	93 TO 101	5.06973E+02	2.00153E+01	1.00157E-03	7.41398E-01	-5.94657E-01	-1.46597E-01	1.43821E-04
97	100 TO 85	2.88764E+03	1.99987E+01	1.00142E-03	7.03858E-01	-8.66018E-02	-6.17270E-01	-1.38383E-05
98	94 TO 101	2.88761E+03	2.00141E+01	1.00156E-03	7.42988E-01	-5.94657E-01	-1.48186E-01	1.44433E-04
99	100 TO 86	3.52610E+03	1.99987E+01	1.00142E-03	7.28548E-01	-8.66017E-02	-6.41965E-01	-1.83416E-05
100	95 TO 101	3.52607E+03	2.00114E+01	1.00156E-03	7.27907E-01	-5.94657E-01	-1.33097E-01	1.52121E-04
101	102 TO 87	1.84297E+02	1.99987E+01	1.00142E-03	7.32417E-01	-8.66018E-02	-6.45830E-01	-1.55801E-05
102	96 TO 103	1.84295E+02	2.00150E+01	1.00157E-03	7.40136E-01	-5.94657E-01	-1.45335E-01	1.44529E-04
103	102 TO 88	4.98027E+02	1.99987E+01	1.00142E-03	7.22466E-01	-8.66018E-02	-6.35878E-01	-1.37754E-05
104	97 TO 103	4.98022E+02	2.00136E+01	1.00156E-03	7.43579E-01	-5.94657E-01	-1.48778E-01	1.44212E-04
105	102 TO 89	2.87384E+03	1.99987E+01	1.00142E-03	7.05220E-01	-8.66018E-02	-6.18633E-01	-1.39790E-05
106	98 TO 103	2.87382E+03	2.00144E+01	1.00156E-03	7.52844E-01	-5.94657E-01	-1.58043E-01	1.44215E-04
107	102 TO 90	3.52639E+03	1.99987E+01	1.00142E-03	7.38586E-01	-8.66017E-02	-6.52003E-01	-1.83764E-05
108	99 TO 103	3.52636E+03	2.00114E+01	1.00156E-03	7.27922E-01	-5.94657E-01	-1.33112E-01	1.52686E-04
109	0 TO 100	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
110	0 TO 102	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE

ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-11-28

0 CPU TIME = 194.97

OJUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
1	1.30427E+00	1.30427E+00	2.24435E+01	0.00000E+00	2.00027E+01	0.00000E+00	2.00027E+01
2	1.30431E+00	1.30431E+00	2.24435E+01	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
3	1.30431E+00	1.30431E+00	2.24435E+01	0.00000E+00	2.00006E+01	0.00000E+00	2.00006E+01
4	1.30432E+00	1.30432E+00	2.24435E+01	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
5	1.30433E+00	1.30433E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
6	1.30433E+00	1.30433E+00	2.24435E+01	0.00000E+00	1.99998E+01	0.00000E+00	1.99998E+01
7	1.30434E+00	1.30434E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
8	1.30435E+00	1.30435E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
9	1.30435E+00	1.30435E+00	2.24435E+01	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
10	1.30436E+00	1.30436E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
11	1.33866E+00	1.33866E+00	1.84283E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
12	1.33870E+00	1.33870E+00	1.84283E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
13	1.33871E+00	1.33871E+00	1.84283E+02	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
14	1.33872E+00	1.33872E+00	1.84283E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
15	1.33872E+00	1.33872E+00	1.84283E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
16	1.33873E+00	1.33873E+00	1.84283E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
17	1.33873E+00	1.33873E+00	1.84283E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
18	1.33874E+00	1.33874E+00	1.84283E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
19	1.33875E+00	1.33875E+00	1.84283E+02	0.00000E+00	1.99956E+01	0.00000E+00	1.99956E+01
20	1.33876E+00	1.33876E+00	1.84283E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
21	1.33919E+00	1.33919E+00	5.06977E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
22	1.33923E+00	1.33923E+00	5.06977E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
23	1.33923E+00	1.33923E+00	5.06977E+02	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
24	1.33924E+00	1.33924E+00	5.06977E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
25	1.33925E+00	1.33925E+00	5.06977E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
26	1.33925E+00	1.33925E+00	5.06977E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
27	1.33926E+00	1.33926E+00	5.06977E+02	0.00000E+00	1.99961E+01	0.00000E+00	1.99961E+01
28	1.33927E+00	1.33927E+00	5.06977E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
29	1.33927E+00	1.33927E+00	5.06977E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
30	1.33928E+00	1.33928E+00	5.06977E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
31	1.35331E+00	1.35331E+00	2.88764E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
32	1.35335E+00	1.35335E+00	2.88764E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
33	1.35335E+00	1.35335E+00	2.88764E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
34	1.35336E+00	1.35336E+00	2.88764E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
35	1.35337E+00	1.35337E+00	2.88764E+03	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
36	1.35337E+00	1.35337E+00	2.88764E+03	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
37	1.35338E+00	1.35338E+00	2.88764E+03	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
38	1.35339E+00	1.35339E+00	2.88764E+03	0.00000E+00	1.99954E+01	0.00000E+00	1.99954E+01
39	1.35340E+00	1.35340E+00	2.88764E+03	0.00000E+00	1.99951E+01	0.00000E+00	1.99951E+01
40	1.35340E+00	1.35340E+00	2.88764E+03	0.00000E+00	1.99948E+01	0.00000E+00	1.99948E+01
41	1.33061E+00	1.33061E+00	3.52610E+03	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
42	1.33065E+00	1.33065E+00	3.52610E+03	0.00000E+00	1.99986E+01	0.00000E+00	1.99986E+01
43	1.33065E+00	1.33065E+00	3.52610E+03	0.00000E+00	1.99983E+01	0.00000E+00	1.99983E+01
44	1.33066E+00	1.33066E+00	3.52610E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
45	1.33067E+00	1.33067E+00	3.52610E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
46	1.33067E+00	1.33067E+00	3.52610E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
47	1.33068E+00	1.33068E+00	3.52610E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
48	1.33069E+00	1.33069E+00	3.52610E+03	0.00000E+00	1.99967E+01	0.00000E+00	1.99967E+01
49	1.33070E+00	1.33070E+00	3.52609E+03	0.00000E+00	1.99966E+01	0.00000E+00	1.99966E+01
50	1.33070E+00	1.33070E+00	3.52609E+03	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
51	1.33876E+00	1.33876E+00	1.84297E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
52	1.33880E+00	1.33880E+00	1.84297E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
53	1.33881E+00	1.33881E+00	1.84297E+02	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
54	1.33881E+00	1.33881E+00	1.84297E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
55	1.33882E+00	1.33882E+00	1.84297E+02	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
56	1.33883E+00	1.33883E+00	1.84297E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
57	1.33883E+00	1.33883E+00	1.84297E+02	0.00000E+00	1.99962E+01	0.00000E+00	1.99962E+01
58	1.33884E+00	1.33884E+00	1.84297E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
59	1.33885E+00	1.33885E+00	1.84297E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
60	1.33885E+00	1.33885E+00	1.84297E+02	0.00000E+00	1.99955E+01	0.00000E+00	1.99955E+01
61	1.37819E+00	1.37819E+00	4.98027E+02	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
62	1.37823E+00	1.37823E+00	4.98027E+02	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
63	1.37824E+00	1.37824E+00	4.98027E+02	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
64	1.37824E+00	1.37824E+00	4.98027E+02	0.00000E+00	1.99970E+01	0.00000E+00	1.99970E+01
65	1.37825E+00	1.37825E+00	4.98027E+02	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
66	1.37826E+00	1.37826E+00	4.98027E+02	0.00000E+00	1.99958E+01	0.00000E+00	1.99958E+01
67	1.37826E+00	1.37826E+00	4.98027E+02	0.00000E+00	1.99956E+01	0.00000E+00	1.99956E+01
68	1.37827E+00	1.37827E+00	4.98026E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
69	1.37828E+00	1.37828E+00	4.98026E+02	0.00000E+00	1.99951E+01	0.00000E+00	1.99951E+01
70	1.37828E+00	1.37828E+00	4.98026E+02	0.00000E+00	1.99946E+01	0.00000E+00	1.99946E+01

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   71          1.34684E+00  1.34684E+00  2.87384E+03  0.00000E+00  2.00000E+01  0.00000E+00  2.00000E+01
   72          1.34688E+00  1.34688E+00  2.87384E+03  0.00000E+00  1.99979E+01  0.00000E+00  1.99979E+01
   73          1.34689E+00  1.34689E+00  2.87384E+03  0.00000E+00  1.99975E+01  0.00000E+00  1.99975E+01
   74          1.34690E+00  1.34690E+00  2.87384E+03  0.00000E+00  1.99969E+01  0.00000E+00  1.99969E+01
   75          1.34690E+00  1.34690E+00  2.87384E+03  0.00000E+00  1.99964E+01  0.00000E+00  1.99964E+01
   76          1.34691E+00  1.34691E+00  2.87384E+03  0.00000E+00  1.99960E+01  0.00000E+00  1.99960E+01
   77          1.34691E+00  1.34691E+00  2.87384E+03  0.00000E+00  1.99958E+01  0.00000E+00  1.99958E+01
   78          1.34692E+00  1.34692E+00  2.87384E+03  0.00000E+00  1.99954E+01  0.00000E+00  1.99954E+01
   79          1.34693E+00  1.34693E+00  2.87384E+03  0.00000E+00  1.99951E+01  0.00000E+00  1.99951E+01
   80          1.34694E+00  1.34694E+00  2.87384E+03  0.00000E+00  1.99948E+01  0.00000E+00  1.99948E+01
   81          1.33072E+00  1.33072E+00  3.52639E+03  0.00000E+00  2.00007E+01  0.00000E+00  2.00007E+01
   82          1.33076E+00  1.33076E+00  3.52639E+03  0.00000E+00  1.99985E+01  0.00000E+00  1.99985E+01
   83          1.33076E+00  1.33076E+00  3.52639E+03  0.00000E+00  1.99984E+01  0.00000E+00  1.99984E+01
   84          1.33077E+00  1.33077E+00  3.52638E+03  0.00000E+00  1.99979E+01  0.00000E+00  1.99979E+01
   85          1.33078E+00  1.33078E+00  3.52638E+03  0.00000E+00  1.99975E+01  0.00000E+00  1.99975E+01
   86          1.33078E+00  1.33078E+00  3.52638E+03  0.00000E+00  1.99970E+01  0.00000E+00  1.99970E+01
   87          1.33079E+00  1.33079E+00  3.52638E+03  0.00000E+00  1.99970E+01  0.00000E+00  1.99970E+01
   88          1.33080E+00  1.33080E+00  3.52638E+03  0.00000E+00  1.99968E+01  0.00000E+00  1.99968E+01
   89          1.33080E+00  1.33080E+00  3.52638E+03  0.00000E+00  1.99965E+01  0.00000E+00  1.99965E+01
   90          1.33081E+00  1.33081E+00  3.52638E+03  0.00000E+00  1.99962E+01  0.00000E+00  1.99962E+01
   91          3.24568E+00  3.24568E+00  2.24435E+01  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
   92          1.45641E+00  1.45641E+00  2.24433E+01  0.00000E+00  2.00336E+01  0.00000E+00  2.00336E+01
   93          3.33132E+00  3.33132E+00  1.84283E+02  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
   94          1.49479E+00  1.49479E+00  1.84281E+02  0.00000E+00  2.00271E+01  0.00000E+00  2.00271E+01
   95          3.33257E+00  3.33257E+00  5.06977E+02  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
   96          1.49539E+00  1.49539E+00  5.06973E+02  0.00000E+00  2.00274E+01  0.00000E+00  2.00274E+01
   97          3.36766E+00  3.36766E+00  2.88764E+03  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
   98          1.51117E+00  1.51117E+00  2.88761E+03  0.00000E+00  2.00263E+01  0.00000E+00  2.00263E+01
   99          3.31120E+00  3.31120E+00  3.52610E+03  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
  100          1.48581E+00  1.48581E+00  3.52607E+03  0.00000E+00  2.00235E+01  0.00000E+00  2.00235E+01
  101          3.33157E+00  3.33157E+00  1.84297E+02  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
  102          1.49491E+00  1.49491E+00  1.84295E+02  0.00000E+00  2.00271E+01  0.00000E+00  2.00271E+01
  103          3.42968E+00  3.42968E+00  4.98027E+02  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
  104          1.53895E+00  1.53895E+00  4.98022E+02  0.00000E+00  2.00257E+01  0.00000E+00  2.00257E+01
  105          3.35157E+00  3.35157E+00  2.87384E+03  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
  106          1.50395E+00  1.50395E+00  2.87382E+03  0.00000E+00  2.00265E+01  0.00000E+00  2.00265E+01
  107          3.31147E+00  3.31147E+00  3.52639E+03  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
  108          1.48593E+00  1.48593E+00  3.52636E+03  0.00000E+00  2.00235E+01  0.00000E+00  2.00235E+01
  109          0.00000E+00  0.00000E+00  7.10500E+03  0.00000E+00  2.00000E+01  0.00000E+00  2.00000E+01
  110          0.00000E+00  0.00000E+00  7.10500E+03  0.00000E+00  2.00000E+01  0.00000E+00  2.00000E+01
IPRTCT =   1

CHANNEL  RESULTS

        CHANNEL   CONNECTING          C O O L A N T            FUEL
         NUMBER     VOLUMES       TEMPERATURE    VOID FRAC   TEMPERATURE
                                        (C)          (-)          (C)

            1        1 TO   9     1.99099E+01  0.00000E+00  1.99155E+01
            2       10 TO  18     1.99058E+01  0.00000E+00  1.99100E+01
            3       19 TO  27     1.99057E+01  0.00000E+00  1.99099E+01
            4       28 TO  36     1.99051E+01  0.00000E+00  1.99090E+01
            5       37 TO  45     1.99071E+01  0.00000E+00  1.99117E+01
            6       46 TO  54     1.99058E+01  0.00000E+00  1.99101E+01
            7       55 TO  63     1.99052E+01  0.00000E+00  1.99092E+01
            8       64 TO  72     1.99051E+01  0.00000E+00  1.99091E+01
            9       73 TO  81     1.99072E+01  0.00000E+00  1.99117E+01
IM,JM,KM,KMIN,KMAX
23 13 4 2 16
IFT,E1,V1,X1
2 11.039999 0.00000000E+00 0.00000000E+00
FSP,PLP1(L),FP,FSG,FSUB,FD,FNL,FI,FAX,QCPR(L),CQQ,X1
AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
 0.1001E+01 0.6597E-05 0.7173E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00 0.7790E-06 0.0000E+00
 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1000E+01 0.3309E+03 0.2462E+01 0.8800E+00-0.2528E+00 0.1186E+03
IM,JM,KM,KMIN,KMAX
23 13 14 2 16
IFT,E1,V1,X1
2 10.719998 0.00000000E+00 0.00000000E+00
FSP,PLP1(L),FP,FSG,FSUB,FD,FNL,FI,FAX,QCPR(L),CQQ,X1
AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
 0.8388E+00 0.1339E-05 0.7252E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00 0.7963E-07 0.0000E+00
 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1001E+01 0.6617E+02 0.3122E+01 0.8800E+00-0.2528E+00 0.1186E+03
1  ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR                                                    91-11-28

                          ************** SUMMARY  TABLE **************

                              MINIMUM CPR ,(I,J,K),L =    0.000, 33, 22, 16,  3

                              MAXIMUM LHGR,(I,J,K),L =    0.000, 20, 20, 14,  3

                              CPR (20,20,14)         =   99.990

                              LHGR(33,22,16)         =    0.000

 IPRTCT =   1
OPLOT RECORD NUMBER =     26
ORESTART NUMBER     =      8
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EUREKA-ATR ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR

**** CHANNEL WISE POWER ****

CHANNEL NO.	1	2	3	4	5	6	7	8	9
POWER	1.41922	0.74419	0.80339	0.83921	1.15123	0.84615	0.88662	0.83014	1.17653

**** CLUSTER WISE POWER ****

J I	6	7	8	9	10	11	12	13	14	15	16	17	18	19
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.649	0.613	0.713
7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.436	0.589	0.517	0.747	0.616	0.860	0.669
8	0.000	0.000	0.000	0.000	0.000	0.000	0.676	0.633	0.802	0.680	0.909	0.819	1.099	0.910
9	0.000	0.000	0.000	0.000	0.000	0.721	0.631	0.861	0.641	0.783	0.616	1.026	0.815	1.166
10	0.000	0.000	0.000	0.000	0.680	0.892	0.826	1.078	0.861	0.949	0.800	1.156	0.971	1.293
11	0.000	0.000	0.000	0.582	0.834	0.717	1.032	0.798	1.116	0.760	1.042	0.827	1.166	0.868
12	0.000	0.000	0.687	0.712	0.971	0.841	1.144	1.000	1.258	0.980	1.277	1.033	1.326	1.005
13	0.000	0.563	0.589	0.870	0.685	0.874	0.696	1.088	0.864	1.225	0.917	1.243	0.876	1.024
14	0.000	0.662	0.738	1.020	0.860	0.983	0.795	1.247	1.064	1.427	1.132	1.445	1.068	1.172
15	0.000	0.541	0.860	0.732	1.073	0.755	1.065	0.873	1.270	0.982	1.331	1.000	1.326	0.937
16	0.000	0.640	0.957	0.906	1.226	0.945	1.267	1.065	1.442	1.152	1.514	1.214	1.550	1.184
17	0.443	0.681	0.638	1.054	0.799	1.145	0.875	1.233	0.953	1.351	1.032	1.421	1.047	1.365
18	0.504	0.755	0.762	1.161	0.954	1.283	1.017	1.315	1.063	1.474	1.205	1.576	1.225	1.530
19	0.603	0.597	0.949	0.792	1.100	0.833	1.124	0.751	1.045	0.934	1.361	1.014	1.377	1.052
20	0.643	0.699	1.041	0.940	1.211	0.972	1.239	0.870	1.153	1.092	1.513	1.184	1.529	1.212
21	0.467	0.766	0.678	1.031	0.764	1.101	0.835	1.158	0.888	1.315	1.025	1.414	1.050	1.388
22	0.501	0.757	0.733	1.016	0.829	1.178	0.990	1.359	1.111	1.500	1.211	1.586	1.234	1.538
23	0.000	0.500	0.744	0.554	0.833	0.718	1.095	1.035	1.283	0.982	1.359	1.034	1.400	1.027
24	0.000	0.502	0.734	0.611	0.856	0.803	1.152	0.838	1.365	1.289	1.462	1.168	1.488	1.124
25	0.000	0.498	0.498	0.768	0.643	1.007	0.747	1.078	0.826	1.022	0.906	1.274	0.910	1.073
26	0.000	0.368	0.539	0.817	0.770	1.077	0.913	1.119	0.900	1.238	1.026	1.356	1.022	1.142
27	0.000	0.000	0.552	0.538	0.831	0.683	0.967	0.644	0.856	0.753	1.111	0.864	1.186	0.855
28	0.000	0.000	0.000	0.577	0.802	0.753	0.982	0.726	0.940	0.847	1.195	0.996	1.314	1.030
29	0.000	0.000	0.000	0.000	0.551	0.775	0.656	0.900	0.702	1.055	0.823	1.106	0.835	1.157
30	0.000	0.000	0.000	0.000	0.000	0.711	0.686	0.920	0.805	1.090	0.917	1.180	0.971	1.257
31	0.000	0.000	0.000	0.000	0.000	0.000	0.643	0.581	0.808	0.671	0.911	0.668	0.921	0.744
32	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.512	0.673	0.628	0.811	0.655	0.813	0.736
33	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.584	0.492	0.644

**** CLUSTER WISE POWER ****

J I	20	21	22	23	24	25	26	27	28	29	30	31	32	33
6	0.599	0.646	0.546	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.851	0.590	0.730	0.599	0.727	0.533	0.594	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	1.112	0.820	0.977	0.813	0.981	0.774	0.826	0.653	0.000	0.000	0.000	0.000	0.000	0.000
9	0.849	1.143	0.813	1.100	0.774	0.999	0.705	0.847	0.615	0.000	0.000	0.000	0.000	0.000
10	1.018	1.307	1.004	1.299	0.988	1.142	0.860	1.027	0.788	0.810	0.000	0.000	0.000	0.000
11	1.200	0.893	1.213	0.855	1.071	0.709	0.922	0.744	0.996	0.706	0.794	0.000	0.000	0.000
12	1.314	1.072	1.406	1.047	1.247	0.834	1.068	0.962	1.195	0.899	0.952	0.710	0.000	0.000
13	0.770	1.228	1.108	1.290	0.908	1.171	0.825	1.215	0.858	1.093	0.745	0.843	0.684	0.000
14	0.927	1.374	0.956	1.471	1.326	1.425	1.073	1.336	1.045	1.185	0.851	0.942	0.672	0.000
15	1.271	0.960	1.334	0.964	1.113	0.944	1.273	0.896	1.097	0.710	0.874	0.677	0.777	0.000
16	1.520	1.205	1.551	1.179	1.473	1.152	1.443	1.056	1.242	0.870	0.991	0.820	0.900	0.000
17	1.017	1.421	1.051	1.415	1.010	1.338	0.961	1.263	0.890	1.127	0.823	1.050	0.699	0.711
18	1.201	1.590	1.246	1.587	1.191	1.444	1.090	1.418	1.095	1.367	1.081	1.230	0.869	0.782
19	1.404	1.039	1.397	1.045	1.336	0.839	1.090	0.918	1.288	0.940	1.294	0.862	0.982	0.607
20	1.565	1.221	1.566	1.237	1.503	0.992	1.226	1.095	1.461	1.124	1.419	1.007	1.046	0.674
21	1.042	1.458	1.092	1.470	1.050	1.339	0.962	1.330	0.986	1.306	0.947	1.075	0.690	0.723
22	1.216	1.639	1.301	1.664	1.270	1.582	1.202	1.517	1.163	1.456	1.120	1.154	0.794	0.753
23	1.407	1.077	1.487	1.106	1.444	1.058	1.386	0.993	1.288	0.996	1.288	0.864	0.949	0.000
24	1.475	1.211	1.609	1.244	1.576	1.217	1.490	1.067	1.339	1.141	1.364	0.995	0.947	0.000
25	0.822	1.303	1.024	1.410	1.035	1.361	0.930	1.050	0.804	1.221	0.904	1.037	0.662	0.000
26	0.919	1.393	1.153	1.505	1.165	1.465	1.062	1.176	0.918	1.255	1.000	1.004	0.724	0.000
27	1.178	0.914	1.268	0.941	1.245	0.931	1.301	0.887	1.154	0.847	1.002	0.702	0.000	0.000
28	1.336	1.046	1.323	0.975	1.254	1.094	1.364	1.041	1.208	0.905	0.932	0.000	0.000	0.000
29	0.855	1.146	0.799	0.977	0.722	1.126	0.849	1.096	0.787	0.919	0.000	0.000	0.000	0.000
30	1.017	1.244	0.923	0.962	0.759	1.078	0.897	0.994	0.775	0.000	0.000	0.000	0.000	0.000
31	1.043	0.760	0.974	0.678	0.855	0.661	0.822	0.632	0.000	0.000	0.000	0.000	0.000	0.000
32	0.945	0.776	0.886	0.702	0.774	0.630	0.652	0.000	0.000	0.000	0.000	0.000	0.000	0.000
33	0.533	0.652	0.529	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

*** NORMALIZED AXIAL POWER ***

K M	1	2	3	4	5	6	7	8	9	10
2	0.387	0.379	0.409	0.443	0.374	0.361	0.398	0.440	0.372	0.398
3	0.563	0.517	0.563	0.613	0.511	0.504	0.551	0.607	0.510	0.547
4	0.671	0.593	0.651	0.711	0.592	0.586	0.640	0.701	0.588	0.632
5	0.689	0.611	0.671	0.730	0.609	0.605	0.659	0.720	0.604	0.650
6	0.744	0.659	0.723	0.784	0.666	0.654	0.713	0.772	0.661	0.705
7	0.806	0.714	0.783	0.845	0.737	0.711	0.774	0.833	0.732	0.772
8	0.876	0.776	0.851	0.912	0.823	0.774	0.844	0.902	0.819	0.850
9	0.950	0.851	0.926	0.981	0.929	0.845	0.920	0.977	0.926	0.943
10	1.083	0.979	1.058	1.099	1.091	0.979	1.056	1.101	1.092	1.090
11	1.220	1.141	1.199	1.210	1.241	1.145	1.202	1.215	1.245	1.228
12	1.356	1.416	1.351	1.307	1.378	1.420	1.360	1.317	1.384	1.357
13	1.471	1.608	1.476	1.388	1.506	1.616	1.493	1.400	1.516	1.472
14	1.618	1.781	1.618	1.498	1.674	1.787	1.643	1.513	1.683	1.619
15	1.487	1.682	1.543	1.407	1.607	1.707	1.555	1.419	1.611	1.541
16	1.078	1.290	1.178	1.067	1.255	1.304	1.191	1.078	1.253	1.189

1

***** NORMALIZED POWER (AXIS) FOR THERMAL CALCULATION *****

CHANNEL# 1			CHANNEL# 2			CHANNEL# 3			CHANNEL# 4			CHANNEL# 5		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
9	9	3.87129E-01	18	9	3.79359E-01	27	9	4.08809E-01	36	9	4.43361E-01	45	9	3.73862E-01
8	8	6.17226E-01	17	8	5.55366E-01	26	8	6.06939E-01	35	8	6.62056E-01	44	8	5.51832E-01
7	7	7.16821E-01	16	7	6.35305E-01	25	7	6.96971E-01	34	7	7.56790E-01	43	7	6.37976E-01
6	6	8.40971E-01	15	6	7.45290E-01	24	6	8.16860E-01	33	6	8.78452E-01	42	6	7.79841E-01
5	5	9.49562E-01	14	5	8.51261E-01	23	5	9.25993E-01	32	5	9.80985E-01	41	5	9.29427E-01
4	4	1.15147E+00	13	4	1.05992E+00	22	4	1.12872E+00	31	4	1.15458E+00	40	4	1.16642E+00
3	3	1.41366E+00	12	3	1.51229E+00	21	3	1.41353E+00	30	3	1.34772E+00	39	3	1.44191E+00
2	2	1.55265E+00	11	2	1.73145E+00	20	2	1.58037E+00	29	2	1.45259E+00	38	2	1.64080E+00
1	1	1.07769E+00	10	1	1.28974E+00	19	1	1.17810E+00	28	1	1.06666E+00	37	1	1.25502E+00

CHANNEL# 6			CHANNEL# 7			CHANNEL# 8			CHANNEL# 9		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
54	9	3.61430E-01	63	9	3.97539E-01	72	9	4.40351E-01	81	9	3.71695E-01
53	8	5.44981E-01	62	8	5.95264E-01	71	8	6.53724E-01	80	8	5.48981E-01
52	7	6.29769E-01	61	7	6.86248E-01	70	7	7.45840E-01	79	7	6.32660E-01
51	6	7.42377E-01	60	6	8.09089E-01	69	6	8.67780E-01	78	6	7.75183E-01
50	5	8.45409E-01	59	5	9.20373E-01	68	5	9.77222E-01	77	5	9.26491E-01
49	4	1.06204E+00	58	4	1.12911E+00	67	4	1.15773E+00	76	4	1.16832E+00
48	3	1.51841E+00	57	3	1.42641E+00	66	3	1.35827E+00	75	3	1.45036E+00
47	2	1.74704E+00	56	2	1.59928E+00	65	2	1.46632E+00	74	2	1.64684E+00
46	1	1.30361E+00	55	1	1.19094E+00	64	1	1.07842E+00	73	1	1.25304E+00

1

DIFFUSION CALCULATION HAS BEEN PERFORMED

DIF.CALC.STEP	9
TRANSIENT TIME	25.0000 SEC
REACTOR POWER	2.57759E-08 MWT
CORE AVERAGED FUEL TEMP.	19.91 DEG-C
CORE AVERAGED VOID FRAC.	0.00 %
CORE K-EFFECTIVE	0.9956158
EXECUTTED CONDITION	1 (SPECIFIED TIME)
DIF.OF FUEL TEMP	0.02 DEG-C AT SLAB# 9
REACTOR POWER CHANGING RATIO	1.15
CONTROL ROD POSITION	
C/R# 19 (B4C)	67.59 % INSERTED
C/R# 41 (B4C)	67.59 % INSERTED
C/R# 63 (B4C)	67.59 % INSERTED
C/R# 85 (B4C)	67.59 % INSERTED
CPU TIME IN THIS STEP	23.73 SEC
CONVERGENCY CONDITION	0 (CONVERGED)

FOR PLOTTING INFORMATION		ABSOLUTE		NORMALIZED	
ITEM	UNIT	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM
POWER DENSITY	W/CC	6.177E-10	3.557E-11	6.177E-10	3.557E-11
FAST NEUTRON FLUX	N/CM2.S	1.253E-07	6.251E-09	1.253E-07	6.251E-09
THERMAL NEUTRON FLUX	N/CM2.S	8.040E-08	5.022E-09	8.040E-08	5.022E-09
FUEL TEMPERATURE	DEG-C	1.993E+01	1.990E+01	1.002E+00	1.001E+00
VOID FRACTION	%	0.000E+00	0.000E+00	0.000E+00	0.000E+00

***** THERMAL CALCULATION RESULTS *****

CHANNEL# 1				CHANNEL# 2				CHANNEL# 3				CHANNEL# 4				CHANNEL# 5			
S	N	FUEL	VOID	S	N	FUEL	VOID	S	N	FUEL	VOID	S	N	FUEL	VOID	S	N	FUEL	VOID
L	D	TEMP(C)	(%)	L	D	TEMP(C)	(%)	L	D	TEMP(C)	(%)	L	D	TEMP(C)	(%)	L	D	TEMP(C)	(%)
9	9	19.93	0.00	18	9	19.92	0.00	27	9	19.92	0.00	36	9	19.92	0.00	45	9	19.92	0.00
8	8	19.92	0.00	17	8	19.92	0.00	26	8	19.92	0.00	35	8	19.92	0.00	44	8	19.92	0.00
7	7	19.92	0.00	16	7	19.91	0.00	25	7	19.91	0.00	34	7	19.91	0.00	43	7	19.92	0.00
6	6	19.92	0.00	15	6	19.91	0.00	24	6	19.91	0.00	33	6	19.91	0.00	42	6	19.91	0.00
5	5	19.91	0.00	14	5	19.91	0.00	23	5	19.91	0.00	32	5	19.91	0.00	41	5	19.91	0.00
4	4	19.91	0.00	13	4	19.91	0.00	22	4	19.91	0.00	31	4	19.91	0.00	40	4	19.91	0.00
3	3	19.91	0.00	12	3	19.91	0.00	21	3	19.91	0.00	30	3	19.90	0.00	39	3	19.91	0.00
2	2	19.91	0.00	11	2	19.90	0.00	20	2	19.90	0.00	29	2	19.90	0.00	38	2	19.90	0.00
1	1	19.91	0.00	10	1	19.90	0.00	19	1	19.90	0.00	28	1	19.90	0.00	37	1	19.90	0.00

CHANNEL# 6				CHANNEL# 7				CHANNEL# 8				CHANNEL# 9			
S	N	FUEL	VOID	S	N	FUEL	VOID	S	N	FUEL	VOID	S	N	FUEL	VOID
L	D	TEMP(C)	(%)	L	D	TEMP(C)	(%)	L	D	TEMP(C)	(%)	L	D	TEMP(C)	(%)
54	9	19.92	0.00	63	9	19.92	0.00	72	9	19.92	0.00	81	9	19.92	0.00
53	8	19.92	0.00	62	8	19.92	0.00	71	8	19.92	0.00	80	8	19.92	0.00
52	7	19.91	0.00	61	7	19.91	0.00	70	7	19.91	0.00	79	7	19.92	0.00
51	6	19.91	0.00	60	6	19.91	0.00	69	6	19.91	0.00	78	6	19.91	0.00
50	5	19.91	0.00	59	5	19.91	0.00	68	5	19.91	0.00	77	5	19.91	0.00
49	4	19.91	0.00	58	4	19.91	0.00	67	4	19.91	0.00	76	4	19.91	0.00
48	3	19.91	0.00	57	3	19.90	0.00	66	3	19.90	0.00	75	3	19.91	0.00
47	2	19.90	0.00	56	2	19.90	0.00	65	2	19.90	0.00	74	2	19.90	0.00
46	1	19.90	0.00	55	1	19.90	0.00	64	1	19.90	0.00	73	1	19.90	0.00

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***** NORMALIZED POWER DISTRIBUTION FOR THERMAL CALCULATION *****

CHANNEL# 1			CHANNEL# 2			CHANNEL# 3			CHANNEL# 4			CHANNEL# 5		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
9	9	5.94885E-05	18	9	2.44539E-04	27	9	7.82335E-04	36	9	4.99528E-03	45	9	7.17628E-03
8	8	1.89693E-04	17	8	7.15992E-04	26	8	2.32299E-03	35	8	1.49186E-02	44	8	2.11852E-02
7	7	2.20302E-04	16	7	8.19052E-04	25	7	2.66757E-03	34	7	1.70534E-02	43	7	2.44924E-02
6	6	2.58457E-04	15	6	9.60848E-04	24	6	3.12643E-03	33	6	1.97949E-02	42	6	2.99386E-02
5	5	1.45915E-04	14	5	5.48734E-04	23	5	1.77207E-03	32	5	1.10527E-02	41	5	1.78407E-02
4	4	3.53882E-04	13	4	1.36648E-03	22	4	4.32003E-03	31	4	2.60170E-02	40	4	4.47782E-02
3	3	4.34462E-04	12	3	1.94969E-03	21	3	5.41009E-03	30	3	3.03693E-02	39	3	5.53542E-02
2	2	4.77179E-04	11	2	2.23223E-03	20	2	6.04867E-03	29	2	3.27325E-02	38	2	6.29889E-02
1	1	1.65604E-04	10	1	8.31387E-04	19	1	2.25452E-03	28	1	1.20180E-02	37	1	2.40906E-02

CHANNEL# 6			CHANNEL# 7			CHANNEL# 8			CHANNEL# 9		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
54	9	2.64903E-04	63	9	8.01419E-04	72	9	4.90775E-03	81	9	7.29151E-03
53	8	7.98867E-04	62	8	2.40004E-03	71	8	1.45717E-02	80	8	2.15391E-02
52	7	9.23155E-04	61	7	2.76688E-03	70	7	1.66250E-02	79	7	2.48221E-02
51	6	1.08822E-03	60	6	3.26215E-03	69	6	1.93431E-02	78	6	3.04139E-02
50	5	6.19626E-04	59	5	1.85543E-03	68	5	1.08913E-02	77	5	1.81753E-02
49	4	1.55681E-03	58	4	4.55243E-03	67	4	2.58062E-02	76	4	4.58369E-02
48	3	2.22578E-03	57	3	5.75111E-03	66	3	3.02763E-02	75	3	5.69017E-02
47	2	2.56091E-03	56	2	6.44811E-03	65	2	3.26848E-02	74	2	6.46103E-02
46	1	9.55455E-04	55	1	2.40088E-03	64	1	1.20193E-02	73	1	2.45813E-02

***** WEIGHTING FACTOR FOR DOPPLER REACTIVITY *****

CHANNEL# 1			CHANNEL# 2			CHANNEL# 3			CHANNEL# 4			CHANNEL# 5		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
9	9	2.19898E-05	18	9	5.34412E-05	27	9	1.95268E-04	36	9	1.35769E-03	45	9	2.40014E-03
8	8	1.12063E-04	17	8	2.52807E-04	26	8	9.37759E-04	35	8	6.54293E-03	44	8	1.15007E-02
7	7	1.56474E-04	16	7	3.48011E-04	25	7	1.29536E-03	34	7	8.94439E-03	43	7	1.61987E-02
6	6	2.15169E-04	15	6	4.78215E-04	24	6	1.77557E-03	33	6	1.20388E-02	42	6	2.41278E-02
5	5	1.39811E-04	14	5	3.15611E-04	23	5	1.15668E-03	32	5	7.64206E-03	41	5	1.73314E-02
4	4	4.03793E-04	13	4	9.63764E-04	22	4	3.36966E-03	31	4	2.08761E-02	40	4	5.38242E-02
3	3	6.08779E-04	12	3	1.86425E-03	21	3	5.24100E-03	30	3	2.85972E-02	39	3	8.25418E-02
2	2	7.07615E-04	11	2	2.28763E-03	20	2	6.18955E-03	29	2	3.16373E-02	38	2	9.98939E-02
1	1	1.72939E-04	10	1	5.85438E-04	19	1	1.59462E-03	28	1	7.96603E-03	37	1	2.65992E-02

CHANNEL# 6			CHANNEL# 7			CHANNEL# 8			CHANNEL# 9		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
54	9	6.32314E-05	63	9	2.11866E-04	72	9	1.32768E-03	81	9	2.47630E-03
53	8	3.10307E-04	62	8	1.02491E-03	71	8	6.34267E-03	80	8	1.18098E-02
52	7	4.34055E-04	61	7	1.42274E-03	70	7	8.63946E-03	79	7	1.65342E-02
51	6	6.02448E-04	60	6	1.97054E-03	69	6	1.16942E-02	78	6	2.47521E-02
50	5	3.98330E-04	59	5	1.29742E-03	68	5	7.54635E-03	77	5	1.78956E-02
49	4	1.23454E-03	58	4	3.83362E-03	67	4	2.09156E-02	76	4	5.60792E-02
48	3	2.41095E-03	57	3	6.06552E-03	66	3	2.89451E-02	75	3	8.67648E-02
47	2	2.98812E-03	56	2	7.20361E-03	65	2	3.20676E-02	74	2	1.04827E-01
46	1	7.68440E-04	55	1	1.86423E-03	64	1	8.07774E-03	73	1	2.77396E-02

***** WEIGHTING FACTOR FOR VOID REACTIVITY *****

CHANNEL# 1			CHANNEL# 2			CHANNEL# 3			CHANNEL# 4			CHANNEL# 5		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
9	9	1.62448E-05	18	9	4.08309E-05	27	9	1.65845E-04	36	9	1.13276E-03	45	9	2.14805E-03
8	8	8.33135E-05	17	8	2.09904E-04	26	8	8.54340E-04	35	8	5.83736E-03	44	8	1.10369E-02
7	7	1.27639E-04	16	7	3.25117E-04	25	7	1.32334E-03	34	7	8.94628E-03	43	7	1.76439E-02
6	6	1.75767E-04	15	6	4.47457E-04	24	6	1.81982E-03	33	6	1.20776E-02	42	6	2.63511E-02
5	5	1.09777E-04	14	5	2.80448E-04	23	5	1.13778E-03	32	5	7.35407E-03	41	5	1.83184E-02
4	4	3.30169E-04	13	4	8.98718E-04	22	4	3.45280E-03	31	4	2.09178E-02	40	4	5.98208E-02
3	3	4.96507E-04	12	3	1.79794E-03	21	3	5.35172E-03	30	3	2.84305E-02	39	3	9.09397E-02
2	2	5.23723E-04	11	2	1.96510E-03	20	2	5.56191E-03	29	2	2.77277E-02	38	2	9.54046E-02
1	1	1.25466E-04	10	1	4.61578E-04	19	1	1.30776E-03	28	1	6.39217E-03	37	1	2.30807E-02

CHANNEL# 6			CHANNEL# 7			CHANNEL# 8			CHANNEL# 9		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
54	9	4.84949E-05	63	9	1.79773E-04	72	9	1.10250E-03	81	9	2.20201E-03
53	8	2.51858E-04	62	8	9.31225E-04	71	8	5.65037E-03	80	8	1.12397E-02
52	7	3.93991E-04	61	7	1.44842E-03	70	7	8.63694E-03	79	7	1.78763E-02
51	6	5.47806E-04	60	6	2.01199E-03	69	6	1.17428E-02	78	6	2.68124E-02
50	5	3.47236E-04	59	5	1.27316E-03	68	5	7.25249E-03	77	5	1.87521E-02
49	4	1.12488E-03	58	4	3.91988E-03	67	4	2.09281E-02	76	4	6.16984E-02
48	3	2.28687E-03	57	3	6.18406E-03	66	3	2.87280E-02	75	3	9.45385E-02
47	2	2.51581E-03	56	2	6.48310E-03	65	2	2.80849E-02	74	2	9.92768E-02
46	1	5.93386E-04	55	1	1.52711E-03	64	1	6.47713E-03	73	1	2.39821E-02

***** WEIGHTING FACTOR FOR COOLANT TEMPERATURE REACTIVITY *****

CHANNEL# 1			CHANNEL# 2			CHANNEL# 3			CHANNEL# 4			CHANNEL# 5		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
9	9	1.62448E-05	18	9	4.08309E-05	27	9	1.65845E-04	36	9	1.13276E-03	45	9	2.14805E-03
8	8	8.33135E-05	17	8	2.09904E-04	26	8	8.54340E-04	35	8	5.83736E-03	44	8	1.10369E-02
7	7	1.27639E-04	16	7	3.25117E-04	25	7	1.32334E-03	34	7	8.94628E-03	43	7	1.76439E-02
6	6	1.75767E-04	15	6	4.47457E-04	24	6	1.81982E-03	33	6	1.20776E-02	42	6	2.63511E-02
5	5	1.09777E-04	14	5	2.80448E-04	23	5	1.13778E-03	32	5	7.35407E-03	41	5	1.83184E-02
4	4	3.30169E-04	13	4	8.98718E-04	22	4	3.45280E-03	31	4	2.09178E-02	40	4	5.98208E-02
3	3	4.96507E-04	12	3	1.79794E-03	21	3	5.35172E-03	30	3	2.84305E-02	39	3	9.09397E-02
2	2	5.23723E-04	11	2	1.96510E-03	20	2	5.56191E-03	29	2	2.77277E-02	38	2	9.54046E-02
1	1	1.25466E-04	10	1	4.61578E-04	19	1	1.30776E-03	28	1	6.39217E-03	37	1	2.30807E-02

CHANNEL# 6			CHANNEL# 7			CHANNEL# 8			CHANNEL# 9		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
54	9	4.84949E-05	63	9	1.79773E-04	72	9	1.10250E-03	81	9	2.20201E-03
53	8	2.51858E-04	62	8	9.31225E-04	71	8	5.65037E-03	80	8	1.12397E-02
52	7	3.93991E-04	61	7	1.44842E-03	70	7	8.63694E-03	79	7	1.78763E-02
51	6	5.47806E-04	60	6	2.01199E-03	69	6	1.17428E-02	78	6	2.68124E-02
50	5	3.47236E-04	59	5	1.27316E-03	68	5	7.25249E-03	77	5	1.87521E-02
49	4	1.12488E-03	58	4	3.91988E-03	67	4	2.09281E-02	76	4	6.16984E-02
48	3	2.28687E-03	57	3	6.18406E-03	66	3	2.87280E-02	75	3	9.45385E-02
47	2	2.51581E-03	56	2	6.48310E-03	65	2	2.80849E-02	74	2	9.92768E-02
46	1	5.93386E-04	55	1	1.52711E-03	64	1	6.47713E-03	73	1	2.39821E-02

```
 CITATION CALCULATION FLG(TIME,TEMP,POWER) =     1       30.00000          0.01742          10.00000          0.10000
1

 EUREKA-ATR/MOD1          ( 1)                    THERNAL REACTOR CORE KINETICS CODE
      ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR                                              91-11-28
0 CPU TIME =  221.79
    TIME       NORM POWER    TOTAL REACT CONTROL REAC   VOID REACT   WATER T REAC DOPPLER REAC   PERIOD       F ENTH (C/G- F ENTH (C/G-
      SEC          0              0    %       0    %       0    %       0    %       0    %        0  SEC  SLB  7 UO2)  SLB  8 UO2)
    26.00000  1.38888E+00  1.33936E-01  1.33505E-01  0.00000E+00 -1.73276E-04  6.03903E-04  2.70816E+01  1.07967E+00  1.07985E+00
    27.00000  1.44243E+00  1.44736E-01  1.44300E-01  0.00000E+00 -1.74241E-04  6.10280E-04  2.55977E+01  1.07957E+00  1.07973E+00
    28.00000  1.50126E+00  1.55535E-01  1.55094E-01  0.00000E+00 -1.75059E-04  6.15745E-04  2.42451E+01  1.07947E+00  1.07963E+00
    29.00000  1.56592E+00  1.66333E-01  1.65888E-01  0.00000E+00 -1.75769E-04  6.20474E-04  2.30008E+01  1.07940E+00  1.07955E+00
    30.00000  1.63858E+00  1.77958E-01  1.77510E-01  0.00000E+00 -1.76384E-04  6.24569E-04  2.03203E+01  1.07933E+00  1.07947E+00
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(3)制御棒引抜き場所を炉心中央部としたDBE(パス5)3次元感度解析

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 EUREKA-ATR/MOD1          ( 1)                    THERMAL REACTOR CORE KINETICS CODE
      ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR
0 CPU TIME =   96.72
 STANDARD TIME STEP NUMBER   250.  ACTUAL TIME STEP NUMBER   268.  TIME = 0.250000E+02 SEC.  LAST DT =  0.100000E+00 SEC.
0
 TOTAL SYSTEM    NORM POWR     POWR          ENERGY        TOT. REAC     DOP. REAC     WAT-T REAC    VOID REAC     EXP. REAC     INSTD REAC
 QUANTITIES                    (MW)          (MWS)         (¥)           (¥)           (¥)           (¥)           (¥)           (¥)
                 8.10156E+00   1.54339E-07   1.17298E-06   4.40481E-01   5.67023E-04  -1.66361E-04   0.00000E+00   0.00000E+00   4.40080E-01
0 VOLUME         AVG. PRES     TOT. MASS     AVG. ENTH     AVG. DENS     AVG. TEMP     AVG. QUAL     LIQ. MASS
  NUMBER         (KG/CM**2A)   (KG) H2O      (KC/KG)       (KG/M3)       (C)                         (KG)
     1           3.24508E+00   1.17893E+00   1.99976E+01   9.98521E+02   1.98978E+01   0.00000E+00   1.17893E+00
     2           3.17204E+00   2.35886E+00   1.99973E+01   9.98518E+02   1.98992E+01   0.00000E+00   2.35886E+00
     3           3.05052E+00   2.35884E+00   1.99967E+01   9.98512E+02   1.99013E+01   0.00000E+00   2.35884E+00
     4           2.93928E+00   2.35883E+00   1.99962E+01   9.98506E+02   1.99032E+01   0.00000E+00   2.35883E+00
     5           2.83510E+00   1.17891E+00   1.99956E+01   9.98502E+02   1.99049E+01   0.00000E+00   1.17891E+00
     6           2.74118E+00   2.35881E+00   1.99955E+01   9.98497E+02   1.99069E+01   0.00000E+00   2.35881E+00
     7           2.60899E+00   2.35879E+00   1.99952E+01   9.98491E+02   1.99095E+01   0.00000E+00   2.35879E+00
     8           2.47672E+00   2.35878E+00   1.99949E+01   9.98484E+02   1.99121E+01   0.00000E+00   2.35878E+00
     9           2.39297E+00   1.17889E+00   1.99945E+01   9.98480E+02   1.99136E+01   0.00000E+00   1.17889E+00
    10           3.19388E+00   9.43345E+00   1.99985E+01   9.98518E+02   1.98999E+01   0.00000E+00   9.43345E+00
    11           3.11241E+00   1.88678E+01   1.99984E+01   9.98514E+02   1.99015E+01   0.00000E+00   1.88678E+01
    12           3.00379E+00   1.88677E+01   1.99979E+01   9.98509E+02   1.99035E+01   0.00000E+00   1.88677E+01
    13           2.89511E+00   1.88676E+01   1.99975E+01   9.98504E+02   1.99055E+01   0.00000E+00   1.88676E+01
    14           2.79381E+00   9.43326E+00   1.99970E+01   9.98499E+02   1.99072E+01   0.00000E+00   9.43326E+00
    15           2.71219E+00   1.88675E+01   1.99970E+01   9.98495E+02   1.99090E+01   0.00000E+00   1.88675E+01
    16           2.59344E+00   1.88673E+01   1.99967E+01   9.98490E+02   1.99114E+01   0.00000E+00   1.88673E+01
    17           2.46469E+00   1.88672E+01   1.99966E+01   9.98483E+02   1.99141E+01   0.00000E+00   1.88672E+01
    18           2.37300E+00   9.43307E+00   1.99963E+01   9.98479E+02   1.99158E+01   0.00000E+00   9.43307E+00
    19           3.19789E+00   2.83013E+01   1.99985E+01   9.98519E+02   1.98998E+01   0.00000E+00   2.83013E+01
    20           3.11652E+00   5.66025E+01   1.99983E+01   9.98515E+02   1.99014E+01   0.00000E+00   5.66025E+01
    21           3.00803E+00   5.66022E+01   1.99979E+01   9.98510E+02   1.99034E+01   0.00000E+00   5.66022E+01
    22           2.89950E+00   5.66019E+01   1.99974E+01   9.98504E+02   1.99053E+01   0.00000E+00   5.66019E+01
    23           2.79835E+00   2.83008E+01   1.99969E+01   9.98500E+02   1.99070E+01   0.00000E+00   2.83008E+01
    24           2.71683E+00   5.66014E+01   1.99969E+01   9.98496E+02   1.99088E+01   0.00000E+00   5.66014E+01
    25           2.59820E+00   5.66011E+01   1.99967E+01   9.98490E+02   1.99112E+01   0.00000E+00   5.66011E+01
    26           2.46964E+00   5.66007E+01   1.99967E+01   9.98484E+02   1.99141E+01   0.00000E+00   5.66007E+01
    27           2.37810E+00   2.83002E+01   1.99964E+01   9.98479E+02   1.99158E+01   0.00000E+00   2.83002E+01
    28           3.25113E+00   1.81602E+02   1.99977E+01   9.98521E+02   1.98978E+01   0.00000E+00   1.81602E+02
    29           3.16877E+00   3.63201E+02   1.99973E+01   9.98517E+02   1.98992E+01   0.00000E+00   3.63201E+02
    30           3.05886E+00   3.63199E+02   1.99968E+01   9.98512E+02   1.99011E+01   0.00000E+00   3.63199E+02
    31           2.94887E+00   3.63197E+02   1.99963E+01   9.98507E+02   1.99031E+01   0.00000E+00   3.63197E+02
    32           2.84617E+00   1.81598E+02   1.99957E+01   9.98502E+02   1.99048E+01   0.00000E+00   1.81598E+02
    33           2.75346E+00   3.63194E+02   1.99956E+01   9.98498E+02   1.99067E+01   0.00000E+00   3.63194E+02
    34           2.63313E+00   3.63192E+02   1.99952E+01   9.98492E+02   1.99090E+01   0.00000E+00   3.63192E+02
    35           2.50261E+00   3.63190E+02   1.99951E+01   9.98485E+02   1.99117E+01   0.00000E+00   3.63190E+02
    36           2.41988E+00   1.81595E+02   1.99946E+01   9.98482E+02   1.99131E+01   0.00000E+00   1.81595E+02
    37           3.20563E+00   1.43866E+02   1.99982E+01   9.98519E+02   1.98994E+01   0.00000E+00   1.43866E+02
    38           3.12391E+00   2.87730E+02   1.99981E+01   9.98515E+02   1.99010E+01   0.00000E+00   2.87730E+02
    39           3.01494E+00   2.87729E+02   1.99976E+01   9.98510E+02   1.99029E+01   0.00000E+00   2.87729E+02
    40           2.90588E+00   2.87727E+02   1.99971E+01   9.98505E+02   1.99048E+01   0.00000E+00   2.87727E+02
    41           2.80420E+00   1.43863E+02   1.99965E+01   9.98500E+02   1.99065E+01   0.00000E+00   1.43863E+02
    42           2.72232E+00   2.87725E+02   1.99965E+01   9.98496E+02   1.99083E+01   0.00000E+00   2.87725E+02
    43           2.59315E+00   2.87723E+02   1.99964E+01   9.98490E+02   1.99111E+01   0.00000E+00   2.87723E+02
    44           2.46389E+00   2.87721E+02   1.99964E+01   9.98483E+02   1.99139E+01   0.00000E+00   2.87721E+02
    45           2.38179E+00   1.43860E+02   1.99960E+01   9.98479E+02   1.99153E+01   0.00000E+00   1.43860E+02
    46           3.19112E+00   8.25451E+00   1.99987E+01   9.98518E+02   1.99001E+01   0.00000E+00   8.25451E+00
    47           3.10993E+00   1.65090E+01   1.99985E+01   9.98514E+02   1.99017E+01   0.00000E+00   1.65090E+01
    48           3.00170E+00   1.65089E+01   1.99980E+01   9.98509E+02   1.99036E+01   0.00000E+00   1.65089E+01
    49           2.89333E+00   1.65088E+01   1.99977E+01   9.98504E+02   1.99057E+01   0.00000E+00   1.65088E+01
    50           2.79245E+00   8.25436E+00   1.99971E+01   9.98499E+02   1.99074E+01   0.00000E+00   8.25436E+00
    51           2.71107E+00   1.65086E+01   1.99971E+01   9.98495E+02   1.99092E+01   0.00000E+00   1.65086E+01
    52           2.59269E+00   1.65086E+01   1.99971E+01   9.98489E+02   1.99117E+01   0.00000E+00   1.65086E+01
    53           2.46442E+00   1.65084E+01   1.99970E+01   9.98483E+02   1.99145E+01   0.00000E+00   1.65084E+01
    54           2.37310E+00   8.25419E+00   1.99966E+01   9.98479E+02   1.99161E+01   0.00000E+00   8.25419E+00
    55           3.19787E+00   2.83013E+01   1.99985E+01   9.98519E+02   1.98998E+01   0.00000E+00   2.83013E+01
    56           3.11655E+00   5.66025E+01   1.99983E+01   9.98515E+02   1.99014E+01   0.00000E+00   5.66025E+01
    57           3.00805E+00   5.66022E+01   1.99979E+01   9.98510E+02   1.99033E+01   0.00000E+00   5.66022E+01
    58           2.89948E+00   5.66019E+01   1.99974E+01   9.98504E+02   1.99053E+01   0.00000E+00   5.66019E+01
    59           2.79832E+00   2.83008E+01   1.99969E+01   9.98500E+02   1.99070E+01   0.00000E+00   2.83008E+01
    60           2.71680E+00   5.66014E+01   1.99970E+01   9.98496E+02   1.99089E+01   0.00000E+00   5.66014E+01
    61           2.59816E+00   5.66010E+01   1.99968E+01   9.98490E+02   1.99113E+01   0.00000E+00   5.66010E+01
    62           2.46964E+00   5.66007E+01   1.99967E+01   9.98484E+02   1.99140E+01   0.00000E+00   5.66007E+01
    63           2.37810E+00   2.83002E+01   1.99964E+01   9.98479E+02   1.99157E+01   0.00000E+00   2.83002E+01
    64           3.25113E+00   1.81602E+02   1.99976E+01   9.98521E+02   1.98977E+01   0.00000E+00   1.81602E+02
    65           3.16872E+00   3.63201E+02   1.99974E+01   9.98517E+02   1.98993E+01   0.00000E+00   3.63201E+02
    66           3.05882E+00   3.63199E+02   1.99968E+01   9.98512E+02   1.99012E+01   0.00000E+00   3.63199E+02
    67           2.94885E+00   3.63197E+02   1.99963E+01   9.98507E+02   1.99031E+01   0.00000E+00   3.63197E+02
    68           2.84609E+00   1.81598E+02   1.99957E+01   9.98502E+02   1.99048E+01   0.00000E+00   1.81598E+02
    69           2.75340E+00   3.63194E+02   1.99955E+01   9.98498E+02   1.99066E+01   0.00000E+00   3.63194E+02
    70           2.63307E+00   3.63192E+02   1.99953E+01   9.98492E+02   1.99091E+01   0.00000E+00   3.63192E+02
    71           2.50258E+00   3.63190E+02   1.99949E+01   9.98486E+02   1.99116E+01   0.00000E+00   3.63190E+02
    72           2.41978E+00   1.81595E+02   1.99947E+01   9.98482E+02   1.99131E+01   0.00000E+00   1.81595E+02
    73           3.20560E+00   1.43866E+02   1.99982E+01   9.98519E+02   1.98994E+01   0.00000E+00   1.43866E+02
    74           3.12388E+00   2.87730E+02   1.99981E+01   9.98515E+02   1.99010E+01   0.00000E+00   2.87730E+02
    75           3.01490E+00   2.87729E+02   1.99976E+01   9.98510E+02   1.99029E+01   0.00000E+00   2.87729E+02
    76           2.90589E+00   2.87727E+02   1.99971E+01   9.98505E+02   1.99048E+01   0.00000E+00   2.87727E+02
    77           2.80419E+00   1.43863E+02   1.99966E+01   9.98500E+02   1.99066E+01   0.00000E+00   1.43863E+02
    78           2.72229E+00   2.87725E+02   1.99966E+01   9.98496E+02   1.99084E+01   0.00000E+00   2.87725E+02
    79           2.59311E+00   2.87723E+02   1.99964E+01   9.98490E+02   1.99111E+01   0.00000E+00   2.87723E+02
    80           2.46391E+00   2.87721E+02   1.99962E+01   9.98483E+02   1.99137E+01   0.00000E+00   2.87721E+02
    81           2.38183E+00   1.43860E+02   1.99959E+01   9.98479E+02   1.99152E+01   0.00000E+00   1.43860E+02
    82           3.87384E+00   2.42053E+01   1.99986E+01   9.98551E+02   1.98850E+01   0.00000E+00   2.42053E+01
    83           3.84654E+00   2.21768E+02   1.99995E+01   9.98550E+02   1.98865E+01   0.00000E+00   2.21768E+02
    84           3.84872E+00   6.63936E+02   1.99995E+01   9.98550E+02   1.98865E+01   0.00000E+00   6.63936E+02
    85           3.87847E+00   3.72180E+03   1.99987E+01   9.98552E+02   1.98849E+01   0.00000E+00   3.72180E+03
    86           3.85193E+00   3.26720E+03   1.99993E+01   9.98550E+02   1.98861E+01   0.00000E+00   3.26720E+03
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87	3.84564E+00	1.97550E+02	1.99997E+01	9.98550E+02	1.98867E+01	0.00000E+00	1.97550E+02	
88	3.84871E+00	6.63936E+02	1.99995E+01	9.98550E+02	1.98865E+01	0.00000E+00	6.63936E+02	
89	3.87845E+00	3.72180E+03	1.99987E+01	9.98552E+02	1.98849E+01	0.00000E+00	3.72180E+03	
90	3.84198E+00	3.26720E+03	1.99993E+01	9.98550E+02	1.98864E+01	0.00000E+00	3.26720E+03	
91	1.72244E+00	6.76452E+01	2.00152E+01	9.98444E+02	1.99491E+01	0.00000E+00	6.76452E+01	
92	1.71302E+00	6.08985E+02	2.00219E+01	9.98442E+02	1.99561E+01	0.00000E+00	6.08985E+02	
93	1.71559E+00	1.92352E+03	2.00235E+01	9.98442E+02	1.99575E+01	0.00000E+00	1.92352E+03	
94	1.73110E+00	1.50196E+04	2.00263E+01	9.98442E+02	1.99600E+01	0.00000E+00	1.50196E+04	
95	1.71735E+00	9.90324E+03	2.00230E+01	9.98442E+02	1.99571E+01	0.00000E+00	9.90324E+03	
96	1.71315E+00	5.41239E+02	2.00229E+01	9.98442E+02	1.99570E+01	0.00000E+00	5.41239E+02	
97	1.71559E+00	1.92352E+03	2.00235E+01	9.98442E+02	1.99575E+01	0.00000E+00	1.92352E+03	
98	1.74119E+00	1.50196E+04	2.00264E+01	9.98443E+02	1.99599E+01	0.00000E+00	1.50196E+04	
99	1.71735E+00	9.90324E+03	2.00230E+01	9.98442E+02	1.99570E+01	0.00000E+00	9.90324E+03	
100	4.50679E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98711E+01	0.00000E+00	8.86301E+03	
101	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05	
102	4.50679E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98711E+01	0.00000E+00	8.86301E+03	
103	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05	

0 HEAT SLAB NUMBER	VOL NUM	H.T. MODE	SURF FLUX (KC/HR/M2)	CRIT FLUX (KC/HR/M2)	H.T. COEF (KC/H/M2/C)	SURF TEMP (C)	LOCAL ENGY (CAL/G-U02)	VOID FRAC	LOCAL MASS FLUX	LOCAL FLUID TEMP.
1	1	1	-7.59983E+00	5.86822E+06	1.09321E+04	1.98974E+01	1.07868E+00	0.00000E+00	4.89480E+06	1.98978E+01
2	2	1	0.00000E+00	5.84390E+06	0.00000E+00	1.98993E+01	1.07877E+00	0.00000E+00	4.89480E+06	1.98992E+01
3	3	1	3.14588E+00	5.83228E+06	1.08555E+04	1.99017E+01	1.07890E+00	0.00000E+00	4.89480E+06	1.99013E+01
4	4	1	-1.23668E+00	6.76375E+06	1.08108E+04	1.99032E+01	1.07903E+00	0.00000E+00	4.89480E+06	1.99032E+01
5	5	1	-3.75377E+00	6.95544E+06	1.07683E+04	1.99047E+01	1.07913E+00	0.00000E+00	4.89480E+06	1.99049E+01
6	6	1	5.07841E+00	6.94462E+06	1.07294E+04	1.99075E+01	1.07926E+00	0.00000E+00	4.89480E+06	1.99069E+01
7	7	1	8.06883E+00	6.92936E+06	1.06735E+04	1.99104E+01	1.07944E+00	0.00000E+00	4.89480E+06	1.99095E+01
8	8	1	3.09810E+00	6.36669E+06	1.06163E+04	1.99126E+01	1.07961E+00	0.00000E+00	4.89480E+06	1.99121E+01
9	9	1	5.56460E+00	6.35774E+06	1.05794E+04	1.99143E+01	1.07970E+00	0.00000E+00	4.89479E+06	1.99136E+01
10	10	1	-6.40016E+00	5.86332E+06	1.07104E+04	1.98995E+01	1.07882E+00	0.00000E+00	4.78196E+06	1.98999E+01
11	11	1	2.31732E+00	5.83820E+06	1.06789E+04	1.99019E+01	1.07893E+00	0.00000E+00	4.78196E+06	1.99015E+01
12	12	1	5.69321E+00	5.82781E+06	1.06365E+04	1.99042E+01	1.07905E+00	0.00000E+00	4.78196E+06	1.99035E+01
13	13	1	5.36796E+00	6.75883E+06	1.05934E+04	1.99062E+01	1.07918E+00	0.00000E+00	4.78196E+06	1.99055E+01
14	14	1	8.35676E-03	6.95069E+06	1.05526E+04	1.99073E+01	1.07929E+00	0.00000E+00	4.78196E+06	1.99072E+01
15	15	1	4.56166E+00	6.94128E+06	1.05191E+04	1.99096E+01	1.07942E+00	0.00000E+00	4.78196E+06	1.99090E+01
16	16	1	-9.78860E-01	6.92756E+06	1.04696E+04	1.99115E+01	1.07957E+00	0.00000E+00	4.78196E+06	1.99114E+01
17	17	1	2.93540E+00	6.36540E+06	1.04149E+04	1.99146E+01	1.07976E+00	0.00000E+00	4.78196E+06	1.99141E+01
18	18	1	5.03790E+00	6.35561E+06	1.03752E+04	1.99165E+01	1.07986E+00	0.00000E+00	4.78196E+06	1.99158E+01
19	19	1	-5.41611E+00	5.86371E+06	1.07019E+04	1.98995E+01	1.07881E+00	0.00000E+00	4.77637E+06	1.98998E+01
20	20	1	3.60085E+00	5.83860E+06	1.06705E+04	1.99019E+01	1.07892E+00	0.00000E+00	4.77636E+06	1.99014E+01
21	21	1	6.37902E+00	5.82821E+06	1.06282E+04	1.99041E+01	1.07905E+00	0.00000E+00	4.77636E+06	1.99034E+01
22	22	1	-1.19399E+00	6.75932E+06	1.05852E+04	1.99054E+01	1.07918E+00	0.00000E+00	4.77636E+06	1.99053E+01
23	23	1	-2.12686E+00	6.95121E+06	1.05445E+04	1.99070E+01	1.07928E+00	0.00000E+00	4.77636E+06	1.99070E+01
24	24	1	-9.91487E-01	6.94181E+06	1.05112E+04	1.99090E+01	1.07941E+00	0.00000E+00	4.77636E+06	1.99088E+01
25	25	1	3.20495E+00	6.92812E+06	1.04618E+04	1.99118E+01	1.07957E+00	0.00000E+00	4.77636E+06	1.99112E+01
26	26	1	8.02575E+00	6.36593E+06	1.04072E+04	1.99151E+01	1.07975E+00	0.00000E+00	4.77636E+06	1.99141E+01
27	27	1	5.16680E+00	6.35615E+06	1.03677E+04	1.99166E+01	1.07986E+00	0.00000E+00	4.77636E+06	1.99158E+01
28	28	1	1.69951E+00	5.86880E+06	1.08361E+04	1.98981E+01	1.07868E+00	0.00000E+00	4.83981E+06	1.98978E+01
29	29	1	-5.81476E+00	5.84359E+06	1.08042E+04	1.98989E+01	1.07878E+00	0.00000E+00	4.83981E+06	1.98992E+01
30	30	1	7.85327E-01	5.83308E+06	1.07611E+04	1.99014E+01	1.07890E+00	0.00000E+00	4.83981E+06	1.99011E+01
31	31	1	4.88011E+00	6.76483E+06	1.07174E+04	1.99037E+01	1.07902E+00	0.00000E+00	4.83981E+06	1.99031E+01
32	32	1	-4.68173E+00	6.95671E+06	1.06759E+04	1.99046E+01	1.07913E+00	0.00000E+00	4.83980E+06	1.99048E+01
33	33	1	-3.92164E+00	6.94603E+06	1.06379E+04	1.99066E+01	1.07926E+00	0.00000E+00	4.83980E+06	1.99067E+01
34	34	1	1.87443E+00	6.93216E+06	1.05877E+04	1.99094E+01	1.07941E+00	0.00000E+00	4.83980E+06	1.99090E+01
35	35	1	8.07959E+00	6.36945E+06	1.05319E+04	1.99127E+01	1.07959E+00	0.00000E+00	4.83980E+06	1.99117E+01
36	36	1	-6.20681E-01	6.36061E+06	1.04960E+04	1.99133E+01	1.07968E+00	0.00000E+00	4.83980E+06	1.99131E+01
37	37	1	-3.48495E+00	5.86445E+06	1.07440E+04	1.98993E+01	1.07879E+00	0.00000E+00	4.79817E+06	1.98994E+01
38	38	1	4.50529E+00	5.83930E+06	1.07124E+04	1.99016E+01	1.07889E+00	0.00000E+00	4.79817E+06	1.99010E+01
39	39	1	1.58986E+00	5.82887E+06	1.06697E+04	1.99032E+01	1.07901E+00	0.00000E+00	4.79817E+06	1.99029E+01
40	40	1	5.01782E+00	6.76003E+06	1.06264E+04	1.99054E+01	1.07914E+00	0.00000E+00	4.79817E+06	1.99048E+01
41	41	1	2.07900E-01	6.95188E+06	1.05854E+04	1.99068E+01	1.07926E+00	0.00000E+00	4.79817E+06	1.99065E+01
42	42	1	-1.67646E+00	6.94244E+06	1.05518E+04	1.99084E+01	1.07937E+00	0.00000E+00	4.79817E+06	1.99083E+01
43	43	1	5.75602E+00	6.92754E+06	1.04979E+04	1.99118E+01	1.07955E+00	0.00000E+00	4.79816E+06	1.99111E+01
44	44	1	1.23607E+01	6.36532E+06	1.04427E+04	1.99152E+01	1.07973E+00	0.00000E+00	4.79816E+06	1.99139E+01
45	45	1	1.38182E+01	6.35655E+06	1.04071E+04	1.99168E+01	1.07982E+00	0.00000E+00	4.79816E+06	1.99153E+01
46	46	1	2.36677E-01	5.86306E+06	1.06818E+04	1.99004E+01	1.07884E+00	0.00000E+00	4.76657E+06	1.99001E+01
47	47	1	3.48606E+00	5.83797E+06	1.06505E+04	1.99022E+01	1.07894E+00	0.00000E+00	4.76657E+06	1.99017E+01
48	48	1	-2.49572E+00	5.82760E+06	1.06083E+04	1.99036E+01	1.07907E+00	0.00000E+00	4.76657E+06	1.99036E+01
49	49	1	6.32453E+00	6.75863E+06	1.05654E+04	1.99065E+01	1.07920E+00	0.00000E+00	4.76657E+06	1.99057E+01
50	50	1	-2.94243E+00	6.95053E+06	1.05248E+04	1.99073E+01	1.07931E+00	0.00000E+00	4.76657E+06	1.99074E+01
51	51	1	1.95963E+00	6.94115E+06	1.04916E+04	1.99096E+01	1.07943E+00	0.00000E+00	4.76657E+06	1.99092E+01
52	52	1	1.17589E+01	6.92748E+06	1.04424E+04	1.99130E+01	1.07960E+00	0.00000E+00	4.76657E+06	1.99117E+01
53	53	1	1.50989E+01	6.36538E+06	1.03879E+04	1.99161E+01	1.07978E+00	0.00000E+00	4.76656E+06	1.99145E+01
54	54	1	5.51409E+00	6.35562E+06	1.03485E+04	1.99168E+01	1.07988E+00	0.00000E+00	4.76656E+06	1.99161E+01
55	55	1	0.00000E+00	5.86370E+06	0.00000E+00	1.99000E+01	1.07881E+00	0.00000E+00	4.77636E+06	1.98998E+01
56	56	1	-4.26319E+00	5.83860E+06	1.06705E+04	1.99012E+01	1.07892E+00	0.00000E+00	4.77636E+06	1.99014E+01
57	57	1	1.87907E+00	5.82821E+06	1.06282E+04	1.99037E+01	1.07905E+00	0.00000E+00	4.77635E+06	1.99033E+01
58	58	1	4.84513E+00	6.75931E+06	1.05852E+04	1.99059E+01	1.07918E+00	0.00000E+00	4.77635E+06	1.99053E+01
59	59	1	4.05974E+00	6.95121E+06	1.05445E+04	1.99076E+01	1.07929E+00	0.00000E+00	4.77635E+06	1.99070E+01
60	60	1	8.04045E+00	6.94181E+06	1.05111E+04	1.99098E+01	1.07941E+00	0.00000E+00	4.77635E+06	1.99089E+01
61	61	1	1.25009E+01	6.92812E+06	1.04618E+04	1.99127E+01	1.07958E+00	0.00000E+00	4.77635E+06	1.99113E+01
62	62	1	7.02030E+00	6.36593E+06	1.04072E+04	1.99149E+01	1.07975E+00	0.00000E+00	4.77635E+06	1.99140E+01
63	63	1	4.86739E+00	6.35615E+06	1.03677E+04	1.99165E+01	1.07986E+00	0.00000E+00	4.77635E+06	1.99157E+01
64	64	1	-5.16065E+00	5.86880E+06	1.08362E+04	1.98975E+01	1.07868E+00	0.00000E+00	4.83986E+06	1.98977E+01
65	65	1	0.00000E+00	5.84358E+06	0.00000E+00	1.98995E+01	1.07878E+00	0.00000E+00	4.83986E+06	1.98993E+01
66	66	1	4.84427E-01	5.83307E+06	1.07611E+04	1.99014E+01	1.07890E+00	0.00000E+00	4.83986E+06	1.99012E+01
67	67	1	7.93606E-01	6.76482E+06	1.07175E+04	1.99033E+01	1.07902E+00	0.00000E+00	4.83986E+06	1.99031E+01
68	68	1	2.97602E+00	6.95670E+06	1.06760E+04	1.99052E+01	1.07913E+00	0.00000E+00	4.83986E+06	1.99048E+01
69	69	1	7.59215E-02	6.94603E+06	1.06380E+04	1.99068E+01	1.07925E+00	0.00000E+00	4.83986E+06	1.99066E+01
70	70	1	1.03825E+01	6.93215E+06	1.05877E+04	1.99102E+01	1.07941E+00	0.00000E+00	4.83986E+06	1.99091E+01
71	71	1	2.05802E+00	6.36945E+06	1.05320E+04	1.99120E+01	1.07958E+00	0.00000E+00	4.83986E+06	1.99116E+01
72	72	1	1.35961E+01	6.36061E+06	1.04961E+04	1.99146E+01	1.07968E+00	0.00000E+00	4.83986E+06	1.99131E+01
73	73	1	-3.57087E+00	5.86445E+06	1.07438E+04	1.98992E+01	1.07878E+00	0.00000E+00	4.79806E+06	1.98994E+01
74	74	1	4.67960E+00	5.83930E+06	1.07122E+04	1.99016E+01	1.07889E+00	0.00000E+00	4.79806E+06	1.99010E+01
75	75	1	6.00649E+00	5.82887E+06	1.06695E+04	1.99036E+01	1.07901E+00	0.00000E+00	4.79806E+06	1.99029E+01
76	76	1	-1.27576E+00	6.76003E+06	1.06262E+04	1.99049E+01	1.07915E+00	0.00000E+00	4.79806E+06	1.99048E+01
77	77	1	-1.07024E+00	6.95188E+06	1.05852E+04	1.99067E+01	1.07925E+00	0.00000E+00	4.79806E+06	1.99066E+01

78	78	1	3.29333E-01	6.94244E+06	1.05516E+04	1.99087E+01	1.07937E+00	0.00000E+00	4.79806E+06	1.99084E+01
79	79	1	8.56583E+00	6.92753E+06	1.04977E+04	1.99120E+01	1.07954E+00	0.00000E+00	4.79806E+06	1.99111E+01
80	80	1	1.32635E+00	6.36532E+06	1.04426E+04	1.99140E+01	1.07972E+00	0.00000E+00	4.79805E+06	1.99137E+01
81	81	1	4.03705E+00	6.35655E+06	1.04070E+04	1.99158E+01	1.07982E+00	0.00000E+00	4.79805E+06	1.99152E+01

0 HEAT SLAB NUMBER	VOL NUM	GAP CONDUCTANCE (KCAL/M2/HR/C)	GAP DISTANCE (M)	CENT TEMP (C)	AVG. TEMP (C)	FUEL POWER (MW)
1	1	3.20000E+02	0.00000E+00	1.99019E+01	1.99005E+01	1.10844E-11
2	2	3.20000E+02	0.00000E+00	1.99036E+01	1.99020E+01	4.92030E-11
3	3	3.20000E+02	0.00000E+00	1.99063E+01	1.99045E+01	5.07654E-11
4	4	3.20000E+02	0.00000E+00	1.99088E+01	1.99068E+01	4.51812E-11
5	5	3.20000E+02	0.00000E+00	1.99109E+01	1.99086E+01	2.12138E-11
6	6	3.20000E+02	0.00000E+00	1.99135E+01	1.99111E+01	4.28072E-11
7	7	3.20000E+02	0.00000E+00	1.99169E+01	1.99142E+01	4.30479E-11
8	8	3.20000E+02	0.00000E+00	1.99204E+01	1.99174E+01	4.31746E-11
9	9	3.20000E+02	0.00000E+00	1.99222E+01	1.99191E+01	1.53524E-11
10	10	1.90000E+03	0.00000E+00	1.99047E+01	1.99030E+01	7.70176E-11
11	11	1.90000E+03	0.00000E+00	1.99068E+01	1.99050E+01	3.06061E-10
12	12	1.90000E+03	0.00000E+00	1.99093E+01	1.99072E+01	3.05832E-10
13	13	1.90000E+03	0.00000E+00	1.99120E+01	1.99097E+01	2.70382E-10
14	14	1.90000E+03	0.00000E+00	1.99141E+01	1.99115E+01	1.25940E-10
15	15	1.90000E+03	0.00000E+00	1.99167E+01	1.99139E+01	2.50867E-10
16	16	1.90000E+03	0.00000E+00	1.99199E+01	1.99167E+01	2.49291E-10
17	17	1.90000E+03	0.00000E+00	1.99236E+01	1.99201E+01	2.51276E-10
18	18	1.90000E+03	0.00000E+00	1.99257E+01	1.99220E+01	9.77463E-11
19	19	1.90000E+03	0.00000E+00	1.99046E+01	1.99029E+01	2.32207E-10
20	20	1.90000E+03	0.00000E+00	1.99068E+01	1.99049E+01	9.49983E-10
21	21	1.90000E+03	0.00000E+00	1.99093E+01	1.99072E+01	1.04335E-09
22	22	1.90000E+03	0.00000E+00	1.99120E+01	1.99095E+01	9.99417E-10
23	23	1.90000E+03	0.00000E+00	1.99140E+01	1.99115E+01	4.67386E-10
24	24	1.90000E+03	0.00000E+00	1.99166E+01	1.99138E+01	9.28637E-10
25	25	1.90000E+03	0.00000E+00	1.99199E+01	1.99167E+01	9.22606E-10
26	26	1.90000E+03	0.00000E+00	1.99234E+01	1.99200E+01	9.31003E-10
27	27	1.90000E+03	0.00000E+00	1.99256E+01	1.99221E+01	3.52420E-10
28	28	1.90000E+03	0.00000E+00	1.99018E+01	1.99004E+01	8.56915E-10
29	29	1.90000E+03	0.00000E+00	1.99038E+01	1.99022E+01	3.67079E-09
30	30	1.90000E+03	0.00000E+00	1.99062E+01	1.99044E+01	4.46364E-09
31	31	1.90000E+03	0.00000E+00	1.99087E+01	1.99067E+01	4.78124E-09
32	32	1.90000E+03	0.00000E+00	1.99109E+01	1.99087E+01	2.39608E-09
33	33	1.90000E+03	0.00000E+00	1.99135E+01	1.99110E+01	5.02997E-09
34	34	1.90000E+03	0.00000E+00	1.99166E+01	1.99138E+01	5.25166E-09
35	35	1.90000E+03	0.00000E+00	1.99201E+01	1.99171E+01	5.38527E-09
36	36	1.90000E+03	0.00000E+00	1.99219E+01	1.99186E+01	2.04917E-09
37	37	1.90000E+03	0.00000E+00	1.99040E+01	1.99024E+01	1.10475E-09
38	38	1.90000E+03	0.00000E+00	1.99061E+01	1.99043E+01	4.52423E-09
39	39	1.90000E+03	0.00000E+00	1.99086E+01	1.99065E+01	5.12680E-09
40	40	1.90000E+03	0.00000E+00	1.99112E+01	1.99089E+01	5.06173E-09
41	41	1.90000E+03	0.00000E+00	1.99134E+01	1.99110E+01	2.33863E-09
42	42	1.90000E+03	0.00000E+00	1.99159E+01	1.99131E+01	4.55943E-09
43	43	1.90000E+03	0.00000E+00	1.99194E+01	1.99164E+01	4.52118E-09
44	44	1.90000E+03	0.00000E+00	1.99229E+01	1.99196E+01	4.59576E-09
45	45	1.90000E+03	0.00000E+00	1.99248E+01	1.99213E+01	1.76917E-09
46	46	1.90000E+03	0.00000E+00	1.99050E+01	1.99033E+01	6.82616E-11
47	47	1.90000E+03	0.00000E+00	1.99071E+01	1.99052E+01	2.77202E-10
48	48	1.90000E+03	0.00000E+00	1.99097E+01	1.99075E+01	2.79980E-10
49	49	1.90000E+03	0.00000E+00	1.99124E+01	1.99100E+01	2.46582E-10
50	50	1.90000E+03	0.00000E+00	1.99145E+01	1.99120E+01	1.14272E-10
51	51	1.90000E+03	0.00000E+00	1.99171E+01	1.99142E+01	2.26892E-10
52	52	1.90000E+03	0.00000E+00	1.99203E+01	1.99172E+01	2.25066E-10
53	53	1.90000E+03	0.00000E+00	1.99240E+01	1.99206E+01	2.27467E-10
54	54	1.90000E+03	0.00000E+00	1.99262E+01	1.99224E+01	8.58068E-11
55	55	1.90000E+03	0.00000E+00	1.99046E+01	1.99029E+01	2.33347E-10
56	56	1.90000E+03	0.00000E+00	1.99067E+01	1.99048E+01	9.46473E-10
57	57	1.90000E+03	0.00000E+00	1.99093E+01	1.99072E+01	1.02966E-09
58	58	1.90000E+03	0.00000E+00	1.99119E+01	1.99095E+01	9.78113E-10
59	59	1.90000E+03	0.00000E+00	1.99141E+01	1.99115E+01	4.55504E-10
60	60	1.90000E+03	0.00000E+00	1.99166E+01	1.99138E+01	9.02093E-10
61	61	1.90000E+03	0.00000E+00	1.99199E+01	1.99168E+01	8.95003E-10
62	62	1.90000E+03	0.00000E+00	1.99234E+01	1.99200E+01	9.05474E-10
63	63	1.90000E+03	0.00000E+00	1.99256E+01	1.99221E+01	3.49166E-10
64	64	1.90000E+03	0.00000E+00	1.99019E+01	1.99004E+01	8.60965E-10
65	65	1.90000E+03	0.00000E+00	1.99039E+01	1.99023E+01	3.68606E-09
66	66	1.90000E+03	0.00000E+00	1.99063E+01	1.99044E+01	4.47251E-09
67	67	1.90000E+03	0.00000E+00	1.99087E+01	1.99067E+01	4.76657E-09
68	68	1.90000E+03	0.00000E+00	1.99109E+01	1.99086E+01	2.37494E-09
69	69	1.90000E+03	0.00000E+00	1.99135E+01	1.99109E+01	4.95921E-09
70	70	1.90000E+03	0.00000E+00	1.99166E+01	1.99139E+01	5.17799E-09
71	71	1.90000E+03	0.00000E+00	1.99200E+01	1.99169E+01	5.32214E-09
72	72	1.90000E+03	0.00000E+00	1.99220E+01	1.99188E+01	2.02990E-09
73	73	1.90000E+03	0.00000E+00	1.99040E+01	1.99024E+01	1.11887E-09
74	74	1.90000E+03	0.00000E+00	1.99061E+01	1.99043E+01	4.61015E-09
75	75	1.90000E+03	0.00000E+00	1.99086E+01	1.99065E+01	5.23408E-09
76	76	1.90000E+03	0.00000E+00	1.99113E+01	1.99090E+01	5.14096E-09
77	77	1.90000E+03	0.00000E+00	1.99133E+01	1.99109E+01	2.36303E-09
78	78	1.90000E+03	0.00000E+00	1.99158E+01	1.99131E+01	4.59734E-09
79	79	1.90000E+03	0.00000E+00	1.99193E+01	1.99162E+01	4.55637E-09
80	80	1.90000E+03	0.00000E+00	1.99228E+01	1.99195E+01	4.65766E-09
81	81	1.90000E+03	0.00000E+00	1.99247E+01	1.99212E+01	1.79024E-09

O SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	1	1.99019E+01	2	1.99019E+01	3	1.99018E+01	4	1.99016E+01	5	1.99014E+01	6	1.99012E+01	7	1.99009E+01
2	1	1.99036E+01	2	1.99036E+01	3	1.99035E+01	4	1.99033E+01	5	1.99031E+01	6	1.99028E+01	7	1.99025E+01
3	1	1.99063E+01	2	1.99062E+01	3	1.99061E+01	4	1.99059E+01	5	1.99057E+01	6	1.99054E+01	7	1.99050E+01
4	1	1.99088E+01	2	1.99088E+01	3	1.99087E+01	4	1.99084E+01	5	1.99082E+01	6	1.99078E+01	7	1.99074E+01
5	1	1.99109E+01	2	1.99108E+01	3	1.99107E+01	4	1.99105E+01	5	1.99102E+01	6	1.99098E+01	7	1.99093E+01
6	1	1.99135E+01	2	1.99135E+01	3	1.99133E+01	4	1.99131E+01	5	1.99127E+01	6	1.99122E+01	7	1.99117E+01
7	1	1.99169E+01	2	1.99169E+01	3	1.99167E+01	4	1.99164E+01	5	1.99160E+01	6	1.99155E+01	7	1.99150E+01
8	1	1.99204E+01	2	1.99204E+01	3	1.99202E+01	4	1.99199E+01	5	1.99195E+01	6	1.99189E+01	7	1.99183E+01
9	1	1.99222E+01	2	1.99221E+01	3	1.99219E+01	4	1.99216E+01	5	1.99211E+01	6	1.99206E+01	7	1.99199E+01
10	1	1.99047E+01	2	1.99047E+01	3	1.99046E+01	4	1.99044E+01	5	1.99042E+01	6	1.99039E+01	7	1.99035E+01
11	1	1.99068E+01	2	1.99068E+01	3	1.99067E+01	4	1.99065E+01	5	1.99062E+01	6	1.99059E+01	7	1.99055E+01
12	1	1.99093E+01	2	1.99093E+01	3	1.99091E+01	4	1.99089E+01	5	1.99086E+01	6	1.99083E+01	7	1.99078E+01
13	1	1.99120E+01	2	1.99119E+01	3	1.99118E+01	4	1.99116E+01	5	1.99112E+01	6	1.99108E+01	7	1.99103E+01
14	1	1.99141E+01	2	1.99141E+01	3	1.99139E+01	4	1.99136E+01	5	1.99133E+01	6	1.99128E+01	7	1.99123E+01
15	1	1.99167E+01	2	1.99166E+01	3	1.99164E+01	4	1.99162E+01	5	1.99158E+01	6	1.99152E+01	7	1.99146E+01
16	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99188E+01	6	1.99182E+01	7	1.99176E+01
17	1	1.99236E+01	2	1.99235E+01	3	1.99233E+01	4	1.99229E+01	5	1.99224E+01	6	1.99218E+01	7	1.99211E+01
18	1	1.99257E+01	2	1.99256E+01	3	1.99254E+01	4	1.99250E+01	5	1.99245E+01	6	1.99239E+01	7	1.99231E+01
19	1	1.99046E+01	2	1.99046E+01	3	1.99045E+01	4	1.99043E+01	5	1.99041E+01	6	1.99038E+01	7	1.99034E+01
20	1	1.99068E+01	2	1.99067E+01	3	1.99066E+01	4	1.99064E+01	5	1.99061E+01	6	1.99058E+01	7	1.99054E+01
21	1	1.99093E+01	2	1.99093E+01	3	1.99091E+01	4	1.99089E+01	5	1.99086E+01	6	1.99082E+01	7	1.99077E+01
22	1	1.99120E+01	2	1.99119E+01	3	1.99118E+01	4	1.99115E+01	5	1.99112E+01	6	1.99107E+01	7	1.99102E+01
23	1	1.99140E+01	2	1.99139E+01	3	1.99138E+01	4	1.99135E+01	5	1.99132E+01	6	1.99127E+01	7	1.99122E+01
24	1	1.99166E+01	2	1.99166E+01	3	1.99164E+01	4	1.99161E+01	5	1.99157E+01	6	1.99152E+01	7	1.99146E+01
25	1	1.99199E+01	2	1.99198E+01	3	1.99197E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99177E+01
26	1	1.99234E+01	2	1.99234E+01	3	1.99232E+01	4	1.99228E+01	5	1.99223E+01	6	1.99217E+01	7	1.99210E+01
27	1	1.99256E+01	2	1.99256E+01	3	1.99254E+01	4	1.99250E+01	5	1.99245E+01	6	1.99239E+01	7	1.99231E+01
28	1	1.99018E+01	2	1.99018E+01	3	1.99017E+01	4	1.99016E+01	5	1.99014E+01	6	1.99011E+01	7	1.99008E+01
29	1	1.99038E+01	2	1.99038E+01	3	1.99037E+01	4	1.99035E+01	5	1.99033E+01	6	1.99030E+01	7	1.99027E+01
30	1	1.99062E+01	2	1.99062E+01	3	1.99060E+01	4	1.99059E+01	5	1.99056E+01	6	1.99053E+01	7	1.99049E+01
31	1	1.99087E+01	2	1.99087E+01	3	1.99086E+01	4	1.99084E+01	5	1.99081E+01	6	1.99077E+01	7	1.99073E+01
32	1	1.99109E+01	2	1.99108E+01	3	1.99107E+01	4	1.99105E+01	5	1.99101E+01	6	1.99097E+01	7	1.99093E+01
33	1	1.99135E+01	2	1.99135E+01	3	1.99133E+01	4	1.99131E+01	5	1.99127E+01	6	1.99123E+01	7	1.99117E+01
34	1	1.99166E+01	2	1.99165E+01	3	1.99163E+01	4	1.99161E+01	5	1.99157E+01	6	1.99152E+01	7	1.99146E+01
35	1	1.99201E+01	2	1.99200E+01	3	1.99198E+01	4	1.99195E+01	5	1.99191E+01	6	1.99186E+01	7	1.99179E+01
36	1	1.99219E+01	2	1.99218E+01	3	1.99216E+01	4	1.99213E+01	5	1.99208E+01	6	1.99202E+01	7	1.99195E+01
37	1	1.99040E+01	2	1.99040E+01	3	1.99039E+01	4	1.99037E+01	5	1.99035E+01	6	1.99032E+01	7	1.99029E+01
38	1	1.99061E+01	2	1.99061E+01	3	1.99059E+01	4	1.99058E+01	5	1.99055E+01	6	1.99052E+01	7	1.99048E+01
39	1	1.99086E+01	2	1.99085E+01	3	1.99084E+01	4	1.99082E+01	5	1.99079E+01	6	1.99075E+01	7	1.99070E+01
40	1	1.99112E+01	2	1.99112E+01	3	1.99110E+01	4	1.99108E+01	5	1.99105E+01	6	1.99100E+01	7	1.99095E+01
41	1	1.99134E+01	2	1.99134E+01	3	1.99132E+01	4	1.99130E+01	5	1.99126E+01	6	1.99122E+01	7	1.99116E+01
42	1	1.99159E+01	2	1.99158E+01	3	1.99156E+01	4	1.99154E+01	5	1.99150E+01	6	1.99145E+01	7	1.99139E+01
43	1	1.99194E+01	2	1.99193E+01	3	1.99191E+01	4	1.99188E+01	5	1.99184E+01	6	1.99179E+01	7	1.99172E+01
44	1	1.99229E+01	2	1.99228E+01	3	1.99226E+01	4	1.99223E+01	5	1.99218E+01	6	1.99212E+01	7	1.99205E+01
45	1	1.99248E+01	2	1.99247E+01	3	1.99245E+01	4	1.99241E+01	5	1.99236E+01	6	1.99230E+01	7	1.99222E+01
46	1	1.99050E+01	2	1.99050E+01	3	1.99049E+01	4	1.99047E+01	5	1.99045E+01	6	1.99042E+01	7	1.99038E+01
47	1	1.99071E+01	2	1.99071E+01	3	1.99069E+01	4	1.99067E+01	5	1.99065E+01	6	1.99061E+01	7	1.99057E+01
48	1	1.99097E+01	2	1.99097E+01	3	1.99095E+01	4	1.99093E+01	5	1.99090E+01	6	1.99086E+01	7	1.99081E+01
49	1	1.99124E+01	2	1.99123E+01	3	1.99122E+01	4	1.99119E+01	5	1.99116E+01	6	1.99111E+01	7	1.99106E+01
50	1	1.99145E+01	2	1.99145E+01	3	1.99143E+01	4	1.99141E+01	5	1.99137E+01	6	1.99132E+01	7	1.99127E+01
51	1	1.99171E+01	2	1.99171E+01	3	1.99169E+01	4	1.99166E+01	5	1.99162E+01	6	1.99157E+01	7	1.99151E+01
52	1	1.99203E+01	2	1.99203E+01	3	1.99201E+01	4	1.99198E+01	5	1.99193E+01	6	1.99187E+01	7	1.99180E+01
53	1	1.99240E+01	2	1.99239E+01	3	1.99237E+01	4	1.99233E+01	5	1.99229E+01	6	1.99222E+01	7	1.99215E+01
54	1	1.99262E+01	2	1.99261E+01	3	1.99259E+01	4	1.99255E+01	5	1.99250E+01	6	1.99243E+01	7	1.99235E+01
55	1	1.99046E+01	2	1.99045E+01	3	1.99044E+01	4	1.99043E+01	5	1.99040E+01	6	1.99037E+01	7	1.99034E+01
56	1	1.99067E+01	2	1.99067E+01	3	1.99065E+01	4	1.99063E+01	5	1.99061E+01	6	1.99057E+01	7	1.99053E+01
57	1	1.99093E+01	2	1.99093E+01	3	1.99092E+01	4	1.99089E+01	5	1.99086E+01	6	1.99082E+01	7	1.99077E+01
58	1	1.99119E+01	2	1.99119E+01	3	1.99117E+01	4	1.99115E+01	5	1.99111E+01	6	1.99107E+01	7	1.99101E+01
59	1	1.99141E+01	2	1.99140E+01	3	1.99138E+01	4	1.99136E+01	5	1.99132E+01	6	1.99128E+01	7	1.99122E+01
60	1	1.99166E+01	2	1.99165E+01	3	1.99164E+01	4	1.99161E+01	5	1.99157E+01	6	1.99151E+01	7	1.99145E+01
61	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99176E+01
62	1	1.99234E+01	2	1.99234E+01	3	1.99231E+01	4	1.99228E+01	5	1.99223E+01	6	1.99217E+01	7	1.99209E+01
63	1	1.99256E+01	2	1.99256E+01	3	1.99253E+01	4	1.99250E+01	5	1.99245E+01	6	1.99239E+01	7	1.99231E+01
64	1	1.99019E+01	2	1.99018E+01	3	1.99017E+01	4	1.99016E+01	5	1.99014E+01	6	1.99011E+01	7	1.99008E+01
65	1	1.99039E+01	2	1.99039E+01	3	1.99038E+01	4	1.99036E+01	5	1.99034E+01	6	1.99031E+01	7	1.99027E+01
66	1	1.99063E+01	2	1.99062E+01	3	1.99061E+01	4	1.99059E+01	5	1.99057E+01	6	1.99053E+01	7	1.99049E+01
67	1	1.99087E+01	2	1.99087E+01	3	1.99086E+01	4	1.99083E+01	5	1.99080E+01	6	1.99077E+01	7	1.99072E+01
68	1	1.99109E+01	2	1.99109E+01	3	1.99107E+01	4	1.99105E+01	5	1.99102E+01	6	1.99098E+01	7	1.99093E+01
69	1	1.99135E+01	2	1.99134E+01	3	1.99133E+01	4	1.99130E+01	5	1.99127E+01	6	1.99122E+01	7	1.99117E+01
70	1	1.99166E+01	2	1.99165E+01	3	1.99164E+01	4	1.99161E+01	5	1.99157E+01	6	1.99152E+01	7	1.99146E+01
71	1	1.99200E+01	2	1.99199E+01	3	1.99198E+01	4	1.99194E+01	5	1.99190E+01	6	1.99184E+01	7	1.99178E+01
72	1	1.99220E+01	2	1.99219E+01	3	1.99217E+01	4	1.99214E+01	5	1.99209E+01	6	1.99203E+01	7	1.99196E+01
73	1	1.99040E+01	2	1.99040E+01	3	1.99039E+01	4	1.99037E+01	5	1.99035E+01	6	1.99032E+01	7	1.99028E+01
74	1	1.99061E+01	2	1.99060E+01	3	1.99059E+01	4	1.99057E+01	5	1.99055E+01	6	1.99051E+01	7	1.99047E+01
75	1	1.99086E+01	2	1.99086E+01	3	1.99085E+01	4	1.99082E+01	5	1.99079E+01	6	1.99075E+01	7	1.99071E+01
76	1	1.99113E+01	2	1.99112E+01	3	1.99111E+01	4	1.99108E+01	5	1.99105E+01	6	1.99101E+01	7	1.99096E+01
77	1	1.99133E+01	2	1.99133E+01	3	1.99131E+01	4	1.99129E+01	5	1.99125E+01	6	1.99121E+01	7	1.99116E+01
78	1	1.99158E+01	2	1.99158E+01	3	1.99156E+01	4	1.99153E+01	5	1.99149E+01	6	1.99144E+01	7	1.99139E+01
79	1	1.99193E+01	2	1.99192E+01	3	1.99190E+01	4	1.99187E+01	5	1.99183E+01	6	1.99177E+01	7	1.99171E+01
80	1	1.99228E+01	2	1.99227E+01	3	1.99225E+01	4	1.99222E+01	5	1.99217E+01	6	1.99211E+01	7	1.99204E+01
81	1	1.99247E+01	2	1.99246E+01	3	1.99244E+01	4	1.99240E+01	5	1.99235E+01	6	1.99229E+01	7	1.99222E+01

0 SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	8	1.99005E+01	9	1.99002E+01	10	1.98997E+01	11	1.98992E+01	12	1.98991E+01	13	1.98987E+01	14	1.98974E+01
2	8	1.99021E+01	9	1.99016E+01	10	1.99011E+01	11	1.99007E+01	12	1.99007E+01	13	1.99005E+01	14	1.98993E+01
3	8	1.99045E+01	9	1.99041E+01	10	1.99036E+01	11	1.99031E+01	12	1.99030E+01	13	1.99028E+01	14	1.99017E+01
4	8	1.99069E+01	9	1.99063E+01	10	1.99057E+01	11	1.99050E+01	12	1.99049E+01	13	1.99045E+01	14	1.99032E+01
5	8	1.99088E+01	9	1.99081E+01	10	1.99074E+01	11	1.99065E+01	12	1.99065E+01	13	1.99061E+01	14	1.99047E+01
6	8	1.99111E+01	9	1.99104E+01	10	1.99097E+01	11	1.99091E+01	12	1.99091E+01	13	1.99088E+01	14	1.99075E+01
7	8	1.99143E+01	9	1.99136E+01	10	1.99128E+01	11	1.99120E+01	12	1.99120E+01	13	1.99116E+01	14	1.99104E+01
8	8	1.99175E+01	9	1.99167E+01	10	1.99157E+01	11	1.99147E+01	12	1.99146E+01	13	1.99140E+01	14	1.99126E+01
9	8	1.99192E+01	9	1.99183E+01	10	1.99174E+01	11	1.99163E+01	12	1.99162E+01	13	1.99156E+01	14	1.99143E+01
10	8	1.99031E+01	9	1.99026E+01	10	1.99021E+01	11	1.99014E+01	12	1.99014E+01	13	1.99010E+01	14	1.98995E+01
11	8	1.99050E+01	9	1.99045E+01	10	1.99039E+01	11	1.99034E+01	12	1.99034E+01	13	1.99031E+01	14	1.99019E+01
12	8	1.99073E+01	9	1.99067E+01	10	1.99061E+01	11	1.99055E+01	12	1.99055E+01	13	1.99052E+01	14	1.99042E+01
13	8	1.99097E+01	9	1.99091E+01	10	1.99084E+01	11	1.99077E+01	12	1.99077E+01	13	1.99074E+01	14	1.99062E+01
14	8	1.99116E+01	9	1.99109E+01	10	1.99101E+01	11	1.99091E+01	12	1.99091E+01	13	1.99087E+01	14	1.99073E+01
15	8	1.99140E+01	9	1.99132E+01	10	1.99124E+01	11	1.99114E+01	12	1.99114E+01	13	1.99108E+01	14	1.99096E+01
16	8	1.99168E+01	9	1.99159E+01	10	1.99150E+01	11	1.99139E+01	12	1.99139E+01	13	1.99132E+01	14	1.99115E+01
17	8	1.99202E+01	9	1.99192E+01	10	1.99182E+01	11	1.99170E+01	12	1.99170E+01	13	1.99162E+01	14	1.99146E+01
18	8	1.99222E+01	9	1.99211E+01	10	1.99199E+01	11	1.99186E+01	12	1.99186E+01	13	1.99180E+01	14	1.99165E+01
19	8	1.99030E+01	9	1.99025E+01	10	1.99020E+01	11	1.99013E+01	12	1.99013E+01	13	1.99009E+01	14	1.98995E+01
20	8	1.99049E+01	9	1.99044E+01	10	1.99038E+01	11	1.99033E+01	12	1.99033E+01	13	1.99030E+01	14	1.99019E+01
21	8	1.99072E+01	9	1.99066E+01	10	1.99060E+01	11	1.99054E+01	12	1.99054E+01	13	1.99052E+01	14	1.99041E+01
22	8	1.99096E+01	9	1.99089E+01	10	1.99082E+01	11	1.99073E+01	12	1.99073E+01	13	1.99068E+01	14	1.99054E+01
23	8	1.99116E+01	9	1.99109E+01	10	1.99101E+01	11	1.99091E+01	12	1.99091E+01	13	1.99085E+01	14	1.99070E+01
24	8	1.99139E+01	9	1.99131E+01	10	1.99123E+01	11	1.99112E+01	12	1.99112E+01	13	1.99106E+01	14	1.99090E+01
25	8	1.99169E+01	9	1.99160E+01	10	1.99149E+01	11	1.99138E+01	12	1.99138E+01	13	1.99132E+01	14	1.99118E+01
26	8	1.99201E+01	9	1.99192E+01	10	1.99182E+01	11	1.99170E+01	12	1.99170E+01	13	1.99164E+01	14	1.99151E+01
27	8	1.99222E+01	9	1.99212E+01	10	1.99201E+01	11	1.99188E+01	12	1.99188E+01	13	1.99181E+01	14	1.99166E+01
28	8	1.99005E+01	9	1.99001E+01	10	1.98997E+01	11	1.98993E+01	12	1.98993E+01	13	1.98991E+01	14	1.98981E+01
29	8	1.99023E+01	9	1.99018E+01	10	1.99013E+01	11	1.99007E+01	12	1.99007E+01	13	1.99003E+01	14	1.98989E+01
30	8	1.99044E+01	9	1.99039E+01	10	1.99034E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99014E+01
31	8	1.99068E+01	9	1.99062E+01	10	1.99056E+01	11	1.99050E+01	12	1.99050E+01	13	1.99048E+01	14	1.99037E+01
32	8	1.99087E+01	9	1.99082E+01	10	1.99075E+01	11	1.99067E+01	12	1.99067E+01	13	1.99062E+01	14	1.99046E+01
33	8	1.99111E+01	9	1.99104E+01	10	1.99096E+01	11	1.99088E+01	12	1.99087E+01	13	1.99081E+01	14	1.99066E+01
34	8	1.99139E+01	9	1.99131E+01	10	1.99122E+01	11	1.99112E+01	12	1.99112E+01	13	1.99107E+01	14	1.99094E+01
35	8	1.99171E+01	9	1.99163E+01	10	1.99154E+01	11	1.99143E+01	12	1.99143E+01	13	1.99137E+01	14	1.99127E+01
36	8	1.99187E+01	9	1.99178E+01	10	1.99168E+01	11	1.99157E+01	12	1.99157E+01	13	1.99150E+01	14	1.99133E+01
37	8	1.99025E+01	9	1.99020E+01	10	1.99015E+01	11	1.99009E+01	12	1.99009E+01	13	1.99005E+01	14	1.98993E+01
38	8	1.99044E+01	9	1.99039E+01	10	1.99033E+01	11	1.99028E+01	12	1.99028E+01	13	1.99026E+01	14	1.99016E+01
39	8	1.99065E+01	9	1.99059E+01	10	1.99053E+01	11	1.99048E+01	12	1.99048E+01	13	1.99045E+01	14	1.99032E+01
40	8	1.99089E+01	9	1.99083E+01	10	1.99076E+01	11	1.99069E+01	12	1.99069E+01	13	1.99066E+01	14	1.99054E+01
41	8	1.99111E+01	9	1.99104E+01	10	1.99096E+01	11	1.99087E+01	12	1.99087E+01	13	1.99082E+01	14	1.99068E+01
42	8	1.99132E+01	9	1.99125E+01	10	1.99116E+01	11	1.99107E+01	12	1.99106E+01	13	1.99100E+01	14	1.99084E+01
43	8	1.99165E+01	9	1.99157E+01	10	1.99148E+01	11	1.99137E+01	12	1.99137E+01	13	1.99131E+01	14	1.99118E+01
44	8	1.99197E+01	9	1.99187E+01	10	1.99178E+01	11	1.99169E+01	12	1.99169E+01	13	1.99164E+01	14	1.99152E+01
45	8	1.99213E+01	9	1.99204E+01	10	1.99193E+01	11	1.99184E+01	12	1.99184E+01	13	1.99180E+01	14	1.99168E+01
46	8	1.99034E+01	9	1.99029E+01	10	1.99024E+01	11	1.99019E+01	12	1.99019E+01	13	1.99016E+01	14	1.99004E+01
47	8	1.99052E+01	9	1.99047E+01	10	1.99041E+01	11	1.99036E+01	12	1.99036E+01	13	1.99034E+01	14	1.99022E+01
48	8	1.99076E+01	9	1.99070E+01	10	1.99064E+01	11	1.99055E+01	12	1.99055E+01	13	1.99051E+01	14	1.99036E+01
49	8	1.99100E+01	9	1.99094E+01	10	1.99087E+01	11	1.99080E+01	12	1.99080E+01	13	1.99077E+01	14	1.99065E+01
50	8	1.99121E+01	9	1.99113E+01	10	1.99105E+01	11	1.99096E+01	12	1.99096E+01	13	1.99090E+01	14	1.99073E+01
51	8	1.99143E+01	9	1.99135E+01	10	1.99125E+01	11	1.99115E+01	12	1.99115E+01	13	1.99109E+01	14	1.99096E+01
52	8	1.99172E+01	9	1.99163E+01	10	1.99154E+01	11	1.99145E+01	12	1.99145E+01	13	1.99141E+01	14	1.99130E+01
53	8	1.99206E+01	9	1.99197E+01	10	1.99186E+01	11	1.99177E+01	12	1.99177E+01	13	1.99173E+01	14	1.99161E+01
54	8	1.99226E+01	9	1.99215E+01	10	1.99202E+01	11	1.99189E+01	12	1.99189E+01	13	1.99183E+01	14	1.99168E+01
55	8	1.99030E+01	9	1.99025E+01	10	1.99020E+01	11	1.99015E+01	12	1.99015E+01	13	1.99013E+01	14	1.99000E+01
56	8	1.99049E+01	9	1.99043E+01	10	1.99038E+01	11	1.99030E+01	12	1.99030E+01	13	1.99026E+01	14	1.99012E+01
57	8	1.99072E+01	9	1.99066E+01	10	1.99060E+01	11	1.99054E+01	12	1.99054E+01	13	1.99051E+01	14	1.99037E+01
58	8	1.99095E+01	9	1.99089E+01	10	1.99082E+01	11	1.99075E+01	12	1.99075E+01	13	1.99072E+01	14	1.99059E+01
59	8	1.99116E+01	9	1.99109E+01	10	1.99101E+01	11	1.99092E+01	12	1.99092E+01	13	1.99087E+01	14	1.99076E+01
60	8	1.99138E+01	9	1.99131E+01	10	1.99122E+01	11	1.99115E+01	12	1.99115E+01	13	1.99111E+01	14	1.99098E+01
61	8	1.99169E+01	9	1.99160E+01	10	1.99151E+01	11	1.99142E+01	12	1.99142E+01	13	1.99138E+01	14	1.99127E+01
62	8	1.99201E+01	9	1.99192E+01	10	1.99181E+01	11	1.99169E+01	12	1.99169E+01	13	1.99163E+01	14	1.99149E+01
63	8	1.99222E+01	9	1.99212E+01	10	1.99200E+01	11	1.99188E+01	12	1.99188E+01	13	1.99180E+01	14	1.99165E+01
64	8	1.99005E+01	9	1.99001E+01	10	1.98997E+01	11	1.98991E+01	12	1.98991E+01	13	1.98987E+01	14	1.98975E+01
65	8	1.99023E+01	9	1.99018E+01	10	1.99014E+01	11	1.99009E+01	12	1.99009E+01	13	1.99007E+01	14	1.98995E+01
66	8	1.99045E+01	9	1.99040E+01	10	1.99034E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99014E+01
67	8	1.99067E+01	9	1.99061E+01	10	1.99055E+01	11	1.99050E+01	12	1.99050E+01	13	1.99047E+01	14	1.99033E+01
68	8	1.99087E+01	9	1.99080E+01	10	1.99073E+01	11	1.99067E+01	12	1.99067E+01	13	1.99065E+01	14	1.99052E+01
69	8	1.99110E+01	9	1.99103E+01	10	1.99095E+01	11	1.99085E+01	12	1.99085E+01	13	1.99081E+01	14	1.99068E+01
70	8	1.99139E+01	9	1.99132E+01	10	1.99124E+01	11	1.99116E+01	12	1.99116E+01	13	1.99113E+01	14	1.99102E+01
71	8	1.99170E+01	9	1.99161E+01	10	1.99151E+01	11	1.99140E+01	12	1.99140E+01	13	1.99134E+01	14	1.99120E+01
72	8	1.99189E+01	9	1.99180E+01	10	1.99170E+01	11	1.99161E+01	12	1.99161E+01	13	1.99157E+01	14	1.99146E+01
73	8	1.99024E+01	9	1.99020E+01	10	1.99015E+01	11	1.99009E+01	12	1.99009E+01	13	1.99005E+01	14	1.98992E+01
74	8	1.99043E+01	9	1.99038E+01	10	1.99033E+01	11	1.99028E+01	12	1.99028E+01	13	1.99026E+01	14	1.99016E+01
75	8	1.99066E+01	9	1.99060E+01	10	1.99054E+01	11	1.99048E+01	12	1.99048E+01	13	1.99046E+01	14	1.99036E+01
76	8	1.99091E+01	9	1.99084E+01	10	1.99077E+01	11	1.99069E+01	12	1.99069E+01	13	1.99063E+01	14	1.99049E+01
77	8	1.99110E+01	9	1.99103E+01	10	1.99096E+01	11	1.99087E+01	12	1.99087E+01	13	1.99082E+01	14	1.99067E+01
78	8	1.99132E+01	9	1.99125E+01	10	1.99117E+01	11	1.99107E+01	12	1.99107E+01	13	1.99101E+01	14	1.99087E+01
79	8	1.99163E+01	9	1.99154E+01	10	1.99145E+01	11	1.99137E+01	12	1.99137E+01	13	1.99133E+01	14	1.99120E+01
80	8	1.99196E+01	9	1.99187E+01	10	1.99176E+01	11	1.99165E+01	12	1.99165E+01	13	1.99157E+01	14	1.99140E+01
81	8	1.99213E+01	9	1.99203E+01	10	1.99193E+01	11	1.99181E+01	12	1.99181E+01	13	1.99173E+01	14	1.99158E+01

EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE

ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-12-02

0 CPU TIME = 96.75

OJUNCTION NUMBER	CONNECTING VOLUMES	JCT. FLOW (TON/HR)	JCT. ENTH (KC/KG)	JCT. SPVL (M**3/KG)	PRESSURE DIFFERENTIALS STAG ATA	ELEV ATA	FRIC ATA	ACCL ATA
1	82 TO 10	2.34414E+01	1.99966E+01	1.00147E-03	6.77967E-01	-9.89208E-02	-5.79001E-01	4.51879E-05
2	1 TO 20	2.34414E+01	1.99973E+01	1.00148E-03	7.30079E-02	-3.69569E-02	-3.60390E-02	1.20238E-05
3	2 TO 30	2.34414E+01	1.99967E+01	1.00149E-03	1.21500E-01	-4.92756E-02	-7.22476E-02	-2.27486E-05
4	3 TO 40	2.34414E+01	1.99962E+01	1.00149E-03	1.11242E-01	-4.92753E-02	-6.19885E-02	-2.20928E-05
5	4 TO 50	2.34414E+01	1.99956E+01	1.00150E-03	1.04197E-01	-3.69564E-02	-6.72219E-02	1.91292E-05
6	5 TO 60	2.34414E+01	1.99953E+01	1.00150E-03	9.39116E-02	-3.69560E-02	-5.69535E-02	2.05891E-06
7	6 TO 70	2.34414E+01	1.99949E+01	1.00151E-03	1.32186E-01	-4.92746E-02	-8.29121E-02	-8.42206E-07
8	7 TO 80	2.34414E+01	1.99946E+01	1.00151E-03	1.32252E-01	-4.92743E-02	-8.30166E-02	-3.86523E-05
9	8 TO 90	2.34414E+01	1.99943E+01	1.00152E-03	8.37431E-02	-3.69556E-02	-4.68033E-02	-1.58202E-05
10	9 TO 910	2.34414E+01	1.99942E+01	1.00152E-03	6.68138E-01	-5.17092E-01	-1.51136E-01	-8.93323E-05
11	83 TO 100	1.83208E+02	1.99975E+01	1.00147E-03	6.99638E-01	-9.89207E-02	-6.00670E-01	4.73283E-05
12	10 TO 110	1.83208E+02	1.99982E+01	1.00148E-03	8.14248E-02	-3.69568E-02	-4.44641E-02	3.97535E-06
13	11 TO 120	1.83208E+02	1.99978E+01	1.00149E-03	1.08597E-01	-4.92755E-02	-5.93413E-02	-1.93523E-05
14	12 TO 130	1.83208E+02	1.99973E+01	1.00149E-03	1.08701E-01	-4.92752E-02	-5.94166E-02	9.39958E-06
15	13 TO 140	1.83208E+02	1.99969E+01	1.00150E-03	1.01273E-01	-3.69563E-02	-6.43503E-02	-3.39120E-05
16	14 TO 150	1.83208E+02	1.99967E+01	1.00150E-03	8.16150E-02	-3.69560E-02	-4.46745E-02	-1.54499E-05
17	15 TO 160	1.83208E+02	1.99964E+01	1.00151E-03	1.18809E-01	-4.92745E-02	-6.95019E-02	3.27153E-05
18	16 TO 170	1.83208E+02	1.99962E+01	1.00151E-03	1.28721E-01	-4.92742E-02	-7.94671E-02	-2.01153E-05
19	17 TO 180	1.83208E+02	1.99960E+01	1.00152E-03	9.16702E-02	-3.69555E-02	-5.47200E-02	-5.37051E-06
20	18 TO 920	1.83208E+02	1.99960E+01	1.00152E-03	6.57690E-01	-5.17091E-01	-1.40703E-01	-1.04027E-04
21	84 TO 190	5.48981E+02	1.99975E+01	1.00147E-03	6.97686E-01	-9.89207E-02	-5.98722E-01	4.34643E-05
22	19 TO 200	5.48981E+02	1.99982E+01	1.00148E-03	8.13242E-02	-3.69568E-02	-4.43660E-02	1.48566E-06
23	20 TO 210	5.48981E+02	1.99978E+01	1.00149E-03	1.08470E-01	-4.92755E-02	-5.92097E-02	-1.49181E-05
24	21 TO 220	5.48981E+02	1.99973E+01	1.00149E-03	1.08552E-01	-4.92752E-02	-5.92846E-02	-7.66013E-06
25	22 TO 230	5.48981E+02	1.99968E+01	1.00150E-03	1.01175E-01	-3.69563E-02	-6.42053E-02	1.35731E-05
26	23 TO 240	5.48981E+02	1.99966E+01	1.00150E-03	8.15106E-02	-3.69560E-02	-4.45754E-02	-2.08229E-05
27	24 TO 250	5.48980E+02	1.99963E+01	1.00151E-03	1.18599E-01	-4.92745E-02	-6.93458E-02	-2.13149E-05
28	25 TO 260	5.48980E+02	1.99961E+01	1.00151E-03	1.28543E-01	-4.92742E-02	-7.92874E-02	-1.90760E-05
29	26 TO 270	5.48980E+02	1.99961E+01	1.00152E-03	9.15848E-02	-3.69555E-02	-5.45969E-02	3.23329E-05
30	27 TO 930	5.48980E+02	1.99961E+01	1.00152E-03	6.60200E-01	-5.17091E-01	-1.43219E-01	-1.09446E-04
31	85 TO 280	3.56942E+03	1.99967E+01	1.00147E-03	6.75420E-01	-9.89209E-02	-5.76445E-01	5.34025E-05
32	28 TO 290	3.56942E+03	1.99974E+01	1.00148E-03	8.23542E-02	-3.69569E-02	-4.54233E-02	-2.60322E-05
33	29 TO 300	3.56942E+03	1.99967E+01	1.00149E-03	1.09923E-01	-4.92756E-02	-6.06210E-02	2.63163E-05
34	30 TO 310	3.56942E+03	1.99962E+01	1.00149E-03	1.09948E-01	-4.92754E-02	-6.06979E-02	-2.47772E-05
35	31 TO 320	3.56941E+03	1.99957E+01	1.00150E-03	1.02736E-01	-3.69564E-02	-6.57931E-02	-1.39943E-05
36	32 TO 330	3.56941E+03	1.99954E+01	1.00150E-03	9.27213E-02	-3.69561E-02	-5.57530E-02	1.22398E-05
37	33 TO 340	3.56941E+03	1.99950E+01	1.00151E-03	1.20282E-01	-4.92746E-02	-7.10354E-02	-2.81502E-05
38	34 TO 350	3.56941E+03	1.99947E+01	1.00151E-03	1.30494E-01	-4.92743E-02	-8.12431E-02	-2.38129E-05
39	35 TO 360	3.56941E+03	1.99945E+01	1.00152E-03	8.28276E-02	-3.69556E-02	-4.58207E-02	5.12946E-05
40	36 TO 940	3.56941E+03	1.99943E+01	1.00152E-03	6.86374E-01	-5.17091E-01	-1.69408E-01	-1.25237E-04
41	86 TO 370	2.80339E+03	1.99973E+01	1.00147E-03	6.93561E-01	-9.89207E-02	-5.94607E-01	3.33563E-05
42	37 TO 380	2.80339E+03	1.99980E+01	1.00148E-03	8.16952E-02	-3.69568E-02	-4.47341E-02	4.21957E-06
43	38 TO 390	2.80339E+03	1.99975E+01	1.00149E-03	1.08997E-01	-4.92755E-02	-5.97013E-02	2.03055E-05
44	39 TO 400	2.80339E+03	1.99970E+01	1.00149E-03	1.09035E-01	-4.92753E-02	-5.97771E-02	-1.76299E-05
45	40 TO 410	2.80339E+03	1.99965E+01	1.00150E-03	1.01671E-01	-3.69563E-02	-6.47554E-02	-4.10374E-05
46	41 TO 420	2.80339E+03	1.99963E+01	1.00150E-03	8.19197E-02	-3.69560E-02	-4.49461E-02	1.76387E-05
47	42 TO 430	2.80339E+03	1.99960E+01	1.00151E-03	1.29117E-01	-4.92745E-02	-7.98724E-02	-2.97746E-05
48	43 TO 440	2.80339E+03	1.99958E+01	1.00151E-03	1.29287E-01	-4.92742E-02	-7.99711E-02	4.19742E-05
49	44 TO 450	2.80339E+03	1.99958E+01	1.00152E-03	8.20649E-02	-3.69555E-02	-4.51257E-02	-1.63267E-05
50	45 TO 950	2.80339E+03	1.99957E+01	1.00152E-03	6.62154E-01	-5.17091E-01	-1.45179E-01	-1.15995E-04
51	87 TO 460	1.59791E+02	1.99977E+01	1.00147E-03	7.01198E-01	-9.89207E-02	-6.02197E-01	7.95289E-05
52	46 TO 470	1.59791E+02	1.99984E+01	1.00148E-03	8.11173E-02	-3.69568E-02	-4.42029E-02	-4.24038E-05
53	47 TO 480	1.59791E+02	1.99979E+01	1.00149E-03	1.08249E-01	-4.92755E-02	-5.89921E-02	-1.81894E-05
54	48 TO 490	1.59791E+02	1.99974E+01	1.00149E-03	1.08369E-01	-4.92752E-02	-5.90667E-02	2.72747E-05
55	49 TO 500	1.59791E+02	1.99971E+01	1.00150E-03	1.00892E-01	-3.69563E-02	-6.39609E-02	-2.54452E-05
56	50 TO 510	1.59791E+02	1.99969E+01	1.00150E-03	8.13499E-02	-3.69560E-02	-4.44114E-02	-1.74767E-05
57	51 TO 520	1.59791E+02	1.99966E+01	1.00151E-03	1.18380E-01	-4.92745E-02	-6.90866E-02	1.85082E-05
58	52 TO 530	1.59791E+02	1.99965E+01	1.00151E-03	1.28249E-01	-4.92742E-02	-7.89874E-02	-1.23746E-05
59	53 TO 540	1.59791E+02	1.99964E+01	1.00152E-03	9.13277E-02	-3.69555E-02	-5.43918E-02	-1.96135E-05
60	54 TO 960	1.59791E+02	1.99963E+01	1.00152E-03	6.57689E-01	-5.17091E-01	-1.40691E-01	-9.29948E-05
61	88 TO 550	5.48980E+02	1.99975E+01	1.00147E-03	6.97722E-01	-9.89207E-02	-5.98719E-01	8.17343E-05
62	55 TO 560	5.48980E+02	1.99982E+01	1.00148E-03	8.12579E-02	-3.69568E-02	-4.43658E-02	-6.47122E-05
63	56 TO 570	5.48980E+02	1.99977E+01	1.00149E-03	1.08533E-01	-4.92755E-02	-5.92095E-02	4.74973E-05
64	57 TO 580	5.48980E+02	1.99973E+01	1.00149E-03	1.08540E-01	-4.92752E-02	-5.92845E-02	-1.93048E-05
65	58 TO 590	5.48980E+02	1.99969E+01	1.00150E-03	1.01104E-01	-3.69563E-02	-6.42051E-02	-5.73086E-05
66	59 TO 600	5.48980E+02	1.99966E+01	1.00150E-03	8.15899E-02	-3.69560E-02	-4.45753E-02	5.86397E-05
67	60 TO 610	5.48979E+02	1.99964E+01	1.00151E-03	1.18591E-01	-4.92745E-02	-6.93456E-02	-2.95117E-05
68	61 TO 620	5.48979E+02	1.99962E+01	1.00151E-03	1.28524E-01	-4.92742E-02	-7.92872E-02	-3.69497E-05
69	62 TO 630	5.48979E+02	1.99961E+01	1.00152E-03	9.15784E-02	-3.69555E-02	-5.45968E-02	2.60565E-05
70	63 TO 970	5.48979E+02	1.99961E+01	1.00152E-03	6.60200E-01	-5.17091E-01	-1.43218E-01	-1.08584E-04
71	89 TO 640	3.56946E+03	1.99967E+01	1.00147E-03	6.75415E-01	-9.89208E-02	-5.76458E-01	3.67003E-05
72	64 TO 650	3.56946E+03	1.99973E+01	1.00148E-03	8.24017E-02	-3.69569E-02	-4.54243E-02	2.05441E-05
73	65 TO 660	3.56946E+03	1.99968E+01	1.00149E-03	1.09889E-01	-4.92756E-02	-6.06223E-02	-9.20764E-06
74	66 TO 670	3.56946E+03	1.99962E+01	1.00149E-03	1.09977E-01	-4.92754E-02	-6.06992E-02	2.42676E-06
75	67 TO 680	3.56946E+03	1.99957E+01	1.00150E-03	1.02743E-01	-3.69564E-02	-6.57946E-02	-7.57985E-06
76	68 TO 690	3.56946E+03	1.99955E+01	1.00150E-03	9.26701E-02	-3.69561E-02	-5.57543E-02	-4.02202E-05
77	69 TO 700	3.56945E+03	1.99949E+01	1.00151E-03	1.20322E-01	-4.92746E-02	-7.10369E-02	1.04025E-05
78	70 TO 710	3.56945E+03	1.99947E+01	1.00151E-03	1.30502E-01	-4.92743E-02	-8.12449E-02	-1.69249E-05
79	71 TO 720	3.56945E+03	1.99944E+01	1.00152E-03	8.27856E-02	-3.69556E-02	-4.58217E-02	8.29189E-06
80	72 TO 980	3.56945E+03	1.99944E+01	1.00152E-03	6.76263E-01	-5.17091E-01	-1.59275E-01	-1.03281E-04
81	90 TO 730	2.80333E+03	1.99973E+01	1.00147E-03	6.83638E-01	-9.89207E-02	-5.84684E-01	3.37686E-05
82	73 TO 740	2.80333E+03	1.99980E+01	1.00148E-03	8.16914E-02	-3.69568E-02	-4.47323E-02	2.34511E-06
83	74 TO 750	2.80333E+03	1.99975E+01	1.00149E-03	1.08974E-01	-4.92755E-02	-5.96988E-02	-5.51694E-07
84	75 TO 760	2.80333E+03	1.99970E+01	1.00149E-03	1.09032E-01	-4.92753E-02	-5.97746E-02	-1.82888E-05
85	76 TO 770	2.80333E+03	1.99965E+01	1.00150E-03	1.01707E-01	-3.69563E-02	-6.47526E-02	-2.12622E-06
86	77 TO 780	2.80333E+03	1.99963E+01	1.00150E-03	8.18953E-02	-3.69560E-02	-4.49442E-02	-4.85250E-06
87	78 TO 790	2.80333E+03	1.99960E+01	1.00151E-03	1.29178E-01	-4.92745E-02	-7.98690E-02	3.41160E-05
88	79 TO 800	2.80333E+03	1.99958E+01	1.00151E-03	1.29198E-01	-4.92742E-02	-7.99676E-02	-4.37102E-05
89	80 TO 810	2.80332E+03	1.99956E+01	1.00152E-03	8.20681E-02	-3.69555E-02	-4.51238E-02	-1.12400E-05

90	81 TO 99□	2.80332E+03	1.99956E+01	1.00152E-03	6.62171E-01	-5.17091E-01	-1.45173E-01	-9.24786E-05
91	102 TO 82□	2.34414E+01	1.99987E+01	1.00142E-03	7.21471E-01	-8.66018E-02	-6.34883E-01	-1.35759E-05
92	91 TO 103□	2.34412E+01	2.00033E+01	1.00156E-03	7.34136E-01	-5.94658E-01	-1.39323E-01	1.55763E-04
93	100 TO 83□	1.83208E+02	1.99987E+01	1.00142E-03	7.51393E-01	-8.66017E-02	-6.64811E-01	-1.95650E-05
94	92 TO 101□	1.83207E+02	2.00101E+01	1.00156E-03	7.24178E-01	-5.94657E-01	-1.29366E-01	1.55309E-04
95	100 TO 84□	5.48981E+02	1.99987E+01	1.00142E-03	7.48961E-01	-8.66017E-02	-6.62379E-01	-1.94604E-05
96	93 TO 101□	5.48976E+02	2.00116E+01	1.00156E-03	7.26717E-01	-5.94657E-01	-1.31907E-01	1.52827E-04
97	100 TO 85□	3.56942E+03	1.99987E+01	1.00142E-03	6.99598E-01	-8.66018E-02	-6.13010E-01	-1.41665E-05
98	94 TO 101□	3.56938E+03	2.00145E+01	1.00156E-03	7.42573E-01	-5.94657E-01	-1.47772E-01	1.44029E-04
99	100 TO 86□	2.80339E+03	1.99987E+01	1.00142E-03	7.34226E-01	-8.66017E-02	-6.47642E-01	-1.80685E-05
100	95 TO 101□	2.80337E+03	2.00112E+01	1.00156E-03	7.28614E-01	-5.94657E-01	-1.33805E-01	1.52342E-04
101	102 TO 87□	1.59791E+02	1.99987E+01	1.00142E-03	7.52665E-01	-8.66017E-02	-6.66084E-01	-2.04489E-05
102	96 TO 103□	1.59790E+02	2.00110E+01	1.00156E-03	7.24231E-01	-5.94657E-01	-1.29419E-01	1.54908E-04
103	102 TO 88□	5.48980E+02	1.99987E+01	1.00142E-03	7.48959E-01	-8.66017E-02	-6.62377E-01	-1.95149E-05
104	97 TO 103□	5.48975E+02	2.00116E+01	1.00156E-03	7.26717E-01	-5.94657E-01	-1.31907E-01	1.53244E-04
105	102 TO 89□	3.56946E+03	1.99987E+01	1.00142E-03	6.99611E-01	-8.66018E-02	-6.13023E-01	-1.43778E-05
106	98 TO 103□	3.56942E+03	2.00145E+01	1.00156E-03	7.52663E-01	-5.94657E-01	-1.57861E-01	1.44659E-04
107	102 TO 90□	2.80333E+03	1.99987E+01	1.00142E-03	7.44176E-01	-8.66017E-02	-6.57592E-01	-1.78044E-05
108	99 TO 103□	2.80330E+03	2.00112E+01	1.00156E-03	7.28608E-01	-5.94657E-01	-1.33799E-01	1.52181E-04
109	0 TO 100□	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
110	0 TO 102□	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE.

ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-12-02

0 CPU TIME = 96.75

OJUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
1	1.36226E+00	1.36226E+00	2.34414E+01	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
2	1.36230E+00	1.36230E+00	2.34414E+01	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
3	1.36230E+00	1.36230E+00	2.34414E+01	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
4	1.36231E+00	1.36231E+00	2.34414E+01	0.00000E+00	1.99970E+01	0.00000E+00	1.99970E+01
5	1.36232E+00	1.36232E+00	2.34414E+01	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
6	1.36232E+00	1.36232E+00	2.34414E+01	0.00000E+00	1.99958E+01	0.00000E+00	1.99958E+01
7	1.36233E+00	1.36233E+00	2.34414E+01	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
8	1.36234E+00	1.36234E+00	2.34414E+01	0.00000E+00	1.99954E+01	0.00000E+00	1.99954E+01
9	1.36235E+00	1.36235E+00	2.34414E+01	0.00000E+00	1.99951E+01	0.00000E+00	1.99951E+01
10	1.36235E+00	1.36235E+00	2.34414E+01	0.00000E+00	1.99947E+01	0.00000E+00	1.99947E+01
11	1.33086E+00	1.33086E+00	1.83208E+02	0.00000E+00	2.00008E+01	0.00000E+00	2.00008E+01
12	1.33090E+00	1.33090E+00	1.83208E+02	0.00000E+00	1.99987E+01	0.00000E+00	1.99987E+01
13	1.33090E+00	1.33090E+00	1.83208E+02	0.00000E+00	1.99986E+01	0.00000E+00	1.99986E+01
14	1.33091E+00	1.33091E+00	1.83208E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
15	1.33092E+00	1.33092E+00	1.83208E+02	0.00000E+00	1.99977E+01	0.00000E+00	1.99977E+01
16	1.33092E+00	1.33092E+00	1.83208E+02	0.00000E+00	1.99972E+01	0.00000E+00	1.99972E+01
17	1.33093E+00	1.33093E+00	1.83208E+02	0.00000E+00	1.99972E+01	0.00000E+00	1.99972E+01
18	1.33093E+00	1.33093E+00	1.83208E+02	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
19	1.33094E+00	1.33094E+00	1.83208E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
20	1.33095E+00	1.33095E+00	1.83208E+02	0.00000E+00	1.99965E+01	0.00000E+00	1.99965E+01
21	1.32930E+00	1.32930E+00	5.48981E+02	0.00000E+00	2.00008E+01	0.00000E+00	2.00008E+01
22	1.32934E+00	1.32934E+00	5.48981E+02	0.00000E+00	1.99987E+01	0.00000E+00	1.99987E+01
23	1.32934E+00	1.32934E+00	5.48981E+02	0.00000E+00	1.99986E+01	0.00000E+00	1.99986E+01
24	1.32935E+00	1.32935E+00	5.48981E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
25	1.32936E+00	1.32936E+00	5.48981E+02	0.00000E+00	1.99976E+01	0.00000E+00	1.99976E+01
26	1.32936E+00	1.32936E+00	5.48981E+02	0.00000E+00	1.99971E+01	0.00000E+00	1.99971E+01
27	1.32937E+00	1.32937E+00	5.48980E+02	0.00000E+00	1.99971E+01	0.00000E+00	1.99971E+01
28	1.32938E+00	1.32938E+00	5.48980E+02	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
29	1.32938E+00	1.32938E+00	5.48980E+02	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
30	1.32939E+00	1.32939E+00	5.48980E+02	0.00000E+00	1.99966E+01	0.00000E+00	1.99966E+01
31	1.34695E+00	1.34695E+00	3.56942E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
32	1.34699E+00	1.34699E+00	3.56942E+03	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
33	1.34700E+00	1.34700E+00	3.56942E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
34	1.34700E+00	1.34700E+00	3.56942E+03	0.00000E+00	1.99970E+01	0.00000E+00	1.99970E+01
35	1.34701E+00	1.34701E+00	3.56941E+03	0.00000E+00	1.99965E+01	0.00000E+00	1.99965E+01
36	1.34702E+00	1.34702E+00	3.56941E+03	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
37	1.34702E+00	1.34702E+00	3.56941E+03	0.00000E+00	1.99958E+01	0.00000E+00	1.99958E+01
38	1.34703E+00	1.34703E+00	3.56941E+03	0.00000E+00	1.99955E+01	0.00000E+00	1.99955E+01
39	1.34704E+00	1.34704E+00	3.56941E+03	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
40	1.34704E+00	1.34704E+00	3.56941E+03	0.00000E+00	1.99949E+01	0.00000E+00	1.99949E+01
41	1.33536E+00	1.33536E+00	2.80339E+03	0.00000E+00	2.00006E+01	0.00000E+00	2.00006E+01
42	1.33541E+00	1.33541E+00	2.80339E+03	0.00000E+00	1.99985E+01	0.00000E+00	1.99985E+01
43	1.33541E+00	1.33541E+00	2.80339E+03	0.00000E+00	1.99983E+01	0.00000E+00	1.99983E+01
44	1.33542E+00	1.33542E+00	2.80339E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
45	1.33542E+00	1.33542E+00	2.80339E+03	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
46	1.33543E+00	1.33543E+00	2.80339E+03	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
47	1.33544E+00	1.33544E+00	2.80339E+03	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
48	1.33544E+00	1.33544E+00	2.80339E+03	0.00000E+00	1.99966E+01	0.00000E+00	1.99966E+01
49	1.33545E+00	1.33545E+00	2.80339E+03	0.00000E+00	1.99966E+01	0.00000E+00	1.99966E+01
50	1.33546E+00	1.33546E+00	2.80339E+03	0.00000E+00	1.99962E+01	0.00000E+00	1.99962E+01
51	1.32657E+00	1.32657E+00	1.59791E+02	0.00000E+00	2.00010E+01	0.00000E+00	2.00010E+01
52	1.32661E+00	1.32661E+00	1.59791E+02	0.00000E+00	1.99989E+01	0.00000E+00	1.99989E+01
53	1.32662E+00	1.32662E+00	1.59791E+02	0.00000E+00	1.99987E+01	0.00000E+00	1.99987E+01
54	1.32662E+00	1.32662E+00	1.59791E+02	0.00000E+00	1.99982E+01	0.00000E+00	1.99982E+01
55	1.32663E+00	1.32663E+00	1.59791E+02	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
56	1.32664E+00	1.32664E+00	1.59791E+02	0.00000E+00	1.99974E+01	0.00000E+00	1.99974E+01
57	1.32664E+00	1.32664E+00	1.59791E+02	0.00000E+00	1.99974E+01	0.00000E+00	1.99974E+01
58	1.32665E+00	1.32665E+00	1.59791E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
59	1.32666E+00	1.32666E+00	1.59791E+02	0.00000E+00	1.99972E+01	0.00000E+00	1.99972E+01
60	1.32666E+00	1.32666E+00	1.59791E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
61	1.32929E+00	1.32929E+00	5.48980E+02	0.00000E+00	2.00008E+01	0.00000E+00	2.00008E+01
62	1.32934E+00	1.32934E+00	5.48980E+02	0.00000E+00	1.99987E+01	0.00000E+00	1.99987E+01
63	1.32934E+00	1.32934E+00	5.48980E+02	0.00000E+00	1.99985E+01	0.00000E+00	1.99985E+01
64	1.32935E+00	1.32935E+00	5.48980E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
65	1.32935E+00	1.32935E+00	5.48980E+02	0.00000E+00	1.99977E+01	0.00000E+00	1.99977E+01
66	1.32936E+00	1.32936E+00	5.48980E+02	0.00000E+00	1.99971E+01	0.00000E+00	1.99971E+01
67	1.32937E+00	1.32937E+00	5.48979E+02	0.00000E+00	1.99972E+01	0.00000E+00	1.99972E+01
68	1.32937E+00	1.32937E+00	5.48979E+02	0.00000E+00	1.99970E+01	0.00000E+00	1.99970E+01
69	1.32938E+00	1.32938E+00	5.48979E+02	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01

70	1.32939E+00	1.32939E+00	5.48979E+02	0.00000E+00	1.99966E+01	0.00000E+00	1.99966E+01
71	1.34697E+00	1.34697E+00	3.56946E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
72	1.34701E+00	1.34701E+00	3.56946E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
73	1.34701E+00	1.34701E+00	3.56946E+03	0.00000E+00	1.99976E+01	0.00000E+00	1.99976E+01
74	1.34702E+00	1.34702E+00	3.56946E+03	0.00000E+00	1.99970E+01	0.00000E+00	1.99970E+01
75	1.34703E+00	1.34703E+00	3.56946E+03	0.00000E+00	1.99965E+01	0.00000E+00	1.99965E+01
76	1.34703E+00	1.34703E+00	3.56946E+03	0.00000E+00	1.99960E+01	0.00000E+00	1.99960E+01
77	1.34704E+00	1.34704E+00	3.56945E+03	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
78	1.34705E+00	1.34705E+00	3.56945E+03	0.00000E+00	1.99955E+01	0.00000E+00	1.99955E+01
79	1.34705E+00	1.34705E+00	3.56945E+03	0.00000E+00	1.99952E+01	0.00000E+00	1.99952E+01
80	1.34706E+00	1.34706E+00	3.56945E+03	0.00000E+00	1.99949E+01	0.00000E+00	1.99949E+01
81	1.33533E+00	1.33533E+00	2.80333E+03	0.00000E+00	2.00006E+01	0.00000E+00	2.00006E+01
82	1.33538E+00	1.33538E+00	2.80333E+03	0.00000E+00	1.99985E+01	0.00000E+00	1.99985E+01
83	1.33538E+00	1.33538E+00	2.80333E+03	0.00000E+00	1.99983E+01	0.00000E+00	1.99983E+01
84	1.33539E+00	1.33539E+00	2.80333E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
85	1.33539E+00	1.33539E+00	2.80333E+03	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
86	1.33540E+00	1.33540E+00	2.80333E+03	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
87	1.33541E+00	1.33541E+00	2.80333E+03	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
88	1.33541E+00	1.33541E+00	2.80333E+03	0.00000E+00	1.99966E+01	0.00000E+00	1.99966E+01
89	1.33542E+00	1.33542E+00	2.80332E+03	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
90	1.33543E+00	1.33543E+00	2.80332E+03	0.00000E+00	1.99961E+01	0.00000E+00	1.99961E+01
91	3.38999E+00	3.38999E+00	2.34414E+01	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
92	1.52116E+00	1.52116E+00	2.34412E+01	0.00000E+00	2.00154E+01	0.00000E+00	2.00154E+01
93	3.31189E+00	3.31189E+00	1.83208E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
94	1.48608E+00	1.48608E+00	1.83207E+02	0.00000E+00	2.00222E+01	0.00000E+00	2.00222E+01
95	3.30794E+00	3.30794E+00	5.48981E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
96	1.48437E+00	1.48437E+00	5.48976E+02	0.00000E+00	2.00237E+01	0.00000E+00	2.00237E+01
97	3.35188E+00	3.35188E+00	3.56942E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
98	1.50406E+00	1.50406E+00	3.56938E+03	0.00000E+00	2.00266E+01	0.00000E+00	2.00266E+01
99	3.32302E+00	3.32302E+00	2.80339E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
100	1.49114E+00	1.49114E+00	2.80337E+03	0.00000E+00	2.00233E+01	0.00000E+00	2.00233E+01
101	3.30114E+00	3.30114E+00	1.59791E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
102	1.48133E+00	1.48133E+00	1.59790E+02	0.00000E+00	2.00231E+01	0.00000E+00	2.00231E+01
103	3.30793E+00	3.30793E+00	5.48980E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
104	1.48436E+00	1.48436E+00	5.48975E+02	0.00000E+00	2.00237E+01	0.00000E+00	2.00237E+01
105	3.35194E+00	3.35194E+00	3.56946E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
106	1.50408E+00	1.50408E+00	3.56942E+03	0.00000E+00	2.00266E+01	0.00000E+00	2.00266E+01
107	3.32299E+00	3.32299E+00	2.80333E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
108	1.49110E+00	1.49110E+00	2.80330E+03	0.00000E+00	2.00233E+01	0.00000E+00	2.00233E+01
109	0.00000E+00	0.00000E+00	7.10500E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
110	0.00000E+00	0.00000E+00	7.10500E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01

IPRTCT = 1

CHANNEL RESULTS

CHANNEL NUMBER	CONNECTING VOLUMES	COOLANT TEMPERATURE (C)	COOLANT VOID FRAC (-)	FUEL TEMPERATURE (C)
1	1 TO 9	1.99054E+01	0.00000E+00	1.99094E+01
2	10 TO 18	1.99075E+01	0.00000E+00	1.99121E+01
3	19 TO 27	1.99074E+01	0.00000E+00	1.99121E+01
4	28 TO 36	1.99052E+01	0.00000E+00	1.99092E+01
5	37 TO 45	1.99070E+01	0.00000E+00	1.99115E+01
6	46 TO 54	1.99078E+01	0.00000E+00	1.99125E+01
7	55 TO 63	1.99074E+01	0.00000E+00	1.99120E+01
8	64 TO 72	1.99051E+01	0.00000E+00	1.99092E+01
9	73 TO 81	1.99070E+01	0.00000E+00	1.99115E+01

```
IM,JM,KM,KMIN,KMAX
23 13 4 1 15
IFT,E1,V1,X1
1 20.009995 0.00000000E+00 0.00000000E+00
FSP,PLP1(L),FP,FSG,FSUB,FD,FHL,FI,FAX,QCPR(L),CQQ,X1
AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
 0.1001E+01 0.6268E-05 0.7189E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00 0.8195E-06 0.0000E+00
 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1000E+01 0.3044E+03 0.2593E+01 0.8800E+00-0.2529E+00 0.1186E+03
IM,JM,KM,KMIN,KMAX
23 13 14 1 15
IFT,E1,V1,X1
2 15.949999 0.00000000E+00 0.00000000E+00
FSP,PLP1(L),FP,FSG,FSUB,FD,FHL,FI,FAX,QCPR(L),CQQ,X1
AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
 0.8388E+00 0.3267E-05 0.7252E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00-0.5008E-07 0.0000E+00
 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1000E+01 0.3970E+02 0.3124E+01 0.8800E+00-0.2529E+00 0.1186E+03
1  ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR                                                    91-12-02

                    ************** SUMMARY  TABLE **************

                        MINIMUM CPR ,(I,J,K),L =    0.000, 28, 17, 15,  3

                        MAXIMUM LHGR,(I,J,K),L =    0.000, 25, 15,  3,  3

                        CPR (25,15, 3)         =   99.990

                        LHGR(28,17,15)         =    0.000

 IPRTCT =   1
OPLOT RECORD NUMBER =    27
ORESTART NUMBER     =     9
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EUREKA-ATR ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR

**** CHANNEL WISE POWER ****

CHANNEL NO.	1	2	3	4	5	6	7	8	9
POWER	1.29692	0.97461	1.14656	0.88706	1.11039	1.00848	1.12429	0.88087	1.12575

**** CLUSTER WISE POWER ****

J I	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.708	0.717	0.835
2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.482	0.692	0.587	0.823	0.694	0.979	0.746
3	0.000	0.000	0.000	0.000	0.000	0.000	0.701	0.718	0.921	0.766	1.020	0.909	1.212	0.978
4	0.000	0.000	0.000	0.000	0.000	0.716	0.686	0.951	0.701	0.857	0.663	1.105	0.866	1.230
5	0.000	0.000	0.000	0.000	0.666	0.956	0.885	1.163	0.918	1.005	0.838	1.217	1.016	1.353
6	0.000	0.000	0.000	0.556	0.883	0.762	1.094	0.835	1.157	0.771	1.053	0.836	1.198	0.886
7	0.000	0.000	0.695	0.757	1.034	0.886	1.195	1.027	1.280	0.973	1.266	1.036	1.353	1.033
8	0.000	0.611	0.644	0.932	0.712	0.904	0.706	1.092	0.849	1.202	0.885	1.222	0.869	1.070
9	0.000	0.742	0.802	1.079	0.887	0.998	0.790	1.232	1.036	1.379	1.082	1.394	1.039	1.196
10	0.000	0.569	0.902	0.746	1.083	0.740	1.030	0.832	1.212	0.914	1.231	0.917	1.236	0.872
11	0.000	0.617	0.953	0.901	1.217	0.916	1.218	1.019	1.366	1.058	1.374	1.094	1.396	1.054
12	0.376	0.606	0.571	1.019	0.773	1.116	0.836	1.181	0.888	1.242	0.913	1.247	0.890	1.143
13	0.492	0.692	0.694	1.128	0.934	1.266	0.995	1.286	1.012	1.362	1.068	1.360	1.020	1.247
14	0.643	0.603	0.941	0.780	1.090	0.817	1.116	0.754	1.035	0.853	1.196	0.833	1.111	0.837
15	0.717	0.739	1.076	0.953	1.221	0.969	1.243	0.885	1.151	1.007	1.336	0.982	1.237	0.968
16	0.518	0.833	0.706	1.060	0.765	1.098	0.818	1.133	0.841	1.207	0.896	1.208	0.859	1.120
17	0.525	0.831	0.783	1.062	0.842	1.180	0.970	1.320	1.049	1.385	1.083	1.393	1.054	1.287
18	0.000	0.528	0.807	0.580	0.850	0.711	1.062	0.993	1.209	0.900	1.222	0.912	1.242	0.895
19	0.000	0.556	0.811	0.651	0.884	0.797	1.124	0.802	1.300	1.194	1.340	1.073	1.378	1.045
20	0.000	0.568	0.551	0.826	0.667	1.024	0.737	1.055	0.788	0.966	0.844	1.204	0.862	1.072
21	0.000	0.396	0.592	0.881	0.810	1.113	0.923	1.116	0.878	1.197	0.983	1.313	1.003	1.180
22	0.000	0.000	0.554	0.567	0.877	0.705	0.991	0.648	0.846	0.728	1.067	0.832	1.169	0.850
23	0.000	0.000	0.000	0.558	0.840	0.784	1.024	0.743	0.948	0.829	1.162	0.975	1.305	1.030
24	0.000	0.000	0.000	0.000	0.521	0.813	0.688	0.940	0.714	1.060	0.808	1.082	0.814	1.157
25	0.000	0.000	0.000	0.000	0.000	0.698	0.725	0.980	0.842	1.117	0.909	1.147	0.941	1.262
26	0.000	0.000	0.000	0.000	0.000	0.000	0.635	0.627	0.869	0.695	0.900	0.596	0.837	0.734
27	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.545	0.743	0.653	0.780	0.584	0.743	0.744
28	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.497	0.473	0.685

**** CLUSTER WISE POWER ****

J I	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1	0.668	0.678	0.501	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.912	0.567	0.680	0.590	0.791	0.599	0.662	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	1.157	0.781	0.921	0.831	1.063	0.859	0.936	0.678	0.000	0.000	0.000	0.000	0.000	0.000
4	0.872	1.150	0.811	1.132	0.814	1.089	0.778	0.935	0.608	0.000	0.000	0.000	0.000	0.000
5	1.048	1.338	1.019	1.339	1.030	1.225	0.938	1.135	0.865	0.827	0.000	0.000	0.000	0.000
6	1.231	0.900	1.228	0.862	1.092	0.741	0.990	0.809	1.107	0.786	0.823	0.000	0.000	0.000
7	1.356	1.087	1.422	1.043	1.257	0.860	1.136	1.042	1.326	1.009	1.094	0.772	0.000	0.000
8	0.798	1.235	1.102	1.280	0.902	1.195	0.856	1.301	0.937	1.234	0.866	1.023	0.834	0.000
9	0.941	1.357	0.925	1.445	1.310	1.445	1.105	1.415	1.130	1.329	0.990	1.149	0.842	0.000
10	1.198	0.898	1.260	0.911	1.071	0.930	1.295	0.922	1.157	0.776	1.000	0.806	0.940	0.000
11	1.370	1.091	1.434	1.094	1.405	1.134	1.461	1.076	1.297	0.939	1.115	0.949	1.032	0.000
12	0.847	1.239	0.931	1.304	0.949	1.314	0.958	1.295	0.919	1.205	0.898	1.189	0.802	0.771
13	0.978	1.353	1.088	1.453	1.129	1.437	1.111	1.470	1.143	1.456	1.168	1.368	0.991	0.923
14	1.130	0.837	1.181	0.930	1.269	0.851	1.152	0.944	1.337	0.973	1.370	0.918	1.096	0.695
15	1.263	0.995	1.330	1.111	1.433	1.011	1.297	1.130	1.512	1.158	1.470	1.037	1.113	0.740
16	0.834	1.227	0.939	1.331	0.978	1.313	0.959	1.347	0.990	1.323	0.938	1.008	0.653	0.743
17	1.018	1.430	1.161	1.531	1.196	1.542	1.192	1.526	1.173	1.477	1.113	1.077	0.734	0.677
18	1.248	0.956	1.357	1.013	1.356	1.012	1.366	0.980	1.287	1.009	1.315	0.873	0.938	0.000
19	1.382	1.130	1.513	1.164	1.501	1.186	1.481	1.060	1.354	1.181	1.439	1.058	1.022	0.000
20	0.814	1.262	0.975	1.361	0.997	1.347	0.922	1.069	0.828	1.290	0.966	1.144	0.737	0.000
21	0.946	1.392	1.137	1.489	1.157	1.482	1.088	1.228	0.973	1.355	1.091	1.123	0.804	0.000
22	1.191	0.909	1.269	0.932	1.246	0.942	1.357	0.933	1.243	0.918	1.094	0.707	0.000	0.000
23	1.357	1.061	1.351	0.986	1.284	1.146	1.455	1.120	1.314	0.979	0.941	0.000	0.000	0.000
24	0.860	1.177	0.819	1.022	0.760	1.215	0.911	1.195	0.849	0.913	0.000	0.000	0.000	0.000
25	1.043	1.307	0.982	1.044	0.837	1.203	0.995	1.097	0.774	0.000	0.000	0.000	0.000	0.000
26	1.086	0.805	1.067	0.754	0.982	0.762	0.950	0.652	0.000	0.000	0.000	0.000	0.000	0.000
27	1.019	0.853	0.994	0.777	0.908	0.756	0.759	0.000	0.000	0.000	0.000	0.000	0.000	0.000
28	0.591	0.741	0.551	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

*** NORMALIZED AXIAL POWER ***

K M	1	2	3	4	5	6	7	8	9	10
1	0.715	0.758	0.774	0.907	0.789	0.735	0.782	0.904	0.788	0.838
2	0.954	0.935	0.981	1.148	0.989	0.936	0.975	1.143	0.991	1.056
3	1.057	1.013	1.064	1.234	1.062	1.011	1.054	1.228	1.058	1.134
4	1.004	0.965	1.012	1.172	1.009	0.962	1.002	1.164	1.003	1.076
5	1.002	0.968	1.014	1.152	1.009	0.965	1.003	1.143	1.002	1.067
6	0.999	0.971	1.017	1.127	1.012	0.969	1.007	1.119	1.006	1.058
7	0.996	0.975	1.023	1.099	1.022	0.974	1.014	1.091	1.017	1.051
8	0.989	0.977	1.027	1.060	1.044	0.979	1.021	1.058	1.040	1.046
9	1.034	1.027	1.079	1.065	1.111	1.033	1.075	1.067	1.112	1.086
10	1.072	1.070	1.117	1.051	1.148	1.079	1.116	1.057	1.152	1.102
11	1.121	1.119	1.140	1.017	1.154	1.133	1.143	1.025	1.161	1.094
12	1.246	1.253	1.153	0.959	1.134	1.265	1.164	0.969	1.143	1.066
13	1.282	1.298	1.151	0.908	1.116	1.305	1.168	0.919	1.123	1.036
14	1.012	1.076	0.937	0.717	0.904	1.070	0.953	0.724	0.907	0.831
15	0.517	0.597	0.510	0.379	0.493	0.585	0.523	0.384	0.493	0.448

***** NORMALIZED POWER (Z AXIS) FOR THERMAL CALCULATION *****

CHANNEL# 1			CHANNEL# 2			CHANNEL# 3			CHANNEL# 4			CHANNEL# 5		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
9	9	7.15346E-01	18	9	7.57696E-01	27	9	7.74046E-01	36	9	9.06512E-01	45	9	7.89310E-01
8	8	1.00588E+00	17	8	9.73930E-01	26	8	1.02244E+00	35	8	1.19126E+00	44	8	1.02527E+00
7	7	1.00300E+00	16	7	9.66318E-01	25	7	1.01330E+00	34	7	1.16180E+00	43	7	1.00871E+00
6	6	9.97504E-01	15	6	9.72548E-01	24	6	1.02005E+00	33	6	1.11291E+00	42	6	1.01738E+00
5	5	9.88758E-01	14	5	9.76579E-01	23	5	1.02691E+00	32	5	1.06037E+00	41	5	1.04375E+00
4	4	1.05302E+00	13	4	1.04841E+00	22	4	1.09802E+00	31	4	1.05810E+00	40	4	1.12969E+00
3	3	1.18326E+00	12	3	1.18596E+00	21	3	1.14638E+00	30	3	9.87913E-01	39	3	1.14431E+00
2	2	1.14689E+00	11	2	1.18690E+00	20	2	1.04384E+00	29	2	8.12480E-01	38	2	1.00987E+00
1	1	5.16747E-01	10	1	5.97353E-01	19	1	5.10308E-01	28	1	3.79328E-01	37	1	4.93173E-01

CHANNEL# 6			CHANNEL# 7			CHANNEL# 8			CHANNEL# 9		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
54	9	7.34643E-01	63	9	7.82089E-01	72	9	9.04352E-01	81	9	7.87812E-01
53	8	9.73769E-01	62	8	1.01409E+00	71	8	1.18562E+00	80	8	1.02489E+00
52	7	9.63551E-01	61	7	1.00243E+00	70	7	1.15356E+00	79	7	1.00267E+00
51	6	9.71469E-01	60	6	1.01048E+00	69	6	1.10491E+00	78	6	1.01178E+00
50	5	9.78620E-01	59	5	1.02055E+00	68	5	1.05831E+00	77	5	1.04016E+00
49	4	1.05594E+00	58	4	1.09580E+00	67	4	1.06214E+00	76	4	1.13160E+00
48	3	1.19903E+00	57	3	1.15363E+00	66	3	9.96681E-01	75	3	1.15217E+00
47	2	1.18718E+00	56	2	1.06047E+00	65	2	8.21453E-01	74	2	1.01487E+00
46	1	5.84696E-01	55	1	5.22911E-01	64	1	3.83729E-01	73	1	4.92597E-01

DIFFUSION CALCULATION HAS BEEN PERFORMED

DIF.CALC.STEP	10
TRANSIENT TIME	25.0000 SEC
REACTOR POWER	1.54339E-07 MWT
CORE AVERAGED FUEL TEMP.	19.91 DEG-C
CORE AVERAGED VOID FRAC.	0.00 %
CORE K-EFFECTIVE	0.9915298
EXECUTTED CONDITION	1 (SPECIFIED TIME)
DIF.OF FUEL TEMP	0.01 DEG-C AT SLAB# 54
REACTOR POWER CHANGING RATIO	1.72
CONTROL ROD POSITION	
C/R# 3 (B4C)	73.91 % INSERTED
C/R# 25 (B4C)	73.91 % INSERTED
C/R# 47 (B4C)	73.91 % INSERTED
C/R# 69 (B4C)	73.91 % INSERTED
CPU TIME IN THIS STEP	2.01 SEC
CONVERGENCY CONDITION	0 (CONVERGED)

FOR PLOTTING INFORMATION

ITEM	UNIT	ABSOLUTE MAXIMUM	ABSOLUTE MINIMUM	NORMALIZED MAXIMUM	NORMALIZED MINIMUM
POWER DENSITY	W/CC	1.452E-02	1.116E-03	1.908E+00	1.466E-01
FAST NEUTRON FLUX	N/CM2.S	3.020E+00	2.409E-01	1.753E+00	1.398E-01
THERMAL NEUTRON FLUX	N/CM2.S	2.053E+00	1.519E-01	1.708E+00	1.264E-01
FUEL TEMPERATURE	DEG-C	1.992E+01	1.990E+01	1.002E+00	1.001E+00
VOID FRACTION	%	0.000E+00	0.000E+00	0.000E+00	0.000E+00

***** THERMAL CALCULATION RESULTS *****

CHANNEL# 1				CHANNEL# 2				CHANNEL# 3				CHANNEL# 4				CHANNEL# 5			
S L	N D	FUEL TEMP(C)	VOID (%)	S L	N D	FUEL TEMP(C)	VOID (%)	S L	N D	FUEL TEMP(C)	VOID (%)	S L	N D	FUEL TEMP(C)	VOID (%)	S L	N D	FUEL TEMP(C)	VOID (%)
9	9	19.92	0.00	18	9	19.92	0.00	27	9	19.92	0.00	36	9	19.92	0.00	45	9	19.92	0.00
8	8	19.92	0.00	17	8	19.92	0.00	26	8	19.92	0.00	35	8	19.92	0.00	44	8	19.92	0.00
7	7	19.91	0.00	16	7	19.92	0.00	25	7	19.92	0.00	34	7	19.91	0.00	43	7	19.92	0.00
6	6	19.91	0.00	15	6	19.91	0.00	24	6	19.91	0.00	33	6	19.91	0.00	42	6	19.91	0.00
5	5	19.91	0.00	14	5	19.91	0.00	23	5	19.91	0.00	32	5	19.91	0.00	41	5	19.91	0.00
4	4	19.91	0.00	13	4	19.91	0.00	22	4	19.91	0.00	31	4	19.91	0.00	40	4	19.91	0.00
3	3	19.90	0.00	12	3	19.91	0.00	21	3	19.91	0.00	30	3	19.90	0.00	39	3	19.91	0.00
2	2	19.90	0.00	11	2	19.90	0.00	20	2	19.90	0.00	29	2	19.90	0.00	38	2	19.90	0.00
1	1	19.90	0.00	10	1	19.90	0.00	19	1	19.90	0.00	28	1	19.90	0.00	37	1	19.90	0.00

S L	N D	CHANNEL# 6 FUEL TEMP(C)	CHANNEL# 6 VOID (%)	S L	N D	CHANNEL# 7 FUEL TEMP(C)	CHANNEL# 7 VOID (%)	S L	N D	CHANNEL# 8 FUEL TEMP(C)	CHANNEL# 8 VOID (%)	S L	N D	CHANNEL# 9 FUEL TEMP(C)	CHANNEL# 9 VOID (%)
54	9	19.92	0.00	63	9	19.92	0.00	72	9	19.92	0.00	81	9	19.92	0.00
53	8	19.92	0.00	62	8	19.92	0.00	71	8	19.92	0.00	80	8	19.92	0.00
52	7	19.92	0.00	61	7	19.92	0.00	70	7	19.91	0.00	79	7	19.92	0.00
51	6	19.91	0.00	60	6	19.91	0.00	69	6	19.91	0.00	78	6	19.91	0.00
50	5	19.91	0.00	59	5	19.91	0.00	68	5	19.91	0.00	77	5	19.91	0.00
49	4	19.91	0.00	58	4	19.91	0.00	67	4	19.91	0.00	76	4	19.91	0.00
48	3	19.91	0.00	57	3	19.91	0.00	66	3	19.90	0.00	75	3	19.91	0.00
47	2	19.91	0.00	56	2	19.90	0.00	65	2	19.90	0.00	74	2	19.90	0.00
46	1	19.90	0.00	55	1	19.90	0.00	64	1	19.90	0.00	73	1	19.90	0.00

***** NORMALIZED POWER DISTRIBUTION FOR THERMAL CALCULATION *****

SLAB	NODE	CHANNEL# 1 VALUE	SLAB	NODE	CHANNEL# 2 VALUE	SLAB	NODE	CHANNEL# 3 VALUE	SLAB	NODE	CHANNEL# 4 VALUE	SLAB	NODE	CHANNEL# 5 VALUE
9	9	1.00481E-04	18	9	6.39838E-04	27	9	2.30690E-03	36	9	1.34120E-02	45	9	1.15805E-02
8	8	2.82583E-04	17	8	1.64487E-03	26	8	6.09439E-03	35	8	3.52481E-02	44	8	3.00836E-02
7	7	2.81773E-04	16	7	1.63201E-03	25	7	6.03991E-03	34	7	3.43766E-02	43	7	2.95977E-02
6	6	2.80229E-04	15	6	1.64254E-03	24	6	6.08018E-03	33	6	3.29299E-02	42	6	2.98522E-02
5	5	1.38886E-04	14	5	8.24674E-04	23	5	3.06050E-03	32	5	1.56882E-02	41	5	1.53136E-02
4	4	2.95825E-04	13	4	1.77066E-03	22	4	6.54490E-03	31	4	3.13082E-02	40	4	3.31476E-02
3	3	3.32414E-04	12	3	2.00298E-03	21	3	6.83316E-03	30	3	2.92314E-02	39	3	3.35765E-02
2	2	3.22197E-04	11	2	2.00456E-03	20	2	6.22197E-03	29	2	2.40405E-02	38	2	2.96316E-02
1	1	7.25850E-05	10	1	5.04436E-04	19	1	1.52088E-03	28	1	5.61218E-03	37	1	7.23571E-03

SLAB	NODE	CHANNEL# 6 VALUE	SLAB	NODE	CHANNEL# 7 VALUE	SLAB	NODE	CHANNEL# 8 VALUE	SLAB	NODE	CHANNEL# 9 VALUE
54	9	5.61696E-04	63	9	2.28560E-03	72	9	1.32866E-02	81	9	1.17186E-02
53	8	1.48905E-03	62	8	5.92724E-03	71	8	3.48364E-02	80	8	3.04887E-02
52	7	1.47342E-03	61	7	5.85909E-03	70	7	3.38944E-02	79	7	2.98277E-02
51	6	1.48553E-03	60	6	5.90612E-03	69	6	3.24650E-02	78	6	3.00988E-02
50	5	7.48235E-04	59	5	2.98249E-03	68	5	1.55484E-02	77	5	1.54721E-02
49	4	1.61470E-03	58	4	6.40485E-03	67	4	3.12083E-02	76	4	3.36632E-02
48	3	1.83352E-03	57	3	6.74285E-03	66	3	2.92850E-02	75	3	3.42753E-02
47	2	1.81539E-03	56	2	6.19831E-03	65	2	2.41364E-02	74	2	3.01907E-02
46	1	4.47049E-04	55	1	1.52817E-03	64	1	5.63767E-03	73	1	7.32728E-03

***** WEIGHTING FACTOR FOR DOPPLER REACTIVITY *****

SLAB	NODE	CHANNEL# 1 VALUE	SLAB	NODE	CHANNEL# 2 VALUE	SLAB	NODE	CHANNEL# 3 VALUE	SLAB	NODE	CHANNEL# 4 VALUE	SLAB	NODE	CHANNEL# 5 VALUE
9	9	7.45549E-05	18	9	4.31626E-04	27	9	1.75487E-03	36	9	9.26311E-03	45	9	8.94066E-03
8	8	2.88155E-04	17	8	1.56193E-03	26	8	6.49406E-03	35	8	3.39306E-02	44	8	3.24189E-02
7	7	2.97256E-04	16	7	1.62372E-03	25	7	6.72547E-03	34	7	3.39976E-02	43	7	3.31462E-02
6	6	2.93275E-04	15	6	1.63927E-03	24	6	6.78824E-03	33	6	3.11988E-02	42	6	3.34350E-02
5	5	1.47320E-04	14	5	8.43352E-04	23	5	3.50534E-03	32	5	1.44395E-02	41	5	1.77431E-02
4	4	3.26954E-04	13	4	1.90419E-03	22	4	7.86460E-03	31	4	2.82321E-02	40	4	4.06689E-02
3	3	4.06269E-04	12	3	2.37388E-03	21	3	8.55976E-03	30	3	2.46648E-02	39	3	4.19670E-02
2	2	3.62889E-04	11	2	2.16434E-03	20	2	6.73865E-03	29	2	1.60167E-02	38	2	3.10235E-02
1	1	3.74027E-05	10	1	2.45311E-04	19	1	7.37890E-04	28	1	1.61485E-03	37	1	3.36112E-03

SLAB	NODE	CHANNEL# 6 VALUE	SLAB	NODE	CHANNEL# 7 VALUE	SLAB	NODE	CHANNEL# 8 VALUE	SLAB	NODE	CHANNEL# 9 VALUE
54	9	3.75647E-04	63	9	1.73978E-03	72	9	9.16632E-03	81	9	9.15131E-03
53	8	1.39247E-03	62	8	6.30130E-03	71	8	3.33959E-02	80	8	3.30273E-02
52	7	1.44218E-03	61	7	6.49347E-03	70	7	3.32825E-02	79	7	3.33864E-02
51	6	1.46165E-03	60	6	6.57319E-03	69	6	3.05370E-02	78	6	3.37109E-02
50	5	7.57346E-04	59	5	3.41710E-03	68	5	1.42910E-02	77	5	1.79883E-02
49	4	1.72757E-03	58	4	7.73667E-03	67	4	2.82954E-02	76	4	4.16345E-02
48	3	2.17851E-03	57	3	8.55735E-03	66	3	2.49905E-02	75	3	4.34517E-02
47	2	1.97455E-03	56	2	6.81234E-03	65	2	1.62925E-02	74	2	3.21357E-02
46	1	2.19198E-04	55	1	7.50287E-04	64	1	1.64396E-03	73	1	3.45822E-03

***** WEIGHTING FACTOR FOR VOID REACTIVITY *****

CHANNEL# 1			CHANNEL# 2			CHANNEL# 3			CHANNEL# 4			CHANNEL# 5		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
9	9	5.66196E-05	18	9	3.73911E-04	27	9	1.56553E-03	36	9	7.25780E-03	45	9	7.84593E-03
8	8	2.25767E-04	17	8	1.50856E-03	26	8	6.27684E-03	35	8	2.90113E-02	44	8	3.12255E-02
7	7	2.60813E-04	16	7	1.78372E-03	25	7	7.37406E-03	34	7	3.26084E-02	43	7	3.63301E-02
6	6	2.58093E-04	15	6	1.80580E-03	24	6	7.47405E-03	33	6	3.00345E-02	42	6	3.67882E-02
5	5	1.24414E-04	14	5	8.90115E-04	23	5	3.71267E-03	32	5	1.33230E-02	41	5	1.89119E-02
4	4	2.87712E-04	13	4	2.09547E-03	22	4	8.68538E-03	31	4	2.71752E-02	40	4	4.56490E-02
3	3	3.65540E-04	12	3	2.65243E-03	21	3	9.40556E-03	30	3	2.36520E-02	39	3	4.68222E-02
2	2	2.99548E-04	11	2	2.14902E-03	20	2	6.48513E-03	29	2	1.36481E-02	38	2	3.01436E-02
1	1	2.98037E-05	10	1	2.15083E-04	19	1	6.37979E-04	28	1	1.24098E-03	37	1	2.91363E-03

CHANNEL# 6			CHANNEL# 7			CHANNEL# 8			CHANNEL# 9		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
54	9	3.18977E-04	63	9	1.57561E-03	72	9	7.14489E-03	81	9	7.95932E-03
53	8	1.28420E-03	62	8	6.27143E-03	71	8	2.84207E-02	80	8	3.14236E-02
52	7	1.51270E-03	61	7	7.33419E-03	70	7	3.17704E-02	79	7	3.62001E-02
51	6	1.53821E-03	60	6	7.44017E-03	69	6	2.92836E-02	78	6	3.66763E-02
50	5	7.64380E-04	59	5	3.71086E-03	68	5	1.31186E-02	77	5	1.89593E-02
49	4	1.81920E-03	58	4	8.73751E-03	67	4	2.70889E-02	76	4	4.61541E-02
48	3	2.33810E-03	57	3	9.57331E-03	66	3	2.38328E-02	75	3	4.78294E-02
47	2	1.90581E-03	56	2	6.63450E-03	65	2	1.38186E-02	74	2	3.08998E-02
46	1	1.90313E-04	55	1	6.52255E-04	64	1	1.25821E-03	73	1	2.98411E-03

***** WEIGHTING FACTOR FOR COOLANT TEMPERATURE REACTIVITY *****

CHANNEL# 1			CHANNEL# 2			CHANNEL# 3			CHANNEL# 4			CHANNEL# 5		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
9	9	5.66196E-05	18	9	3.73911E-04	27	9	1.56553E-03	36	9	7.25780E-03	45	9	7.84593E-03
8	8	2.25767E-04	17	8	1.50856E-03	26	8	6.27684E-03	35	8	2.90113E-02	44	8	3.12255E-02
7	7	2.60813E-04	16	7	1.78372E-03	25	7	7.37406E-03	34	7	3.26084E-02	43	7	3.63301E-02
6	6	2.58093E-04	15	6	1.80580E-03	24	6	7.47405E-03	33	6	3.00345E-02	42	6	3.67882E-02
5	5	1.24414E-04	14	5	8.90115E-04	23	5	3.71267E-03	32	5	1.33230E-02	41	5	1.89119E-02
4	4	2.87712E-04	13	4	2.09547E-03	22	4	8.68538E-03	31	4	2.71752E-02	40	4	4.56490E-02
3	3	3.65540E-04	12	3	2.65243E-03	21	3	9.40556E-03	30	3	2.36520E-02	39	3	4.68222E-02
2	2	2.99548E-04	11	2	2.14902E-03	20	2	6.48513E-03	29	2	1.36481E-02	38	2	3.01436E-02
1	1	2.98037E-05	10	1	2.15083E-04	19	1	6.37979E-04	28	1	1.24098E-03	37	1	2.91363E-03

CHANNEL# 6			CHANNEL# 7			CHANNEL# 8			CHANNEL# 9		
SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE	SLAB	NODE	VALUE
54	9	3.18977E-04	63	9	1.57561E-03	72	9	7.14489E-03	81	9	7.95932E-03
53	8	1.28420E-03	62	8	6.27143E-03	71	8	2.84207E-02	80	8	3.14236E-02
52	7	1.51270E-03	61	7	7.33419E-03	70	7	3.17704E-02	79	7	3.62001E-02
51	6	1.53821E-03	60	6	7.44017E-03	69	6	2.92836E-02	78	6	3.66763E-02
50	5	7.64380E-04	59	5	3.71086E-03	68	5	1.31186E-02	77	5	1.89593E-02
49	4	1.81920E-03	58	4	8.73751E-03	67	4	2.70889E-02	76	4	4.61541E-02
48	3	2.33810E-03	57	3	9.57331E-03	66	3	2.38328E-02	75	3	4.78294E-02
47	2	1.90581E-03	56	2	6.63450E-03	65	2	1.38186E-02	74	2	3.08998E-02
46	1	1.90313E-04	55	1	6.52255E-04	64	1	1.25821E-03	73	1	2.98411E-03

```
0### PERIOD SHORT (SCRAM) SIGNAL ON ###  AT 2.55000E+01 (SEC.)
 CITATION CALCULATION FLG(TINE,TEMP,POWER) =     1       30.00000        0.01443        10.00000        0.10000
1

 EUREKA-ATR/MOD1          ( 1)                    THERMAL REACTOR CORE KINETICS CODE
      ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR                                    91-12-02
0 CPU TIME =  101.86
    TIME      NORM POWER    TOTAL REACT CONTROL REAC  VOID REACT  WATER T REAC DOPPLER REAC  PERIOD      F ENTH (C/G- F ENTH (C/G-
      SEC         0              0    ¥       0    ¥       0    ¥       0    ¥       0    ¥       0 SEC  SLB  7 UO2)  SLB  8 UO2)
   26.00000 9.21757E+00 4.40489E-01 4.40080E-01 0.00000E+00 -1.67689E-04 5.75913E-04 7.77424E+00 1.07935E+00 1.07952E+00
   27.00000 1.04705E+01 4.40495E-01 4.40080E-01 0.00000E+00 -1.68790E-04 5.83359E-04 7.86163E+00 1.07928E+00 1.07943E+00
   28.00000 1.18786E+01 4.40500E-01 4.40080E-01 0.00000E+00 -1.69758E-04 5.89697E-04 7.93362E+00 1.07922E+00 1.07936E+00
   29.00000 1.34620E+01 4.40505E-01 4.40080E-01 0.00000E+00 -1.70605E-04 5.95179E-04 7.99336E+00 1.07916E+00 1.07931E+00
   30.00000 1.52435E+01 4.40509E-01 4.40080E-01 0.00000E+00 -1.71336E-04 5.99934E-04 8.04315E+00 1.07912E+00 1.07925E+00
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(4)DBE(パス5)基準ケース1点近似解析

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 EUREKA-ATR/MOD1          ( 4)                    THERMAL REACTOR CORE KINETICS CODE
       ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR                                          91-10-18
0 CPU TIME =   255.08
 STANDARD TIME STEP NUMBER   250.  ACTUAL TIME STEP NUMBER   269.  TIME = 0.250000E+02 SEC.  LAST DT =  0.100000E+00 SEC.
0
 TOTAL SYSTEM    NORM POWR    POWR          ENERGY        TOT. REAC     DOP. REAC     WAT-T REAC    VOID REAC     EXP. REAC     INSTD REAC
 QUANTITIES                   (MW)          (MWS)         ($)           ($)           ($)           ($)           ($)           ($)
                 8.79305E+00  1.67296E-07   1.19941E-06   4.56880E-01   5.65692E-04  -1.66052E-04   0.00000E+00   0.00000E+00   4.56480E-01
0 VOLUME         AVG. PRES    TOT. MASS     AVG. ENTH     AVG. DENS     AVG. TEMP     AVG. QUAL     LIQ. MASS
  NUMBER         (KG/CM**2A)  (KG) H2O      (KC/KG)       (KG/M3)       (C)                         (KG)
     1           3.19550E+00  1.17893E+00   2.00005E+01   9.98518E+02   1.99019E+01   0.00000E+00   1.17893E+00
     2           3.12598E+00  2.35885E+00   2.00004E+01   9.98515E+02   1.99033E+01   0.00000E+00   2.35885E+00
     3           3.01275E+00  2.35884E+00   2.00000E+01   9.98509E+02   1.99054E+01   0.00000E+00   2.35884E+00
     4           2.90823E+00  2.35883E+00   1.99999E+01   9.98504E+02   1.99076E+01   0.00000E+00   2.35883E+00
     5           2.81219E+00  1.17891E+00   1.99996E+01   9.98500E+02   1.99094E+01   0.00000E+00   1.17891E+00
     6           2.72485E+00  2.35881E+00   1.99999E+01   9.98495E+02   1.99117E+01   0.00000E+00   2.35881E+00
     7           2.60255E+00  2.35879E+00   1.99999E+01   9.98489E+02   1.99143E+01   0.00000E+00   2.35879E+00
     8           2.48013E+00  2.35878E+00   2.00000E+01   9.98483E+02   1.99172E+01   0.00000E+00   2.35878E+00
     9           2.40144E+00  1.17889E+00   1.99999E+01   9.98480E+02   1.99188E+01   0.00000E+00   1.17889E+00
    10           3.23125E+00  9.43346E+00   1.99979E+01   9.98520E+02   1.98985E+01   0.00000E+00   9.43346E+00
    11           3.14931E+00  1.88679E+01   1.99977E+01   9.98516E+02   1.99000E+01   0.00000E+00   1.88679E+01
    12           3.04007E+00  1.88678E+01   1.99970E+01   9.98511E+02   1.99018E+01   0.00000E+00   1.88678E+01
    13           2.93068E+00  1.88677E+01   1.99966E+01   9.98506E+02   1.99038E+01   0.00000E+00   1.88677E+01
    14           2.82860E+00  9.43328E+00   1.99961E+01   9.98501E+02   1.99055E+01   0.00000E+00   9.43328E+00
    15           2.74648E+00  1.88675E+01   1.99960E+01   9.98497E+02   1.99073E+01   0.00000E+00   1.88675E+01
    16           2.62692E+00  1.88674E+01   1.99957E+01   9.98491E+02   1.99096E+01   0.00000E+00   1.88674E+01
    17           2.49725E+00  1.88673E+01   1.99954E+01   9.98485E+02   1.99122E+01   0.00000E+00   1.88673E+01
    18           2.40493E+00  9.43309E+00   1.99951E+01   9.98481E+02   1.99139E+01   0.00000E+00   9.43309E+00
    19           3.23423E+00  2.59435E+01   1.99979E+01   9.98520E+02   1.98984E+01   0.00000E+00   2.59435E+01
    20           3.15225E+00  5.18859E+01   1.99976E+01   9.98517E+02   1.98999E+01   0.00000E+00   5.18859E+01
    21           3.04294E+00  5.18856E+01   1.99970E+01   9.98511E+02   1.99017E+01   0.00000E+00   5.18856E+01
    22           2.93352E+00  5.18853E+01   1.99966E+01   9.98506E+02   1.99037E+01   0.00000E+00   5.18853E+01
    23           2.83139E+00  2.59430E+01   1.99961E+01   9.98501E+02   1.99055E+01   0.00000E+00   2.59430E+01
    24           2.74924E+00  5.18849E+01   1.99959E+01   9.98497E+02   1.99071E+01   0.00000E+00   5.18849E+01
    25           2.62961E+00  5.18846E+01   1.99957E+01   9.98492E+02   1.99095E+01   0.00000E+00   5.18846E+01
    26           2.49985E+00  5.18842E+01   1.99955E+01   9.98485E+02   1.99122E+01   0.00000E+00   5.18842E+01
    27           2.40749E+00  2.59425E+01   1.99951E+01   9.98481E+02   1.99138E+01   0.00000E+00   2.59425E+01
    28           3.25230E+00  1.46225E+02   1.99975E+01   9.98521E+02   1.98976E+01   0.00000E+00   1.46225E+02
    29           3.16979E+00  2.92449E+02   1.99973E+01   9.98517E+02   1.98992E+01   0.00000E+00   2.92449E+02
    30           3.05978E+00  2.92447E+02   1.99967E+01   9.98512E+02   1.99010E+01   0.00000E+00   2.92447E+02
    31           2.94969E+00  2.92445E+02   1.99962E+01   9.98507E+02   1.99030E+01   0.00000E+00   2.92445E+02
    32           2.84696E+00  1.46222E+02   1.99957E+01   9.98502E+02   1.99047E+01   0.00000E+00   1.46222E+02
    33           2.75422E+00  2.92443E+02   1.99955E+01   9.98498E+02   1.99066E+01   0.00000E+00   2.92443E+02
    34           2.63381E+00  2.92441E+02   1.99952E+01   9.98492E+02   1.99090E+01   0.00000E+00   2.92441E+02
    35           2.50330E+00  2.92439E+02   1.99949E+01   9.98486E+02   1.99115E+01   0.00000E+00   2.92439E+02
    36           2.42041E+00  1.46219E+02   1.99946E+01   9.98482E+02   1.99131E+01   0.00000E+00   1.46219E+02
    37           3.20316E+00  1.81601E+02   1.99984E+01   9.98519E+02   1.98995E+01   0.00000E+00   1.81601E+02
    38           3.12157E+00  3.63201E+02   1.99981E+01   9.98515E+02   1.99011E+01   0.00000E+00   3.63201E+02
    39           3.01278E+00  3.63199E+02   1.99976E+01   9.98510E+02   1.99030E+01   0.00000E+00   3.63199E+02
    40           2.90388E+00  3.63198E+02   1.99973E+01   9.98505E+02   1.99050E+01   0.00000E+00   3.63198E+02
    41           2.80228E+00  1.81598E+02   1.99967E+01   9.98500E+02   1.99067E+01   0.00000E+00   1.81598E+02
    42           2.72053E+00  3.63194E+02   1.99967E+01   9.98496E+02   1.99085E+01   0.00000E+00   3.63194E+02
    43           2.59155E+00  3.63192E+02   1.99964E+01   9.98490E+02   1.99111E+01   0.00000E+00   3.63192E+02
    44           2.46247E+00  3.63190E+02   1.99964E+01   9.98483E+02   1.99139E+01   0.00000E+00   3.63190E+02
    45           2.38051E+00  1.81594E+02   1.99961E+01   9.98479E+02   1.99155E+01   0.00000E+00   1.81594E+02
    46           3.23136E+00  9.43346E+00   1.99979E+01   9.98520E+02   1.98985E+01   0.00000E+00   9.43346E+00
    47           3.14942E+00  1.88679E+01   1.99976E+01   9.98516E+02   1.99000E+01   0.00000E+00   1.88679E+01
    48           3.04014E+00  1.88678E+01   1.99971E+01   9.98511E+02   1.99019E+01   0.00000E+00   1.88678E+01
    49           2.93078E+00  1.88677E+01   1.99966E+01   9.98506E+02   1.99038E+01   0.00000E+00   1.88677E+01
    50           2.82872E+00  9.43328E+00   1.99961E+01   9.98501E+02   1.99056E+01   0.00000E+00   9.43328E+00
    51           2.74657E+00  1.88675E+01   1.99960E+01   9.98497E+02   1.99073E+01   0.00000E+00   1.88675E+01
    52           2.62698E+00  1.88674E+01   1.99957E+01   9.98491E+02   1.99096E+01   0.00000E+00   1.88674E+01
    53           2.49730E+00  1.88673E+01   1.99955E+01   9.98485E+02   1.99123E+01   0.00000E+00   1.88673E+01
    54           2.40496E+00  9.43309E+00   1.99953E+01   9.98481E+02   1.99140E+01   0.00000E+00   9.43309E+00
    55           3.23827E+00  2.47636E+01   1.99976E+01   9.98521E+02   1.98980E+01   0.00000E+00   2.47636E+01
    56           3.15594E+00  4.95270E+01   1.99973E+01   9.98517E+02   1.98995E+01   0.00000E+00   4.95270E+01
    57           3.04614E+00  4.95267E+01   1.99967E+01   9.98512E+02   1.99014E+01   0.00000E+00   4.95267E+01
    58           2.93629E+00  4.95265E+01   1.99962E+01   9.98506E+02   1.99032E+01   0.00000E+00   4.95265E+01
    59           2.83448E+00  2.47631E+01   1.99957E+01   9.98501E+02   1.99050E+01   0.00000E+00   2.47631E+01
    60           2.75196E+00  4.95261E+01   1.99954E+01   9.98498E+02   1.99066E+01   0.00000E+00   4.95261E+01
    61           2.63222E+00  4.95258E+01   1.99951E+01   9.98492E+02   1.99089E+01   0.00000E+00   4.95258E+01
    62           2.50266E+00  4.95255E+01   1.99949E+01   9.98486E+02   1.99115E+01   0.00000E+00   4.95255E+01
    63           2.41030E+00  2.47626E+01   1.99944E+01   9.98481E+02   1.99131E+01   0.00000E+00   2.47626E+01
    64           3.25226E+00  1.46225E+02   1.99976E+01   9.98521E+02   1.98977E+01   0.00000E+00   1.46225E+02
    65           3.16981E+00  2.92449E+02   1.99973E+01   9.98517E+02   1.98992E+01   0.00000E+00   2.92449E+02
    66           3.05987E+00  2.92447E+02   1.99967E+01   9.98512E+02   1.99010E+01   0.00000E+00   2.92447E+02
    67           2.94981E+00  2.92445E+02   1.99962E+01   9.98507E+02   1.99030E+01   0.00000E+00   2.92445E+02
    68           2.84695E+00  1.46222E+02   1.99957E+01   9.98502E+02   1.99047E+01   0.00000E+00   1.46222E+02
    69           2.75410E+00  2.92443E+02   1.99956E+01   9.98498E+02   1.99067E+01   0.00000E+00   2.92443E+02
    70           2.63373E+00  2.92441E+02   1.99952E+01   9.98492E+02   1.99089E+01   0.00000E+00   2.92441E+02
    71           2.50308E+00  2.92439E+02   1.99949E+01   9.98486E+02   1.99115E+01   0.00000E+00   2.92439E+02
    72           2.42024E+00  1.46219E+02   1.99945E+01   9.98482E+02   1.99130E+01   0.00000E+00   1.46219E+02
    73           3.20325E+00  1.81601E+02   1.99983E+01   9.98519E+02   1.98995E+01   0.00000E+00   1.81601E+02
    74           3.12163E+00  3.63201E+02   1.99982E+01   9.98515E+02   1.99011E+01   0.00000E+00   3.63201E+02
    75           3.01284E+00  3.63199E+02   1.99977E+01   9.98510E+02   1.99030E+01   0.00000E+00   3.63199E+02
    76           2.90394E+00  3.63198E+02   1.99973E+01   9.98505E+02   1.99051E+01   0.00000E+00   3.63198E+02
    77           2.80233E+00  1.81598E+02   1.99967E+01   9.98500E+02   1.99068E+01   0.00000E+00   1.81598E+02
    78           2.72058E+00  3.63194E+02   1.99967E+01   9.98496E+02   1.99086E+01   0.00000E+00   3.63194E+02
    79           2.59155E+00  3.63192E+02   1.99966E+01   9.98490E+02   1.99112E+01   0.00000E+00   3.63192E+02
    80           2.46250E+00  3.63190E+02   1.99963E+01   9.98483E+02   1.99139E+01   0.00000E+00   3.63190E+02
    81           2.38054E+00  1.81594E+02   1.99960E+01   9.98479E+02   1.99153E+01   0.00000E+00   1.81594E+02
    82           3.85907E+00  3.34274E+01   2.00014E+01   9.98550E+02   1.98881E+01   0.00000E+00   3.34274E+01
    83           3.86333E+00  2.01174E+02   1.99989E+01   9.98551E+02   1.98855E+01   0.00000E+00   2.01174E+02
    84           3.86474E+00  5.49014E+02   1.99989E+01   9.98551E+02   1.98854E+01   0.00000E+00   5.49014E+02
    85           3.87846E+00  2.97059E+03   1.99986E+01   9.98552E+02   1.98849E+01   0.00000E+00   2.97059E+03
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86	3.84973E+00	4.15374E+03	1.99994E+01	9.98550E+02	1.98863E+01	0.00000E+00	4.15374E+03	
87	3.86351E+00	2.01174E+02	1.99989E+01	9.98551E+02	1.98855E+01	0.00000E+00	2.01174E+02	
88	3.86977E+00	5.15582E+02	1.99986E+01	9.98551E+02	1.98850E+01	0.00000E+00	5.15582E+02	
89	3.87804E+00	2.97059E+03	1.99986E+01	9.98552E+02	1.98849E+01	0.00000E+00	2.97059E+03	
90	3.83996E+00	4.15374E+03	1.99994E+01	9.98550E+02	1.98865E+01	0.00000E+00	4.15374E+03	
91	1.72829E+00	9.84715E+01	2.00333E+01	9.98441E+02	1.99671E+01	0.00000E+00	9.84715E+01	
92	1.72883E+00	7.70978E+02	2.00268E+01	9.98442E+02	1.99606E+01	0.00000E+00	7.70978E+02	
93	1.73010E+00	2.15602E+03	2.00272E+01	9.98442E+02	1.99609E+01	0.00000E+00	2.15602E+03	
94	1.73142E+00	1.20937E+04	2.00260E+01	9.98442E+02	1.99597E+01	0.00000E+00	1.20937E+04	
95	1.71671E+00	1.24350E+04	2.00232E+01	9.98442E+02	1.99572E+01	0.00000E+00	1.24350E+04	
96	1.72885E+00	7.70998E+02	2.00268E+01	9.98442E+02	1.99606E+01	0.00000E+00	7.70998E+02	
97	1.73161E+00	2.05801E+03	2.00254E+01	9.98442E+02	1.99591E+01	0.00000E+00	2.05801E+03	
98	1.74139E+00	1.20937E+04	2.00262E+01	9.98443E+02	1.99597E+01	0.00000E+00	1.20937E+04	
99	1.71672E+00	1.24350E+04	2.00232E+01	9.98442E+02	1.99572E+01	0.00000E+00	1.24350E+04	
100	4.50517E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98712E+01	0.00000E+00	8.86301E+03	
101	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05	
102	4.50545E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98712E+01	0.00000E+00	8.86301E+03	
103	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05	

0 HEAT SLAB NUMBER	VOL NUM	H.T. MODE	SURF FLUX (KC/HR/M2)	CRIT FLUX (KC/HR/M2)	H.T. COEF (KC/H/M2/C)	SURF TEMP (C)	LOCAL ENGY (CAL/G-U02)	VOID FRAC	LOCAL MASS FLUX	LOCAL FLUID TEMP.
1	1	1	6.06264E+00	5.86344E+06	1.05395E+04	1.99026E+01	1.07897E+00	0.00000E+00	4.68643E+06	1.99019E+01
2	2	1	6.24040E+00	5.83946E+06	1.05131E+04	1.99041E+01	1.07907E+00	0.00000E+00	4.68643E+06	1.99033E+01
3	3	1	8.44349E-01	5.82862E+06	1.04696E+04	1.99057E+01	1.07921E+00	0.00000E+00	4.68643E+06	1.99054E+01
4	4	1	2.43371E+00	6.76024E+06	1.04289E+04	1.99081E+01	1.07936E+00	0.00000E+00	4.68643E+06	1.99076E+01
5	5	1	1.95339E+00	6.95275E+06	1.03909E+04	1.99098E+01	1.07947E+00	0.00000E+00	4.68643E+06	1.99094E+01
6	6	1	1.24251E+01	6.94269E+06	1.03558E+04	1.99130E+01	1.07961E+00	0.00000E+00	4.68643E+06	1.99117E+01
7	7	1	4.81035E+00	6.92857E+06	1.03058E+04	1.99151E+01	1.07979E+00	0.00000E+00	4.68643E+06	1.99143E+01
8	8	1	4.82683E+00	6.36700E+06	1.02546E+04	1.99180E+01	1.07998E+00	0.00000E+00	4.68643E+06	1.99172E+01
9	9	1	1.19784E+01	6.35860E+06	1.02212E+04	1.99202E+01	1.08008E+00	0.00000E+00	4.68643E+06	1.99188E+01
10	10	1	0.00000E+00	5.86684E+06	0.00000E+00	1.98986E+01	1.07872E+00	0.00000E+00	4.81002E+06	1.98985E+01
11	11	1	2.63312E+00	5.84168E+06	1.07434E+04	1.99004E+01	1.07882E+00	0.00000E+00	4.81002E+06	1.99000E+01
12	12	1	-4.84310E+00	5.83122E+06	1.07007E+04	1.99016E+01	1.07894E+00	0.00000E+00	4.81002E+06	1.99018E+01
13	13	1	2.54245E+00	6.76273E+06	1.06573E+04	1.99042E+01	1.07907E+00	0.00000E+00	4.81002E+06	1.99038E+01
14	14	1	3.90764E+00	6.95463E+06	1.06162E+04	1.99061E+01	1.07918E+00	0.00000E+00	4.81002E+06	1.99055E+01
15	15	1	7.20749E+00	6.94517E+06	1.05826E+04	1.99081E+01	1.07930E+00	0.00000E+00	4.81002E+06	1.99073E+01
16	16	1	2.68249E+00	6.93137E+06	1.05329E+04	1.99100E+01	1.07945E+00	0.00000E+00	4.81002E+06	1.99096E+01
17	17	1	1.91779E+00	6.36882E+06	1.04777E+04	1.99126E+01	1.07962E+00	0.00000E+00	4.81002E+06	1.99122E+01
18	18	1	8.00919E+00	6.35897E+06	1.04378E+04	1.99149E+01	1.07974E+00	0.00000E+00	4.81002E+06	1.99139E+01
19	19	1	0.00000E+00	5.86713E+06	0.00000E+00	1.98985E+01	1.07871E+00	0.00000E+00	4.81191E+06	1.98984E+01
20	20	1	2.75774E+00	5.84196E+06	1.07479E+04	1.99003E+01	1.07882E+00	0.00000E+00	4.81191E+06	1.98999E+01
21	21	1	2.24088E+00	5.83150E+06	1.07052E+04	1.99021E+01	1.07894E+00	0.00000E+00	4.81191E+06	1.99017E+01
22	22	1	6.29633E+00	6.76305E+06	1.06618E+04	1.99045E+01	1.07907E+00	0.00000E+00	4.81191E+06	1.99037E+01
23	23	1	3.75567E+00	6.95495E+06	1.06207E+04	1.99060E+01	1.07917E+00	0.00000E+00	4.81191E+06	1.99055E+01
24	24	1	7.62504E-01	6.94549E+06	1.05871E+04	1.99073E+01	1.07929E+00	0.00000E+00	4.81191E+06	1.99071E+01
25	25	1	5.76485E+00	6.93169E+06	1.05373E+04	1.99102E+01	1.07945E+00	0.00000E+00	4.81191E+06	1.99095E+01
26	26	1	9.38907E+00	6.36909E+06	1.04821E+04	1.99133E+01	1.07962E+00	0.00000E+00	4.81191E+06	1.99122E+01
27	27	1	6.39800E+00	6.35924E+06	1.04422E+04	1.99146E+01	1.07973E+00	0.00000E+00	4.81190E+06	1.99138E+01
28	28	1	-7.35002E+00	5.86886E+06	1.08774E+04	1.98972E+01	1.07867E+00	0.00000E+00	4.86265E+06	1.98976E+01
29	29	1	0.00000E+00	5.84363E+06	0.00000E+00	1.98993E+01	1.07877E+00	0.00000E+00	4.86265E+06	1.98992E+01
30	30	1	4.62553E-01	5.83311E+06	1.08020E+04	1.99012E+01	1.07889E+00	0.00000E+00	4.86265E+06	1.99010E+01
31	31	1	4.49761E+00	6.76485E+06	1.07582E+04	1.99035E+01	1.07901E+00	0.00000E+00	4.86264E+06	1.99030E+01
32	32	1	2.89221E+00	6.95674E+06	1.07165E+04	1.99051E+01	1.07912E+00	0.00000E+00	4.86264E+06	1.99047E+01
33	33	1	-4.38336E-01	6.94606E+06	1.06784E+04	1.99067E+01	1.07925E+00	0.00000E+00	4.86264E+06	1.99066E+01
34	34	1	8.97286E+00	6.93217E+06	1.06279E+04	1.99100E+01	1.07941E+00	0.00000E+00	4.86264E+06	1.99090E+01
35	35	1	3.24377E+00	6.36946E+06	1.05719E+04	1.99121E+01	1.07958E+00	0.00000E+00	4.86264E+06	1.99115E+01
36	36	1	1.11803E+01	6.36061E+06	1.05359E+04	1.99143E+01	1.07967E+00	0.00000E+00	4.86264E+06	1.99131E+01
37	37	1	0.00000E+00	5.86415E+06	0.00000E+00	1.98997E+01	1.07879E+00	0.00000E+00	4.78108E+06	1.98995E+01
38	38	1	2.05735E+00	5.83902E+06	1.06809E+04	1.99014E+01	1.07890E+00	0.00000E+00	4.78107E+06	1.99011E+01
39	39	1	-1.20361E+00	5.82861E+06	1.06384E+04	1.99031E+01	1.07903E+00	0.00000E+00	4.78107E+06	1.99030E+01
40	40	1	4.74656E+00	6.75974E+06	1.05953E+04	1.99056E+01	1.07915E+00	0.00000E+00	4.78107E+06	1.99050E+01
41	41	1	-3.34877E-01	6.95160E+06	1.05544E+04	1.99068E+01	1.07926E+00	0.00000E+00	4.78107E+06	1.99067E+01
42	42	1	3.29972E+00	6.94218E+06	1.05210E+04	1.99090E+01	1.07939E+00	0.00000E+00	4.78107E+06	1.99085E+01
43	43	1	2.05699E+00	6.92728E+06	1.04673E+04	1.99115E+01	1.07956E+00	0.00000E+00	4.78107E+06	1.99111E+01
44	44	1	6.46120E+00	6.36511E+06	1.04124E+04	1.99148E+01	1.07974E+00	0.00000E+00	4.78107E+06	1.99139E+01
45	45	1	8.69939E+00	6.35635E+06	1.03769E+04	1.99165E+01	1.07984E+00	0.00000E+00	4.78107E+06	1.99155E+01
46	46	1	0.00000E+00	5.86686E+06	0.00000E+00	1.98986E+01	1.07873E+00	0.00000E+00	4.81038E+06	1.98985E+01
47	47	1	1.89620E+00	5.84170E+06	1.07441E+04	1.99003E+01	1.07882E+00	0.00000E+00	4.81038E+06	1.99000E+01
48	48	1	1.71711E+00	5.83124E+06	1.07013E+04	1.99022E+01	1.07895E+00	0.00000E+00	4.81038E+06	1.99019E+01
49	49	1	1.43077E+00	6.76276E+06	1.06580E+04	1.99041E+01	1.07908E+00	0.00000E+00	4.81038E+06	1.99038E+01
50	50	1	-1.48704E+00	6.95465E+06	1.06169E+04	1.99057E+01	1.07918E+00	0.00000E+00	4.81038E+06	1.99056E+01
51	51	1	-3.25942E-01	6.94519E+06	1.05833E+04	1.99074E+01	1.07929E+00	0.00000E+00	4.81038E+06	1.99073E+01
52	52	1	1.65347E+00	6.93139E+06	1.05335E+04	1.99099E+01	1.07945E+00	0.00000E+00	4.81038E+06	1.99096E+01
53	53	1	6.66797E+00	6.36883E+06	1.04784E+04	1.99131E+01	1.07963E+00	0.00000E+00	4.81038E+06	1.99123E+01
54	54	1	1.26707E+01	6.35897E+06	1.04384E+04	1.99154E+01	1.07974E+00	0.00000E+00	4.81038E+06	1.99140E+01
55	55	1	0.00000E+00	5.86752E+06	0.00000E+00	1.98982E+01	1.07869E+00	0.00000E+00	4.95205E+06	1.98980E+01
56	56	1	0.00000E+00	5.84232E+06	0.00000E+00	1.98996E+01	1.07879E+00	0.00000E+00	4.95205E+06	1.98995E+01
57	57	1	3.03385E+00	5.83182E+06	1.09552E+04	1.99018E+01	1.07891E+00	0.00000E+00	4.95205E+06	1.99014E+01
58	58	1	-1.87273E+00	6.76337E+06	1.09106E+04	1.99033E+01	1.07903E+00	0.00000E+00	4.95205E+06	1.99032E+01
59	59	1	5.71764E+00	6.95531E+06	1.08687E+04	1.99057E+01	1.07913E+00	0.00000E+00	4.95205E+06	1.99050E+01
60	60	1	-1.20230E+00	6.94581E+06	1.08342E+04	1.99066E+01	1.07924E+00	0.00000E+00	4.95205E+06	1.99066E+01
61	61	1	3.78269E-01	6.93199E+06	1.07832E+04	1.99091E+01	1.07940E+00	0.00000E+00	4.95205E+06	1.99089E+01
62	62	1	6.68130E+00	6.36941E+06	1.07269E+04	1.99123E+01	1.07957E+00	0.00000E+00	4.95205E+06	1.99115E+01
63	63	1	3.72483E+00	6.35954E+06	1.06860E+04	1.99137E+01	1.07967E+00	0.00000E+00	4.95205E+06	1.99131E+01
64	64	1	0.00000E+00	5.86886E+06	0.00000E+00	1.98979E+01	1.07867E+00	0.00000E+00	4.83942E+06	1.98977E+01
65	65	1	0.00000E+00	5.84364E+06	0.00000E+00	1.98994E+01	1.07877E+00	0.00000E+00	4.83942E+06	1.98992E+01
66	66	1	-6.37136E+00	5.83313E+06	1.07608E+04	1.99007E+01	1.07889E+00	0.00000E+00	4.83942E+06	1.99010E+01
67	67	1	-2.96092E+00	6.76487E+06	1.07171E+04	1.99029E+01	1.07902E+00	0.00000E+00	4.83942E+06	1.99030E+01
68	68	1	-5.07070E+00	6.95675E+06	1.06756E+04	1.99045E+01	1.07912E+00	0.00000E+00	4.83941E+06	1.99047E+01
69	69	1	5.67286E+00	6.94606E+06	1.06375E+04	1.99074E+01	1.07925E+00	0.00000E+00	4.83941E+06	1.99067E+01
70	70	1	-1.77742E+00	6.93217E+06	1.05872E+04	1.99090E+01	1.07940E+00	0.00000E+00	4.83941E+06	1.99089E+01
71	71	1	-1.52444E+00	6.36945E+06	1.05314E+04	1.99117E+01	1.07958E+00	0.00000E+00	4.83941E+06	1.99115E+01
72	72	1	-9.25123E-02	6.36060E+06	1.04955E+04	1.99132E+01	1.07967E+00	0.00000E+00	4.83941E+06	1.99130E+01
73	73	1	-5.71531E+00	5.86418E+06	1.07131E+04	1.98992E+01	1.07879E+00	0.00000E+00	4.78147E+06	1.98995E+01
74	74	1	3.41541E+00	5.83904E+06	1.06816E+04	1.99016E+01	1.07890E+00	0.00000E+00	4.78146E+06	1.99011E+01
75	75	1	2.66035E-01	5.82863E+06	1.06392E+04	1.99032E+01	1.07903E+00	0.00000E+00	4.78146E+06	1.99030E+01

76	76	1	4.02624E+00	6.75976E+06	1.05960E+04	1.99056E+01	1.07916E+00	0.00000E+00	4.78146E+06	1.99051E+01
77	77	1	8.33866E-02	6.95162E+06	1.05551E+04	1.99069E+01	1.07926E+00	0.00000E+00	4.78146E+06	1.99068E+01
78	78	1	3.10203E+00	6.94219E+06	1.05217E+04	1.99091E+01	1.07939E+00	0.00000E+00	4.78146E+06	1.99086E+01
79	79	1	9.98519E+00	6.92729E+06	1.04680E+04	1.99123E+01	1.07956E+00	0.00000E+00	4.78146E+06	1.99112E+01
80	80	1	4.24339E+00	6.36512E+06	1.04131E+04	1.99145E+01	1.07974E+00	0.00000E+00	4.78146E+06	1.99139E+01
81	81	1	4.78919E+00	6.35637E+06	1.03776E+04	1.99160E+01	1.07983E+00	0.00000E+00	4.78146E+06	1.99153E+01

0 HEAT SLAB NUMBER	VOL NUM	GAP CONDUCTANCE (KCAL/M2/HR/C)	GAP DISTANCE (M)	CENT TEMP (C)	AVG. TEMP (C)	FUEL POWER (MW)
1	1	3.20000E+02	0.00000E+00	1.99079E+01	1.99058E+01	1.06832E-11
2	2	3.20000E+02	0.00000E+00	1.99100E+01	1.99076E+01	4.83752E-11
3	3	3.20000E+02	0.00000E+00	1.99129E+01	1.99101E+01	5.72016E-11
4	4	3.20000E+02	0.00000E+00	1.99158E+01	1.99129E+01	5.89214E-11
5	5	3.20000E+02	0.00000E+00	1.99179E+01	1.99149E+01	2.90991E-11
6	6	3.20000E+02	0.00000E+00	1.99208E+01	1.99175E+01	6.10394E-11
7	7	3.20000E+02	0.00000E+00	1.99244E+01	1.99208E+01	6.34556E-11
8	8	3.20000E+02	0.00000E+00	1.99280E+01	1.99241E+01	6.41314E-11
9	9	3.20000E+02	0.00000E+00	1.99301E+01	1.99260E+01	2.28547E-11
10	10	1.90000E+03	0.00000E+00	1.99027E+01	1.99012E+01	5.39757E-11
11	11	1.90000E+03	0.00000E+00	1.99047E+01	1.99031E+01	2.25317E-10
12	12	1.90000E+03	0.00000E+00	1.99071E+01	1.99052E+01	2.38530E-10
13	13	1.90000E+03	0.00000E+00	1.99099E+01	1.99076E+01	2.20303E-10
14	14	1.90000E+03	0.00000E+00	1.99119E+01	1.99096E+01	1.08347E-10
15	15	1.90000E+03	0.00000E+00	1.99144E+01	1.99119E+01	2.25897E-10
16	16	1.90000E+03	0.00000E+00	1.99174E+01	1.99144E+01	2.35782E-10
17	17	1.90000E+03	0.00000E+00	1.99209E+01	1.99177E+01	2.42703E-10
18	18	1.90000E+03	0.00000E+00	1.99231E+01	1.99197E+01	9.38965E-11
19	19	1.90000E+03	0.00000E+00	1.99025E+01	1.99011E+01	1.44994E-10
20	20	1.90000E+03	0.00000E+00	1.99046E+01	1.99029E+01	6.07559E-10
21	21	1.90000E+03	0.00000E+00	1.99070E+01	1.99051E+01	6.94840E-10
22	22	1.90000E+03	0.00000E+00	1.99096E+01	1.99075E+01	7.02629E-10
23	23	1.90000E+03	0.00000E+00	1.99117E+01	1.99094E+01	3.46852E-10
24	24	1.90000E+03	0.00000E+00	1.99141E+01	1.99115E+01	7.26546E-10
25	25	1.90000E+03	0.00000E+00	1.99173E+01	1.99145E+01	7.58770E-10
26	26	1.90000E+03	0.00000E+00	1.99208E+01	1.99176E+01	7.78378E-10
27	27	1.90000E+03	0.00000E+00	1.99229E+01	1.99196E+01	2.97683E-10
28	28	1.90000E+03	0.00000E+00	1.99017E+01	1.99003E+01	7.92124E-10
29	29	1.90000E+03	0.00000E+00	1.99037E+01	1.99021E+01	3.39293E-09
30	30	1.90000E+03	0.00000E+00	1.99060E+01	1.99042E+01	4.11168E-09
31	31	1.90000E+03	0.00000E+00	1.99085E+01	1.99065E+01	4.39364E-09
32	32	1.90000E+03	0.00000E+00	1.99107E+01	1.99085E+01	2.20376E-09
33	33	1.90000E+03	0.00000E+00	1.99133E+01	1.99108E+01	4.63834E-09
34	34	1.90000E+03	0.00000E+00	1.99164E+01	1.99137E+01	4.86062E-09
35	35	1.90000E+03	0.00000E+00	1.99199E+01	1.99168E+01	4.99627E-09
36	36	1.90000E+03	0.00000E+00	1.99217E+01	1.99185E+01	1.89986E-09
37	37	1.90000E+03	0.00000E+00	1.99042E+01	1.99026E+01	1.36705E-09
38	38	1.90000E+03	0.00000E+00	1.99063E+01	1.99045E+01	5.64720E-09
39	39	1.90000E+03	0.00000E+00	1.99089E+01	1.99068E+01	6.53578E-09
40	40	1.90000E+03	0.00000E+00	1.99115E+01	1.99091E+01	6.63008E-09
41	41	1.90000E+03	0.00000E+00	1.99136E+01	1.99110E+01	3.13234E-09
42	42	1.90000E+03	0.00000E+00	1.99161E+01	1.99134E+01	6.22530E-09
43	43	1.90000E+03	0.00000E+00	1.99196E+01	1.99165E+01	6.25993E-09
44	44	1.90000E+03	0.00000E+00	1.99231E+01	1.99198E+01	6.39667E-09
45	45	1.90000E+03	0.00000E+00	1.99251E+01	1.99216E+01	2.46210E-09
46	46	1.90000E+03	0.00000E+00	1.99028E+01	1.99013E+01	6.28050E-11
47	47	1.90000E+03	0.00000E+00	1.99048E+01	1.99031E+01	2.61277E-10
48	48	1.90000E+03	0.00000E+00	1.99072E+01	1.99053E+01	2.75005E-10
49	49	1.90000E+03	0.00000E+00	1.99098E+01	1.99077E+01	2.53297E-10
50	50	1.90000E+03	0.00000E+00	1.99119E+01	1.99096E+01	1.23540E-10
51	51	1.90000E+03	0.00000E+00	1.99143E+01	1.99117E+01	2.58730E-10
52	52	1.90000E+03	0.00000E+00	1.99174E+01	1.99146E+01	2.69327E-10
53	53	1.90000E+03	0.00000E+00	1.99210E+01	1.99178E+01	2.74695E-10
54	54	1.90000E+03	0.00000E+00	1.99232E+01	1.99198E+01	1.03276E-10
55	55	1.90000E+03	0.00000E+00	1.99020E+01	1.99006E+01	1.56500E-10
56	56	1.90000E+03	0.00000E+00	1.99040E+01	1.99024E+01	6.55392E-10
57	57	1.90000E+03	0.00000E+00	1.99064E+01	1.99046E+01	7.44489E-10
58	58	1.90000E+03	0.00000E+00	1.99089E+01	1.99069E+01	7.45426E-10
59	59	1.90000E+03	0.00000E+00	1.99108E+01	1.99087E+01	3.65924E-10
60	60	1.90000E+03	0.00000E+00	1.99132E+01	1.99107E+01	7.65136E-10
61	61	1.90000E+03	0.00000E+00	1.99163E+01	1.99136E+01	7.96651E-10
62	62	1.90000E+03	0.00000E+00	1.99197E+01	1.99167E+01	8.15687E-10
63	63	1.90000E+03	0.00000E+00	1.99217E+01	1.99186E+01	3.09821E-10
64	64	1.90000E+03	0.00000E+00	1.99018E+01	1.99003E+01	7.73484E-10
65	65	1.90000E+03	0.00000E+00	1.99038E+01	1.99022E+01	3.30875E-09
66	66	1.90000E+03	0.00000E+00	1.99062E+01	1.99043E+01	4.00048E-09
67	67	1.90000E+03	0.00000E+00	1.99086E+01	1.99066E+01	4.25088E-09
68	68	1.90000E+03	0.00000E+00	1.99107E+01	1.99086E+01	2.11880E-09
69	69	1.90000E+03	0.00000E+00	1.99134E+01	1.99109E+01	4.42928E-09
70	70	1.90000E+03	0.00000E+00	1.99164E+01	1.99137E+01	4.64528E-09
71	71	1.90000E+03	0.00000E+00	1.99199E+01	1.99168E+01	4.79427E-09
72	72	1.90000E+03	0.00000E+00	1.99217E+01	1.99185E+01	1.83473E-09
73	73	1.90000E+03	0.00000E+00	1.99042E+01	1.99025E+01	1.38221E-09
74	74	1.90000E+03	0.00000E+00	1.99064E+01	1.99045E+01	5.73709E-09
75	75	1.90000E+03	0.00000E+00	1.99088E+01	1.99068E+01	6.64383E-09
76	76	1.90000E+03	0.00000E+00	1.99114E+01	1.99091E+01	6.70385E-09
77	77	1.90000E+03	0.00000E+00	1.99136E+01	1.99111E+01	3.15231E-09
78	78	1.90000E+03	0.00000E+00	1.99161E+01	1.99134E+01	6.25261E-09
79	79	1.90000E+03	0.00000E+00	1.99195E+01	1.99164E+01	6.28583E-09
80	80	1.90000E+03	0.00000E+00	1.99231E+01	1.99198E+01	6.45681E-09
81	81	1.90000E+03	0.00000E+00	1.99250E+01	1.99214E+01	2.48533E-09

O SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	1	1.99079E+01	2	1.99078E+01	3	1.99077E+01	4	1.99075E+01	5	1.99072E+01	6	1.99068E+01	7	1.99063E+01
2	1	1.99100E+01	2	1.99099E+01	3	1.99098E+01	4	1.99095E+01	5	1.99092E+01	6	1.99088E+01	7	1.99082E+01
3	1	1.99129E+01	2	1.99128E+01	3	1.99126E+01	4	1.99124E+01	5	1.99120E+01	6	1.99115E+01	7	1.99109E+01
4	1	1.99158E+01	2	1.99157E+01	3	1.99155E+01	4	1.99152E+01	5	1.99148E+01	6	1.99143E+01	7	1.99137E+01
5	1	1.99179E+01	2	1.99178E+01	3	1.99177E+01	4	1.99173E+01	5	1.99169E+01	6	1.99164E+01	7	1.99157E+01
6	1	1.99208E+01	2	1.99207E+01	3	1.99205E+01	4	1.99202E+01	5	1.99197E+01	6	1.99191E+01	7	1.99184E+01
7	1	1.99244E+01	2	1.99243E+01	3	1.99241E+01	4	1.99237E+01	5	1.99232E+01	6	1.99225E+01	7	1.99218E+01
8	1	1.99280E+01	2	1.99280E+01	3	1.99277E+01	4	1.99273E+01	5	1.99268E+01	6	1.99261E+01	7	1.99253E+01
9	1	1.99301E+01	2	1.99300E+01	3	1.99298E+01	4	1.99294E+01	5	1.99288E+01	6	1.99281E+01	7	1.99272E+01
10	1	1.99027E+01	2	1.99027E+01	3	1.99026E+01	4	1.99024E+01	5	1.99022E+01	6	1.99020E+01	7	1.99016E+01
11	1	1.99047E+01	2	1.99047E+01	3	1.99046E+01	4	1.99044E+01	5	1.99042E+01	6	1.99039E+01	7	1.99035E+01
12	1	1.99071E+01	2	1.99071E+01	3	1.99070E+01	4	1.99068E+01	5	1.99065E+01	6	1.99062E+01	7	1.99058E+01
13	1	1.99099E+01	2	1.99098E+01	3	1.99097E+01	4	1.99094E+01	5	1.99091E+01	6	1.99087E+01	7	1.99082E+01
14	1	1.99119E+01	2	1.99118E+01	3	1.99117E+01	4	1.99114E+01	5	1.99111E+01	6	1.99107E+01	7	1.99102E+01
15	1	1.99144E+01	2	1.99143E+01	3	1.99142E+01	4	1.99139E+01	5	1.99135E+01	6	1.99131E+01	7	1.99125E+01
16	1	1.99174E+01	2	1.99173E+01	3	1.99171E+01	4	1.99168E+01	5	1.99164E+01	6	1.99159E+01	7	1.99152E+01
17	1	1.99209E+01	2	1.99209E+01	3	1.99207E+01	4	1.99203E+01	5	1.99199E+01	6	1.99193E+01	7	1.99186E+01
18	1	1.99231E+01	2	1.99230E+01	3	1.99228E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99206E+01
19	1	1.99025E+01	2	1.99025E+01	3	1.99024E+01	4	1.99023E+01	5	1.99021E+01	6	1.99018E+01	7	1.99015E+01
20	1	1.99046E+01	2	1.99046E+01	3	1.99045E+01	4	1.99043E+01	5	1.99041E+01	6	1.99038E+01	7	1.99034E+01
21	1	1.99070E+01	2	1.99069E+01	3	1.99068E+01	4	1.99066E+01	5	1.99064E+01	6	1.99060E+01	7	1.99056E+01
22	1	1.99096E+01	2	1.99096E+01	3	1.99094E+01	4	1.99092E+01	5	1.99089E+01	6	1.99085E+01	7	1.99081E+01
23	1	1.99117E+01	2	1.99116E+01	3	1.99115E+01	4	1.99113E+01	5	1.99109E+01	6	1.99105E+01	7	1.99100E+01
24	1	1.99141E+01	2	1.99141E+01	3	1.99139E+01	4	1.99137E+01	5	1.99133E+01	6	1.99129E+01	7	1.99123E+01
25	1	1.99173E+01	2	1.99173E+01	3	1.99171E+01	4	1.99168E+01	5	1.99164E+01	6	1.99159E+01	7	1.99153E+01
26	1	1.99208E+01	2	1.99208E+01	3	1.99206E+01	4	1.99202E+01	5	1.99198E+01	6	1.99192E+01	7	1.99185E+01
27	1	1.99229E+01	2	1.99228E+01	3	1.99226E+01	4	1.99223E+01	5	1.99218E+01	6	1.99212E+01	7	1.99205E+01
28	1	1.99017E+01	2	1.99016E+01	3	1.99015E+01	4	1.99014E+01	5	1.99012E+01	6	1.99010E+01	7	1.99007E+01
29	1	1.99037E+01	2	1.99037E+01	3	1.99036E+01	4	1.99034E+01	5	1.99032E+01	6	1.99029E+01	7	1.99025E+01
30	1	1.99060E+01	2	1.99060E+01	3	1.99058E+01	4	1.99057E+01	5	1.99054E+01	6	1.99051E+01	7	1.99047E+01
31	1	1.99085E+01	2	1.99085E+01	3	1.99084E+01	4	1.99081E+01	5	1.99078E+01	6	1.99075E+01	7	1.99070E+01
32	1	1.99107E+01	2	1.99106E+01	3	1.99105E+01	4	1.99103E+01	5	1.99100E+01	6	1.99096E+01	7	1.99091E+01
33	1	1.99133E+01	2	1.99132E+01	3	1.99131E+01	4	1.99128E+01	5	1.99125E+01	6	1.99120E+01	7	1.99115E+01
34	1	1.99164E+01	2	1.99164E+01	3	1.99162E+01	4	1.99159E+01	5	1.99155E+01	6	1.99151E+01	7	1.99145E+01
35	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99177E+01
36	1	1.99217E+01	2	1.99216E+01	3	1.99214E+01	4	1.99211E+01	5	1.99206E+01	6	1.99201E+01	7	1.99193E+01
37	1	1.99042E+01	2	1.99042E+01	3	1.99041E+01	4	1.99039E+01	5	1.99037E+01	6	1.99034E+01	7	1.99030E+01
38	1	1.99063E+01	2	1.99063E+01	3	1.99061E+01	4	1.99060E+01	5	1.99057E+01	6	1.99054E+01	7	1.99050E+01
39	1	1.99089E+01	2	1.99089E+01	3	1.99088E+01	4	1.99085E+01	5	1.99082E+01	6	1.99079E+01	7	1.99074E+01
40	1	1.99115E+01	2	1.99114E+01	3	1.99113E+01	4	1.99110E+01	5	1.99107E+01	6	1.99102E+01	7	1.99097E+01
41	1	1.99136E+01	2	1.99135E+01	3	1.99134E+01	4	1.99131E+01	5	1.99128E+01	6	1.99123E+01	7	1.99118E+01
42	1	1.99161E+01	2	1.99161E+01	3	1.99159E+01	4	1.99156E+01	5	1.99152E+01	6	1.99147E+01	7	1.99142E+01
43	1	1.99196E+01	2	1.99195E+01	3	1.99193E+01	4	1.99190E+01	5	1.99186E+01	6	1.99181E+01	7	1.99174E+01
44	1	1.99231E+01	2	1.99231E+01	3	1.99229E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99207E+01
45	1	1.99251E+01	2	1.99250E+01	3	1.99248E+01	4	1.99245E+01	5	1.99240E+01	6	1.99233E+01	7	1.99226E+01
46	1	1.99028E+01	2	1.99028E+01	3	1.99027E+01	4	1.99025E+01	5	1.99023E+01	6	1.99020E+01	7	1.99017E+01
47	1	1.99048E+01	2	1.99047E+01	3	1.99046E+01	4	1.99044E+01	5	1.99042E+01	6	1.99039E+01	7	1.99035E+01
48	1	1.99072E+01	2	1.99072E+01	3	1.99070E+01	4	1.99068E+01	5	1.99066E+01	6	1.99062E+01	7	1.99058E+01
49	1	1.99098E+01	2	1.99098E+01	3	1.99096E+01	4	1.99094E+01	5	1.99091E+01	6	1.99087E+01	7	1.99083E+01
50	1	1.99119E+01	2	1.99118E+01	3	1.99117E+01	4	1.99114E+01	5	1.99111E+01	6	1.99107E+01	7	1.99102E+01
51	1	1.99143E+01	2	1.99143E+01	3	1.99141E+01	4	1.99138E+01	5	1.99134E+01	6	1.99130E+01	7	1.99124E+01
52	1	1.99174E+01	2	1.99174E+01	3	1.99172E+01	4	1.99169E+01	5	1.99165E+01	6	1.99160E+01	7	1.99154E+01
53	1	1.99210E+01	2	1.99209E+01	3	1.99207E+01	4	1.99204E+01	5	1.99199E+01	6	1.99194E+01	7	1.99187E+01
54	1	1.99232E+01	2	1.99231E+01	3	1.99229E+01	4	1.99225E+01	5	1.99221E+01	6	1.99215E+01	7	1.99207E+01
55	1	1.99020E+01	2	1.99020E+01	3	1.99019E+01	4	1.99017E+01	5	1.99015E+01	6	1.99013E+01	7	1.99010E+01
56	1	1.99040E+01	2	1.99040E+01	3	1.99039E+01	4	1.99037E+01	5	1.99035E+01	6	1.99032E+01	7	1.99028E+01
57	1	1.99064E+01	2	1.99063E+01	3	1.99062E+01	4	1.99060E+01	5	1.99058E+01	6	1.99055E+01	7	1.99051E+01
58	1	1.99089E+01	2	1.99089E+01	3	1.99087E+01	4	1.99085E+01	5	1.99082E+01	6	1.99079E+01	7	1.99074E+01
59	1	1.99108E+01	2	1.99108E+01	3	1.99107E+01	4	1.99104E+01	5	1.99101E+01	6	1.99097E+01	7	1.99092E+01
60	1	1.99132E+01	2	1.99131E+01	3	1.99130E+01	4	1.99127E+01	5	1.99124E+01	6	1.99119E+01	7	1.99114E+01
61	1	1.99163E+01	2	1.99162E+01	3	1.99160E+01	4	1.99158E+01	5	1.99154E+01	6	1.99149E+01	7	1.99143E+01
62	1	1.99197E+01	2	1.99196E+01	3	1.99194E+01	4	1.99191E+01	5	1.99187E+01	6	1.99182E+01	7	1.99175E+01
63	1	1.99217E+01	2	1.99217E+01	3	1.99215E+01	4	1.99212E+01	5	1.99207E+01	6	1.99201E+01	7	1.99195E+01
64	1	1.99018E+01	2	1.99017E+01	3	1.99016E+01	4	1.99015E+01	5	1.99013E+01	6	1.99010E+01	7	1.99007E+01
65	1	1.99038E+01	2	1.99037E+01	3	1.99036E+01	4	1.99035E+01	5	1.99032E+01	6	1.99030E+01	7	1.99026E+01
66	1	1.99062E+01	2	1.99061E+01	3	1.99060E+01	4	1.99058E+01	5	1.99056E+01	6	1.99052E+01	7	1.99048E+01
67	1	1.99086E+01	2	1.99086E+01	3	1.99084E+01	4	1.99082E+01	5	1.99079E+01	6	1.99076E+01	7	1.99072E+01
68	1	1.99107E+01	2	1.99107E+01	3	1.99105E+01	4	1.99103E+01	5	1.99100E+01	6	1.99096E+01	7	1.99092E+01
69	1	1.99134E+01	2	1.99133E+01	3	1.99132E+01	4	1.99129E+01	5	1.99126E+01	6	1.99121E+01	7	1.99116E+01
70	1	1.99164E+01	2	1.99163E+01	3	1.99162E+01	4	1.99159E+01	5	1.99155E+01	6	1.99150E+01	7	1.99144E+01
71	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99176E+01
72	1	1.99217E+01	2	1.99216E+01	3	1.99214E+01	4	1.99211E+01	5	1.99206E+01	6	1.99201E+01	7	1.99194E+01
73	1	1.99042E+01	2	1.99041E+01	3	1.99040E+01	4	1.99039E+01	5	1.99036E+01	6	1.99033E+01	7	1.99030E+01
74	1	1.99064E+01	2	1.99063E+01	3	1.99062E+01	4	1.99060E+01	5	1.99058E+01	6	1.99054E+01	7	1.99050E+01
75	1	1.99088E+01	2	1.99088E+01	3	1.99087E+01	4	1.99085E+01	5	1.99082E+01	6	1.99078E+01	7	1.99074E+01
76	1	1.99114E+01	2	1.99114E+01	3	1.99112E+01	4	1.99110E+01	5	1.99106E+01	6	1.99102E+01	7	1.99097E+01
77	1	1.99136E+01	2	1.99136E+01	3	1.99134E+01	4	1.99132E+01	5	1.99128E+01	6	1.99124E+01	7	1.99118E+01
78	1	1.99161E+01	2	1.99161E+01	3	1.99159E+01	4	1.99156E+01	5	1.99152E+01	6	1.99147E+01	7	1.99141E+01
79	1	1.99195E+01	2	1.99194E+01	3	1.99193E+01	4	1.99189E+01	5	1.99185E+01	6	1.99179E+01	7	1.99173E+01
80	1	1.99231E+01	2	1.99230E+01	3	1.99228E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99207E+01
81	1	1.99250E+01	2	1.99250E+01	3	1.99248E+01	4	1.99244E+01	5	1.99239E+01	6	1.99233E+01	7	1.99225E+01

O SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	8	1.99058E+01	9	1.99052E+01	10	1.99046E+01	11	1.99040E+01	12	1.99040E+01	13	1.99037E+01	14	1.99026E+01
2	8	1.99076E+01	9	1.99069E+01	10	1.99062E+01	11	1.99055E+01	12	1.99055E+01	13	1.99052E+01	14	1.99041E+01
3	8	1.99103E+01	9	1.99095E+01	10	1.99086E+01	11	1.99076E+01	12	1.99076E+01	13	1.99071E+01	14	1.99057E+01
4	8	1.99130E+01	9	1.99121E+01	10	1.99112E+01	11	1.99102E+01	12	1.99102E+01	13	1.99095E+01	14	1.99081E+01
5	8	1.99150E+01	9	1.99141E+01	10	1.99131E+01	11	1.99121E+01	12	1.99120E+01	13	1.99114E+01	14	1.99098E+01
6	8	1.99176E+01	9	1.99166E+01	10	1.99157E+01	11	1.99148E+01	12	1.99147E+01	13	1.99143E+01	14	1.99130E+01
7	8	1.99209E+01	9	1.99199E+01	10	1.99187E+01	11	1.99175E+01	12	1.99174E+01	13	1.99167E+01	14	1.99151E+01
8	8	1.99243E+01	9	1.99232E+01	10	1.99220E+01	11	1.99206E+01	12	1.99206E+01	13	1.99197E+01	14	1.99180E+01
9	8	1.99262E+01	9	1.99250E+01	10	1.99237E+01	11	1.99223E+01	12	1.99223E+01	13	1.99215E+01	14	1.99202E+01
10	8	1.99013E+01	9	1.99008E+01	10	1.99004E+01	11	1.99000E+01	12	1.99000E+01	13	1.98998E+01	14	1.98986E+01
11	8	1.99031E+01	9	1.99027E+01	10	1.99022E+01	11	1.99017E+01	12	1.99017E+01	13	1.99015E+01	14	1.99004E+01
12	8	1.99053E+01	9	1.99048E+01	10	1.99042E+01	11	1.99035E+01	12	1.99035E+01	13	1.99031E+01	14	1.99016E+01
13	8	1.99077E+01	9	1.99070E+01	10	1.99064E+01	11	1.99058E+01	12	1.99058E+01	13	1.99055E+01	14	1.99042E+01
14	8	1.99096E+01	9	1.99090E+01	10	1.99083E+01	11	1.99077E+01	12	1.99077E+01	13	1.99074E+01	14	1.99061E+01
15	8	1.99119E+01	9	1.99112E+01	10	1.99104E+01	11	1.99097E+01	12	1.99097E+01	13	1.99094E+01	14	1.99081E+01
16	8	1.99145E+01	9	1.99137E+01	10	1.99129E+01	11	1.99119E+01	12	1.99119E+01	13	1.99113E+01	14	1.99100E+01
17	8	1.99178E+01	9	1.99169E+01	10	1.99158E+01	11	1.99147E+01	12	1.99147E+01	13	1.99141E+01	14	1.99126E+01
18	8	1.99198E+01	9	1.99189E+01	10	1.99179E+01	11	1.99167E+01	12	1.99167E+01	13	1.99161E+01	14	1.99149E+01
19	8	1.99011E+01	9	1.99007E+01	10	1.99002E+01	11	1.98999E+01	12	1.98999E+01	13	1.98997E+01	14	1.98985E+01
20	8	1.99030E+01	9	1.99025E+01	10	1.99020E+01	11	1.99015E+01	12	1.99015E+01	13	1.99013E+01	14	1.99003E+01
21	8	1.99052E+01	9	1.99046E+01	10	1.99041E+01	11	1.99036E+01	12	1.99036E+01	13	1.99033E+01	14	1.99021E+01
22	8	1.99076E+01	9	1.99070E+01	10	1.99064E+01	11	1.99058E+01	12	1.99058E+01	13	1.99056E+01	14	1.99045E+01
23	8	1.99094E+01	9	1.99087E+01	10	1.99081E+01	11	1.99074E+01	12	1.99074E+01	13	1.99072E+01	14	1.99060E+01
24	8	1.99117E+01	9	1.99109E+01	10	1.99101E+01	11	1.99091E+01	12	1.99091E+01	13	1.99086E+01	14	1.99073E+01
25	8	1.99146E+01	9	1.99138E+01	10	1.99129E+01	11	1.99119E+01	12	1.99119E+01	13	1.99114E+01	14	1.99102E+01
26	8	1.99177E+01	9	1.99168E+01	10	1.99158E+01	11	1.99150E+01	12	1.99150E+01	13	1.99146E+01	14	1.99133E+01
27	8	1.99197E+01	9	1.99188E+01	10	1.99178E+01	11	1.99166E+01	12	1.99166E+01	13	1.99160E+01	14	1.99146E+01
28	8	1.99003E+01	9	1.99000E+01	10	1.98995E+01	11	1.98990E+01	12	1.98990E+01	13	1.98986E+01	14	1.98972E+01
29	8	1.99021E+01	9	1.99017E+01	10	1.99012E+01	11	1.99008E+01	12	1.99008E+01	13	1.99006E+01	14	1.98993E+01
30	8	1.99043E+01	9	1.99038E+01	10	1.99032E+01	11	1.99027E+01	12	1.99027E+01	13	1.99025E+01	14	1.99012E+01
31	8	1.99065E+01	9	1.99060E+01	10	1.99054E+01	11	1.99048E+01	12	1.99048E+01	13	1.99046E+01	14	1.99035E+01
32	8	1.99086E+01	9	1.99080E+01	10	1.99073E+01	11	1.99067E+01	12	1.99067E+01	13	1.99064E+01	14	1.99051E+01
33	8	1.99109E+01	9	1.99102E+01	10	1.99095E+01	11	1.99086E+01	12	1.99086E+01	13	1.99081E+01	14	1.99067E+01
34	8	1.99138E+01	9	1.99130E+01	10	1.99122E+01	11	1.99115E+01	12	1.99115E+01	13	1.99111E+01	14	1.99100E+01
35	8	1.99169E+01	9	1.99161E+01	10	1.99152E+01	11	1.99141E+01	12	1.99141E+01	13	1.99135E+01	14	1.99121E+01
36	8	1.99185E+01	9	1.99176E+01	10	1.99167E+01	11	1.99158E+01	12	1.99158E+01	13	1.99154E+01	14	1.99143E+01
37	8	1.99026E+01	9	1.99021E+01	10	1.99016E+01	11	1.99012E+01	12	1.99012E+01	13	1.99010E+01	14	1.98997E+01
38	8	1.99045E+01	9	1.99040E+01	10	1.99034E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99014E+01
39	8	1.99069E+01	9	1.99063E+01	10	1.99057E+01	11	1.99049E+01	12	1.99049E+01	13	1.99044E+01	14	1.99031E+01
40	8	1.99091E+01	9	1.99085E+01	10	1.99078E+01	11	1.99072E+01	12	1.99072E+01	13	1.99069E+01	14	1.99056E+01
41	8	1.99112E+01	9	1.99104E+01	10	1.99096E+01	11	1.99086E+01	12	1.99086E+01	13	1.99081E+01	14	1.99068E+01
42	8	1.99135E+01	9	1.99127E+01	10	1.99119E+01	11	1.99109E+01	12	1.99109E+01	13	1.99104E+01	14	1.99090E+01
43	8	1.99166E+01	9	1.99157E+01	10	1.99147E+01	11	1.99136E+01	12	1.99136E+01	13	1.99130E+01	14	1.99115E+01
44	8	1.99199E+01	9	1.99190E+01	10	1.99180E+01	11	1.99168E+01	12	1.99168E+01	13	1.99162E+01	14	1.99148E+01
45	8	1.99217E+01	9	1.99207E+01	10	1.99197E+01	11	1.99184E+01	12	1.99184E+01	13	1.99178E+01	14	1.99165E+01
46	8	1.99013E+01	9	1.99009E+01	10	1.99004E+01	11	1.99000E+01	12	1.99000E+01	13	1.98998E+01	14	1.98986E+01
47	8	1.99031E+01	9	1.99026E+01	10	1.99021E+01	11	1.99017E+01	12	1.99017E+01	13	1.99014E+01	14	1.99003E+01
48	8	1.99054E+01	9	1.99048E+01	10	1.99043E+01	11	1.99037E+01	12	1.99037E+01	13	1.99035E+01	14	1.99022E+01
49	8	1.99078E+01	9	1.99072E+01	10	1.99065E+01	11	1.99057E+01	12	1.99057E+01	13	1.99053E+01	14	1.99041E+01
50	8	1.99097E+01	9	1.99091E+01	10	1.99084E+01	11	1.99075E+01	12	1.99075E+01	13	1.99070E+01	14	1.99057E+01
51	8	1.99117E+01	9	1.99110E+01	10	1.99102E+01	11	1.99093E+01	12	1.99093E+01	13	1.99088E+01	14	1.99074E+01
52	8	1.99147E+01	9	1.99139E+01	10	1.99130E+01	11	1.99120E+01	12	1.99120E+01	13	1.99113E+01	14	1.99099E+01
53	8	1.99179E+01	9	1.99171E+01	10	1.99161E+01	11	1.99150E+01	12	1.99150E+01	13	1.99144E+01	14	1.99131E+01
54	8	1.99199E+01	9	1.99189E+01	10	1.99179E+01	11	1.99170E+01	12	1.99170E+01	13	1.99166E+01	14	1.99154E+01
55	8	1.99006E+01	9	1.99002E+01	10	1.98998E+01	11	1.98995E+01	12	1.98995E+01	13	1.98993E+01	14	1.98982E+01
56	8	1.99024E+01	9	1.99020E+01	10	1.99015E+01	11	1.99011E+01	12	1.99011E+01	13	1.99009E+01	14	1.98996E+01
57	8	1.99046E+01	9	1.99041E+01	10	1.99036E+01	11	1.99031E+01	12	1.99031E+01	13	1.99029E+01	14	1.99018E+01
58	8	1.99069E+01	9	1.99064E+01	10	1.99058E+01	11	1.99050E+01	12	1.99050E+01	13	1.99046E+01	14	1.99033E+01
59	8	1.99087E+01	9	1.99081E+01	10	1.99075E+01	11	1.99069E+01	12	1.99069E+01	13	1.99067E+01	14	1.99057E+01
60	8	1.99108E+01	9	1.99101E+01	10	1.99093E+01	11	1.99084E+01	12	1.99084E+01	13	1.99079E+01	14	1.99066E+01
61	8	1.99137E+01	9	1.99129E+01	10	1.99121E+01	11	1.99111E+01	12	1.99111E+01	13	1.99106E+01	14	1.99091E+01
62	8	1.99168E+01	9	1.99160E+01	10	1.99151E+01	11	1.99140E+01	12	1.99140E+01	13	1.99135E+01	14	1.99123E+01
63	8	1.99187E+01	9	1.99178E+01	10	1.99168E+01	11	1.99157E+01	12	1.99157E+01	13	1.99150E+01	14	1.99137E+01
64	8	1.99004E+01	9	1.99000E+01	10	1.98995E+01	11	1.98992E+01	12	1.98992E+01	13	1.98991E+01	14	1.98979E+01
65	8	1.99022E+01	9	1.99017E+01	10	1.99013E+01	11	1.99008E+01	12	1.99008E+01	13	1.99006E+01	14	1.98994E+01
66	8	1.99044E+01	9	1.99039E+01	10	1.99033E+01	11	1.99026E+01	12	1.99026E+01	13	1.99022E+01	14	1.99007E+01
67	8	1.99067E+01	9	1.99061E+01	10	1.99055E+01	11	1.99048E+01	12	1.99048E+01	13	1.99043E+01	14	1.99029E+01
68	8	1.99086E+01	9	1.99081E+01	10	1.99074E+01	11	1.99066E+01	12	1.99066E+01	13	1.99061E+01	14	1.99045E+01
69	8	1.99109E+01	9	1.99102E+01	10	1.99095E+01	11	1.99088E+01	12	1.99088E+01	13	1.99085E+01	14	1.99074E+01
70	8	1.99137E+01	9	1.99130E+01	10	1.99121E+01	11	1.99112E+01	12	1.99112E+01	13	1.99105E+01	14	1.99090E+01
71	8	1.99169E+01	9	1.99160E+01	10	1.99151E+01	11	1.99140E+01	12	1.99140E+01	13	1.99134E+01	14	1.99117E+01
72	8	1.99186E+01	9	1.99177E+01	10	1.99167E+01	11	1.99156E+01	12	1.99156E+01	13	1.99149E+01	14	1.99132E+01
73	8	1.99026E+01	9	1.99022E+01	10	1.99017E+01	11	1.99010E+01	12	1.99010E+01	13	1.99006E+01	14	1.98992E+01
74	8	1.99045E+01	9	1.99040E+01	10	1.99035E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99016E+01
75	8	1.99069E+01	9	1.99063E+01	10	1.99057E+01	11	1.99049E+01	12	1.99049E+01	13	1.99045E+01	14	1.99032E+01
76	8	1.99092E+01	9	1.99085E+01	10	1.99079E+01	11	1.99072E+01	12	1.99072E+01	13	1.99070E+01	14	1.99056E+01
77	8	1.99112E+01	9	1.99105E+01	10	1.99096E+01	11	1.99087E+01	12	1.99087E+01	13	1.99082E+01	14	1.99069E+01
78	8	1.99135E+01	9	1.99127E+01	10	1.99119E+01	11	1.99109E+01	12	1.99109E+01	13	1.99104E+01	14	1.99091E+01
79	8	1.99165E+01	9	1.99156E+01	10	1.99147E+01	11	1.99139E+01	12	1.99139E+01	13	1.99135E+01	14	1.99123E+01
80	8	1.99199E+01	9	1.99189E+01	10	1.99179E+01	11	1.99167E+01	12	1.99167E+01	13	1.99160E+01	14	1.99145E+01
81	8	1.99216E+01	9	1.99205E+01	10	1.99193E+01	11	1.99181E+01	12	1.99181E+01	13	1.99175E+01	14	1.99160E+01

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE

ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-10-18

0 CPU TIME = 255.15

OJUNCTION NUMBER	CONNECTING VOLUMES	JCT. FLOW (TON/HR)	JCT. ENTH (KC/KG)	JCT. SPVL (M**3/KG)	PRESSURE DIFFERENTIALS STAG ATA	ELEV ATA	FRIC ATA	ACCL ATA
1	82 TO 10	2.24435E+01	1.99994E+01	1.00147E-03	7.08665E-01	-9.89207E-02	-6.09683E-01	6.13449E-05
2	1 TO 20	2.24435E+01	2.00002E+01	1.00148E-03	6.94871E-02	-3.69568E-02	-3.25457E-02	-1.54084E-05
3	2 TO 30	2.24435E+01	1.99999E+01	1.00149E-03	1.13230E-01	-4.92755E-02	-6.39906E-02	-3.65451E-05
4	3 TO 40	2.24435E+01	1.99995E+01	1.00149E-03	1.04528E-01	-4.92752E-02	-5.52584E-02	-5.19234E-06
5	4 TO 50	2.24435E+01	1.99993E+01	1.00150E-03	9.60550E-02	-3.69563E-02	-5.90895E-02	9.20752E-06
6	5 TO 60	2.24435E+01	1.99993E+01	1.00150E-03	8.73245E-02	-3.69560E-02	-5.03483E-02	2.01467E-05
7	6 TO 70	2.24435E+01	1.99994E+01	1.00151E-03	1.22306E-01	-4.92745E-02	-7.30671E-02	-3.59382E-05
8	7 TO 80	2.24435E+01	1.99993E+01	1.00151E-03	1.22432E-01	-4.92742E-02	-7.31548E-02	2.84928E-06
9	8 TO 90	2.24435E+01	1.99995E+01	1.00152E-03	7.86305E-02	-3.69555E-02	-4.17064E-02	-3.14349E-05
10	9 TO 910	2.24435E+01	1.99996E+01	1.00152E-03	6.70988E-01	-5.17090E-01	-1.53949E-01	-5.04698E-05
11	83 TO 100	1.84283E+02	1.99969E+01	1.00147E-03	6.79607E-01	-9.89208E-02	-5.80604E-01	8.25502E-05
12	10 TO 110	1.84283E+02	1.99976E+01	1.00148E-03	8.18700E-02	-3.69569E-02	-4.49624E-02	-4.92766E-05
13	11 TO 120	1.84283E+02	1.99971E+01	1.00149E-03	1.09274E-01	-4.92756E-02	-6.00062E-02	-8.19255E-06
14	12 TO 130	1.84283E+02	1.99965E+01	1.00149E-03	1.09389E-01	-4.92753E-02	-6.00821E-02	3.17117E-05
15	13 TO 140	1.84283E+02	1.99960E+01	1.00150E-03	1.02065E-01	-3.69564E-02	-6.51191E-02	-1.07341E-05
16	14 TO 150	1.84283E+02	1.99958E+01	1.00150E-03	8.21177E-02	-3.69560E-02	-4.51747E-02	-1.30214E-05
17	15 TO 160	1.84283E+02	1.99955E+01	1.00151E-03	1.19541E-01	-4.92746E-02	-7.03040E-02	-3.79093E-05
18	16 TO 170	1.84283E+02	1.99951E+01	1.00151E-03	1.29689E-01	-4.92743E-02	-8.04046E-02	1.03773E-05
19	17 TO 180	1.84283E+02	1.99948E+01	1.00152E-03	9.22652E-02	-3.69556E-02	-5.53564E-02	-4.67801E-05
20	18 TO 920	1.84283E+02	1.99948E+01	1.00152E-03	6.73828E-01	-5.17091E-01	-1.56794E-01	-5.63503E-05
21	84 TO 190	5.06977E+02	1.99968E+01	1.00147E-03	6.78070E-01	-9.89208E-02	-5.29069E-01	8.10745E-05
22	19 TO 200	5.06977E+02	1.99976E+01	1.00148E-03	8.19070E-02	-3.69569E-02	-4.49995E-02	-4.94306E-05
23	20 TO 210	5.06977E+02	1.99970E+01	1.00149E-03	1.09344E-01	-4.92756E-02	-6.00551E-02	1.29541E-05
24	21 TO 220	5.06977E+02	1.99965E+01	1.00149E-03	1.09388E-01	-4.92753E-02	-6.01310E-02	-1.86028E-05
25	22 TO 230	5.06977E+02	1.99960E+01	1.00150E-03	1.02163E-01	-3.69564E-02	-6.51777E-02	2.87918E-05
26	23 TO 240	5.06977E+02	1.99958E+01	1.00150E-03	8.21126E-02	-3.69560E-02	-4.52120E-02	-5.53824E-05
27	24 TO 250	5.06977E+02	1.99953E+01	1.00151E-03	1.19620E-01	-4.92746E-02	-7.03637E-02	-1.81956E-05
28	25 TO 260	5.06977E+02	1.99951E+01	1.00151E-03	1.29812E-01	-4.92743E-02	-8.04751E-02	6.21404E-05
29	26 TO 270	5.06977E+02	1.99949E+01	1.00152E-03	9.22883E-02	-3.69556E-02	-5.54044E-02	-7.17242E-05
30	27 TO 930	5.06977E+02	1.99948E+01	1.00152E-03	6.75112E-01	-5.17091E-01	-1.58090E-01	-6.87548E-05
31	85 TO 280	2.88764E+03	1.99966E+01	1.00147E-03	6.74727E-01	-9.89209E-02	-5.75762E-01	4.38429E-05
32	28 TO 290	2.88764E+03	1.99973E+01	1.00148E-03	8.24792E-02	-3.69569E-02	-4.55081E-02	1.41450E-05
33	29 TO 300	2.88764E+03	1.99967E+01	1.00149E-03	1.09999E-01	-4.92756E-02	-6.07345E-02	-1.13893E-05
34	30 TO 310	2.88764E+03	1.99961E+01	1.00149E-03	1.10071E-01	-4.92754E-02	-6.08120E-02	-1.62625E-05
35	31 TO 320	2.88764E+03	1.99956E+01	1.00150E-03	1.02767E-01	-3.69564E-02	-6.57913E-02	1.97848E-05
36	32 TO 330	2.88764E+03	1.99954E+01	1.00150E-03	9.27057E-02	-3.69561E-02	-5.57955E-02	-4.58092E-05
37	33 TO 340	2.88764E+03	1.99949E+01	1.00151E-03	1.20411E-01	-4.92746E-02	-7.11071E-02	2.90238E-05
38	34 TO 350	2.88764E+03	1.99947E+01	1.00151E-03	1.30504E-01	-4.92743E-02	-8.12716E-02	-4.23401E-05
39	35 TO 360	2.88764E+03	1.99943E+01	1.00152E-03	8.29079E-02	-3.69556E-02	-4.59083E-02	4.39925E-05
40	36 TO 940	2.88764E+03	1.99943E+01	1.00152E-03	6.86607E-01	-5.17091E-01	-1.69650E-01	-1.34301E-04
41	86 TO 370	3.52610E+03	1.99973E+01	1.00147E-03	6.93541E-01	-9.89207E-02	-5.94535E-01	8.55829E-05
42	37 TO 380	3.52610E+03	1.99981E+01	1.00148E-03	8.15219E-02	-3.69568E-02	-4.46098E-02	-4.47656E-05
43	38 TO 390	3.52610E+03	1.99976E+01	1.00149E-03	1.08782E-01	-4.92755E-02	-5.95351E-02	-2.88207E-05
44	39 TO 400	3.52610E+03	1.99970E+01	1.00149E-03	1.08925E-01	-4.92752E-02	-5.96104E-02	3.93069E-05
45	40 TO 410	3.52610E+03	1.99967E+01	1.00150E-03	1.01557E-01	-3.69563E-02	-6.46389E-02	-3.84384E-05
46	41 TO 420	3.52610E+03	1.99964E+01	1.00150E-03	8.17577E-02	-3.69560E-02	-4.48204E-02	-1.87022E-05
47	42 TO 430	3.52610E+03	1.99961E+01	1.00151E-03	1.28997E-01	-4.92745E-02	-7.97132E-02	9.64206E-06
48	43 TO 440	3.52610E+03	1.99959E+01	1.00151E-03	1.29060E-01	-4.92742E-02	-7.98112E-02	-2.54188E-05
49	44 TO 450	3.52609E+03	1.99958E+01	1.00152E-03	8.19589E-02	-3.69555E-02	-4.49988E-02	4.57696E-06
50	45 TO 950	3.52609E+03	1.99958E+01	1.00152E-03	6.61519E-01	-5.17091E-01	-1.44514E-01	-8.55721E-05
51	87 TO 460	1.84297E+02	1.99969E+01	1.00147E-03	6.79685E-01	-9.89208E-02	-5.80685E-01	7.98893E-05
52	46 TO 470	1.84297E+02	1.99976E+01	1.00148E-03	8.18824E-02	-3.69569E-02	-4.49685E-02	-4.29743E-05
53	47 TO 480	1.84297E+02	1.99971E+01	1.00149E-03	1.09299E-01	-4.92756E-02	-6.00143E-02	9.32525E-06
54	48 TO 490	1.84297E+02	1.99965E+01	1.00149E-03	1.09316E-01	-4.92753E-02	-6.00902E-02	-4.93405E-05
55	49 TO 500	1.84297E+02	1.99961E+01	1.00150E-03	1.02109E-01	-3.69564E-02	-6.51281E-02	2.42258E-05
56	50 TO 510	1.84297E+02	1.99958E+01	1.00150E-03	8.21347E-02	-3.69560E-02	-4.51808E-02	-2.10305E-06
57	51 TO 520	1.84297E+02	1.99954E+01	1.00151E-03	1.19580E-01	-4.92746E-02	-7.03136E-02	-8.04698E-06
58	52 TO 530	1.84297E+02	1.99951E+01	1.00151E-03	1.29660E-01	-4.92743E-02	-8.04157E-02	-2.96452E-05
59	53 TO 540	1.84297E+02	1.99950E+01	1.00152E-03	9.23703E-02	-3.69556E-02	-5.53640E-02	5.07225E-05
60	54 TO 960	1.84297E+02	1.99950E+01	1.00152E-03	6.73778E-01	-5.17091E-01	-1.56817E-01	-1.29825E-04
61	88 TO 550	4.98027E+02	1.99966E+01	1.00147E-03	6.81879E-01	-9.89208E-02	-5.82874E-01	8.37072E-05
62	55 TO 560	4.98027E+02	1.99973E+01	1.00148E-03	8.22727E-02	-3.69569E-02	-4.53508E-02	-3.49774E-05
63	56 TO 570	4.98027E+02	1.99967E+01	1.00149E-03	1.09787E-01	-4.92756E-02	-6.05260E-02	-1.46987E-05
64	57 TO 580	4.98027E+02	1.99961E+01	1.00149E-03	1.09854E-01	-4.92753E-02	-6.06052E-02	-2.67353E-05
65	58 TO 590	4.98027E+02	1.99956E+01	1.00150E-03	1.01817E-01	-3.69564E-02	-6.48340E-02	2.68050E-05
66	59 TO 600	4.98027E+02	1.99954E+01	1.00150E-03	8.25082E-02	-3.69561E-02	-4.55718E-02	-1.96260E-05
67	60 TO 610	4.98027E+02	1.99948E+01	1.00151E-03	1.19755E-01	-4.92746E-02	-7.04958E-02	-1.52814E-05
68	61 TO 620	4.98026E+02	1.99945E+01	1.00151E-03	1.29522E-01	-4.92743E-02	-8.02601E-02	-1.21672E-05
69	62 TO 630	4.98026E+02	1.99943E+01	1.00152E-03	9.23971E-02	-3.69556E-02	-5.54204E-02	2.11171E-05
70	63 TO 970	4.98026E+02	1.99942E+01	1.00152E-03	6.76220E-01	-5.17091E-01	-1.59237E-01	-1.07401E-04
71	89 TO 640	2.87384E+03	1.99966E+01	1.00147E-03	6.73891E-01	-9.89208E-02	-5.74885E-01	8.45067E-05
72	64 TO 650	2.87384E+03	1.99974E+01	1.00148E-03	8.24014E-02	-3.69569E-02	-4.54844E-02	-3.98202E-05
73	65 TO 660	2.87384E+03	1.99967E+01	1.00149E-03	1.09957E-01	-4.92756E-02	-6.07024E-02	-2.11530E-05
74	66 TO 670	2.87384E+03	1.99961E+01	1.00149E-03	1.10049E-01	-4.92754E-02	-6.07793E-02	-6.17164E-06
75	67 TO 680	2.87384E+03	1.99956E+01	1.00150E-03	1.02880E-01	-3.69564E-02	-6.59127E-02	1.08791E-05
76	68 TO 690	2.87384E+03	1.99954E+01	1.00150E-03	9.28153E-02	-3.69561E-02	-5.58435E-02	1.56916E-05
77	69 TO 700	2.87384E+03	1.99950E+01	1.00151E-03	1.20386E-01	-4.92746E-02	-7.11464E-02	-3.46399E-05
78	70 TO 710	2.87384E+03	1.99946E+01	1.00151E-03	1.30659E-01	-4.92743E-02	-8.13834E-02	1.55226E-06
79	71 TO 720	2.87384E+03	1.99943E+01	1.00152E-03	8.28355E-02	-3.69556E-02	-4.58822E-02	-2.29950E-06
80	72 TO 980	2.87384E+03	1.99942E+01	1.00152E-03	6.76480E-01	-5.17091E-01	-1.59496E-01	-1.07587E-04
81	90 TO 730	3.52639E+03	1.99973E+01	1.00147E-03	6.83660E-01	-9.89206E-02	-5.84698E-01	4.19805E-05
82	73 TO 740	3.52639E+03	1.99980E+01	1.00148E-03	8.15741E-02	-3.69568E-02	-4.46144E-02	2.96561E-06
83	74 TO 750	3.52639E+03	1.99976E+01	1.00149E-03	1.08777E-01	-4.92755E-02	-5.95412E-02	-3.96629E-05
84	75 TO 760	3.52638E+03	1.99971E+01	1.00149E-03	1.08939E-01	-4.92752E-02	-5.96165E-02	4.77172E-05
85	76 TO 770	3.52638E+03	1.99967E+01	1.00150E-03	1.01552E-01	-3.69563E-02	-6.46448E-02	-4.88240E-05

86	77 TO	78□	3.52638E+03	1.99965E+01	1.00150E-03	8.17737E-02	-3.69560E-02	-4.48250E-02	-7.29239E-06
87	78 TO	79□	3.52638E+03	1.99962E+01	1.00151E-03	1.29038E-01	-4.92745E-02	-7.97206E-02	4.28371E-05
88	79 TO	80□	3.52638E+03	1.99960E+01	1.00151E-03	1.29045E-01	-4.92742E-02	-7.98187E-02	-4.76283E-05
89	80 TO	81□	3.52638E+03	1.99958E+01	1.00152E-03	8.19604E-02	-3.69555E-02	-4.50034E-02	1.39831E-06
90	81 TO	99□	3.52638E+03	1.99957E+01	1.00152E-03	6.61523E-01	-5.17091E-01	-1.44529E-01	-9.66883E-05
91	102 TO	82□	2.24435E+01	1.99987E+01	1.00142E-03	7.39777E-01	-8.66017E-02	-6.53205E-01	-3.00524E-05
92	91 TO	103□	2.24433E+01	2.00215E+01	1.00157E-03	7.38995E-01	-5.94656E-01	-1.44196E-01	1.42753E-04
93	100 TO	83□	1.84283E+02	1.99987E+01	1.00142E-03	7.32329E-01	-8.66018E-02	-6.45743E-01	-1.56795E-05
94	92 TO	101□	1.84281E+02	2.00150E+01	1.00157E-03	7.40114E-01	-5.94657E-01	-1.45313E-01	1.44577E-04
95	100 TO	84□	5.06977E+02	1.99987E+01	1.00142E-03	7.30552E-01	-8.66018E-02	-6.43965E-01	-1.53968E-05
96	93 TO	101□	5.06973E+02	2.00153E+01	1.00157E-03	7.41398E-01	-5.94657E-01	-1.46597E-01	1.43815E-04
97	100 TO	85□	2.88764E+03	1.99987E+01	1.00142E-03	7.03858E-01	-8.66018E-02	-6.17270E-01	-1.38405E-05
98	94 TO	101□	2.88761E+03	2.00141E+01	1.00156E-03	7.42988E-01	-5.94657E-01	-1.48186E-01	1.44421E-04
99	100 TO	86□	3.52610E+03	1.99987E+01	1.00142E-03	7.28548E-01	-8.66017E-02	-6.41965E-01	-1.83352E-05
100	95 TO	101□	3.52607E+03	2.00114E+01	1.00156E-03	7.27907E-01	-5.94657E-01	-1.33097E-01	1.52120E-04
101	102 TO	87□	1.84297E+02	1.99987E+01	1.00142E-03	7.32417E-01	-8.66018E-02	-6.45830E-01	-1.55761E-05
102	96 TO	103□	1.84295E+02	2.00150E+01	1.00157E-03	7.40136E-01	-5.94657E-01	-1.45335E-01	1.44531E-04
103	102 TO	88□	4.98027E+02	1.99987E+01	1.00142E-03	7.22466E-01	-8.66018E-02	-6.35878E-01	-1.38409E-05
104	97 TO	103□	4.98022E+02	2.00136E+01	1.00156E-03	7.43579E-01	-5.94657E-01	-1.48778E-01	1.44283E-04
105	102 TO	89□	2.87384E+03	1.99987E+01	1.00142E-03	7.05221E-01	-8.66018E-02	-6.18633E-01	-1.39727E-05
106	98 TO	103□	2.87382E+03	2.00144E+01	1.00156E-03	7.52844E-01	-5.94657E-01	-1.58043E-01	1.44217E-04
107	102 TO	90□	3.52639E+03	1.99987E+01	1.00142E-03	7.38586E-01	-8.66017E-02	-6.52003E-01	-1.83640E-05
108	99 TO	103□	3.52636E+03	2.00114E+01	1.00156E-03	7.27922E-01	-5.94657E-01	-1.33112E-01	1.52683E-04
109	0 TO	100□	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
110	0 TO	102□	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE

ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-10-18

0 CPU TIME = 255.17

OJUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
1	1.30427E+00	1.30427E+00	2.24435E+01	0.00000E+00	2.00027E+01	0.00000E+00	2.00027E+01
2	1.30431E+00	1.30431E+00	2.24435E+01	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
3	1.30431E+00	1.30431E+00	2.24435E+01	0.00000E+00	2.00006E+01	0.00000E+00	2.00006E+01
4	1.30432E+00	1.30432E+00	2.24435E+01	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
5	1.30433E+00	1.30433E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
6	1.30433E+00	1.30433E+00	2.24435E+01	0.00000E+00	1.99998E+01	0.00000E+00	1.99998E+01
7	1.30434E+00	1.30434E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
8	1.30435E+00	1.30435E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
9	1.30435E+00	1.30435E+00	2.24435E+01	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
10	1.30436E+00	1.30436E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
11	1.33866E+00	1.33866E+00	1.84283E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
12	1.33870E+00	1.33870E+00	1.84283E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
13	1.33871E+00	1.33871E+00	1.84283E+02	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
14	1.33872E+00	1.33872E+00	1.84283E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
15	1.33872E+00	1.33872E+00	1.84283E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
16	1.33873E+00	1.33873E+00	1.84283E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
17	1.33873E+00	1.33873E+00	1.84283E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
18	1.33874E+00	1.33874E+00	1.84283E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
19	1.33875E+00	1.33875E+00	1.84283E+02	0.00000E+00	1.99956E+01	0.00000E+00	1.99956E+01
20	1.33876E+00	1.33876E+00	1.84283E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
21	1.33919E+00	1.33919E+00	5.06977E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
22	1.33923E+00	1.33923E+00	5.06977E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
23	1.33923E+00	1.33923E+00	5.06977E+02	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
24	1.33924E+00	1.33924E+00	5.06977E+02	0.00000E+00	1.99972E+01	0.00000E+00	1.99972E+01
25	1.33925E+00	1.33925E+00	5.06977E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
26	1.33925E+00	1.33925E+00	5.06977E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
27	1.33926E+00	1.33926E+00	5.06977E+02	0.00000E+00	1.99961E+01	0.00000E+00	1.99961E+01
28	1.33927E+00	1.33927E+00	5.06977E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
29	1.33927E+00	1.33927E+00	5.06977E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
30	1.33928E+00	1.33928E+00	5.06977E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
31	1.35331E+00	1.35331E+00	2.88764E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
32	1.35335E+00	1.35335E+00	2.88764E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
33	1.35335E+00	1.35335E+00	2.88764E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
34	1.35336E+00	1.35336E+00	2.88764E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
35	1.35337E+00	1.35337E+00	2.88764E+03	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
36	1.35337E+00	1.35337E+00	2.88764E+03	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
37	1.35338E+00	1.35338E+00	2.88764E+03	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
38	1.35339E+00	1.35339E+00	2.88764E+03	0.00000E+00	1.99954E+01	0.00000E+00	1.99954E+01
39	1.35340E+00	1.35340E+00	2.88764E+03	0.00000E+00	1.99951E+01	0.00000E+00	1.99951E+01
40	1.35340E+00	1.35340E+00	2.88764E+03	0.00000E+00	1.99948E+01	0.00000E+00	1.99948E+01
41	1.33061E+00	1.33061E+00	3.52610E+03	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
42	1.33065E+00	1.33065E+00	3.52610E+03	0.00000E+00	1.99986E+01	0.00000E+00	1.99986E+01
43	1.33065E+00	1.33065E+00	3.52610E+03	0.00000E+00	1.99984E+01	0.00000E+00	1.99984E+01
44	1.33066E+00	1.33066E+00	3.52610E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
45	1.33067E+00	1.33067E+00	3.52610E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
46	1.33067E+00	1.33067E+00	3.52610E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
47	1.33068E+00	1.33068E+00	3.52610E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
48	1.33069E+00	1.33069E+00	3.52610E+03	0.00000E+00	1.99967E+01	0.00000E+00	1.99967E+01
49	1.33070E+00	1.33070E+00	3.52609E+03	0.00000E+00	1.99966E+01	0.00000E+00	1.99966E+01

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE
ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-10-18
0 CPU TIME = 255.18

OJUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
50	1.33070E+00	1.33070E+00	3.52609E+03	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
51	1.33876E+00	1.33876E+00	1.84297E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
52	1.33880E+00	1.33880E+00	1.84297E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
53	1.33881E+00	1.33881E+00	1.84297E+02	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
54	1.33881E+00	1.33881E+00	1.84297E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
55	1.33882E+00	1.33882E+00	1.84297E+02	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
56	1.33883E+00	1.33883E+00	1.84297E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
57	1.33883E+00	1.33883E+00	1.84297E+02	0.00000E+00	1.99962E+01	0.00000E+00	1.99962E+01
58	1.33884E+00	1.33884E+00	1.84297E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
59	1.33885E+00	1.33885E+00	1.84297E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
60	1.33885E+00	1.33885E+00	1.84297E+02	0.00000E+00	1.99955E+01	0.00000E+00	1.99955E+01
61	1.37819E+00	1.37819E+00	4.98027E+02	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
62	1.37823E+00	1.37823E+00	4.98027E+02	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
63	1.37824E+00	1.37824E+00	4.98027E+02	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
64	1.37824E+00	1.37824E+00	4.98027E+02	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
65	1.37825E+00	1.37825E+00	4.98027E+02	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
66	1.37826E+00	1.37826E+00	4.98027E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
67	1.37826E+00	1.37826E+00	4.98027E+02	0.00000E+00	1.99956E+01	0.00000E+00	1.99956E+01
68	1.37827E+00	1.37827E+00	4.98026E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
69	1.37828E+00	1.37828E+00	4.98026E+02	0.00000E+00	1.99951E+01	0.00000E+00	1.99951E+01
70	1.37828E+00	1.37828E+00	4.98026E+02	0.00000E+00	1.99947E+01	0.00000E+00	1.99947E+01
71	1.34684E+00	1.34684E+00	2.87384E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
72	1.34688E+00	1.34688E+00	2.87384E+03	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
73	1.34689E+00	1.34689E+00	2.87384E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
74	1.34690E+00	1.34690E+00	2.87384E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
75	1.34690E+00	1.34690E+00	2.87384E+03	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
76	1.34691E+00	1.34691E+00	2.87384E+03	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
77	1.34691E+00	1.34691E+00	2.87384E+03	0.00000E+00	1.99958E+01	0.00000E+00	1.99958E+01
78	1.34692E+00	1.34692E+00	2.87384E+03	0.00000E+00	1.99954E+01	0.00000E+00	1.99954E+01
79	1.34693E+00	1.34693E+00	2.87384E+03	0.00000E+00	1.99951E+01	0.00000E+00	1.99951E+01
80	1.34694E+00	1.34694E+00	2.87384E+03	0.00000E+00	1.99948E+01	0.00000E+00	1.99948E+01
81	1.33072E+00	1.33072E+00	3.52639E+03	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
82	1.33076E+00	1.33076E+00	3.52639E+03	0.00000E+00	1.99985E+01	0.00000E+00	1.99985E+01
83	1.33076E+00	1.33076E+00	3.52639E+03	0.00000E+00	1.99984E+01	0.00000E+00	1.99984E+01
84	1.33077E+00	1.33077E+00	3.52638E+03	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
85	1.33078E+00	1.33078E+00	3.52638E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
86	1.33078E+00	1.33078E+00	3.52638E+03	0.00000E+00	1.99970E+01	0.00000E+00	1.99970E+01
87	1.33079E+00	1.33079E+00	3.52638E+03	0.00000E+00	1.99970E+01	0.00000E+00	1.99970E+01
88	1.33080E+00	1.33080E+00	3.52638E+03	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
89	1.33080E+00	1.33080E+00	3.52638E+03	0.00000E+00	1.99965E+01	0.00000E+00	1.99965E+01
90	1.33081E+00	1.33081E+00	3.52638E+03	0.00000E+00	1.99962E+01	0.00000E+00	1.99962E+01
91	3.24568E+00	3.24568E+00	2.24435E+01	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
92	1.45641E+00	1.45641E+00	2.24433E+01	0.00000E+00	2.00336E+01	0.00000E+00	2.00336E+01
93	3.33132E+00	3.33132E+00	1.84283E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
94	1.49480E+00	1.49480E+00	1.84281E+02	0.00000E+00	2.00271E+01	0.00000E+00	2.00271E+01
95	3.33257E+00	3.33257E+00	5.06977E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
96	1.49539E+00	1.49539E+00	5.06973E+02	0.00000E+00	2.00274E+01	0.00000E+00	2.00274E+01
97	3.36766E+00	3.36766E+00	2.88764E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
98	1.51117E+00	1.51117E+00	2.88761E+03	0.00000E+00	2.00263E+01	0.00000E+00	2.00263E+01
99	3.31120E+00	3.31120E+00	3.52610E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE
ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-10-18
0 CPU TIME = 255.18

OJUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
100	1.48581E+00	1.48581E+00	3.52607E+03	0.00000E+00	2.00235E+01	0.00000E+00	2.00235E+01
101	3.33157E+00	3.33157E+00	1.84297E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
102	1.49491E+00	1.49491E+00	1.84295E+02	0.00000E+00	2.00271E+01	0.00000E+00	2.00271E+01
103	3.42968E+00	3.42968E+00	4.98027E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
104	1.53895E+00	1.53895E+00	4.98022E+02	0.00000E+00	2.00257E+01	0.00000E+00	2.00257E+01
105	3.35157E+00	3.35157E+00	2.87384E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
106	1.50395E+00	1.50395E+00	2.87382E+03	0.00000E+00	2.00265E+01	0.00000E+00	2.00265E+01
107	3.31147E+00	3.31147E+00	3.52639E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
108	1.48593E+00	1.48593E+00	3.52636E+03	0.00000E+00	2.00235E+01	0.00000E+00	2.00235E+01
109	0.00000E+00	0.00000E+00	7.10500E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
110	0.00000E+00	0.00000E+00	7.10500E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01

IPRTCT = 1

```
CHANNEL  RESULTS

         CHANNEL   CONNECTING          C O O L A N T            FUEL
          NUMBER     VOLUMES       TEMPERATURE    VOID FRAC    TEMPERATURE
                                         (C)          (-)          (C)

             1        1 TO   9     1.99099E+01   0.00000E+00   1.99155E+01
             2       10 TO  18     1.99058E+01   0.00000E+00   1.99100E+01
             3       19 TO  27     1.99057E+01   0.00000E+00   1.99099E+01
             4       28 TO  36     1.99051E+01   0.00000E+00   1.99090E+01
             5       37 TO  45     1.99071E+01   0.00000E+00   1.99117E+01
             6       46 TO  54     1.99058E+01   0.00000E+00   1.99101E+01
             7       55 TO  63     1.99052E+01   0.00000E+00   1.99092E+01
             8       64 TO  72     1.99051E+01   0.00000E+00   1.99091E+01
             9       73 TO  81     1.99072E+01   0.00000E+00   1.99117E+01
IM,JM,KM,KMIN,KMAX
23 13 4 1 15
IFT,E1,V1,X1
1 20.009995 0.00000000E+00 0.00000000E+00
FSP,PLP1(L),FP,FSG,FSUB,FD,FHL,FI,FAX,QCPR(L),CQQ,X1
AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
 0.1001E+01 0.2280E-05 0.7189E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00 0.6974E-06 0.0000E+00
 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1000E+01 0.3044E+03 0.2592E+01 0.8800E+00-0.2528E+00 0.1186E+03
IM,JM,KM,KMIN,KMAX
23 13 14 1 15
IFT,E1,V1,X1
2 15.949999 0.00000000E+00 0.00000000E+00
FSP,PLP1(L),FP,FSG,FSUB,FD,FHL,FI,FAX,QCPR(L),CQQ,X1
AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
 0.8388E+00 0.1545E-05 0.7252E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00 0.3139E-07 0.0000E+00
 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1000E+01 0.3970E+02 0.3122E+01 0.8800E+00-0.2528E+00 0.1186E+03
1  ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR                                                                    91-10-18

                              ********** SUMMARY  TABLE **********

                                   MINIMUM CPR ,(I,J,K),L =    0.000, 28, 17, 15,  3

                                   MAXIMUM LHGR,(I,J,K),L =    0.000, 25, 15,  3,  3

                                   CPR (25,15, 3)         =   99.990

                                   LHGR(28,17,15)             0.000
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(5)過大投入反応度を用いたDBE (パス5)1点近似感度解析

```
 EUREKA-ATR/MOD1          ( 1)                    THERMAL REACTOR CORE KINETICS CODE
       ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR                                          91-10-17
0 CPU TIME =  213.10
 STANDARD TIME STEP NUMBER   250.  ACTUAL TIME STEP NUMBER   269.  TIME = 0.250000E+02 SEC.  LAST DT =  0.100000E+00 SEC.
0
 TOTAL SYSTEM   -NORM POWR    POWR          ENERGY        TOT. REAC     DOP. REAC     WAT-T REAC    VOID REAC     EXP. REAC     INSTD REAC
 QUANTITIES                   (MW)          (MWS)         ($)           ($)           ($)           ($)           ($)           ($)
                2.43597E+01   4.61600E-07   2.48840E-06   5.08820E-01   5.63878E-04  -1.65673E-04   0.00000E+00   0.00000E+00   5.08422E-01
0 VOLUME        AVG. PRES     TOT. MASS     AVG. ENTH     AVG. DENS     AVG. TEMP     AVG. QUAL     LIQ. MASS
  NUMBER        (KG/CM**2A)   (KG) H2O      (KC/KG)       (KG/M3)       (C)                         (KG)
     1          3.19550E+00   1.17893E+00   2.00005E+01   9.98518E+02   1.99019E+01   0.00000E+00   1.17893E+00
     2          3.12598E+00   2.35885E+00   2.00004E+01   9.98515E+02   1.99033E+01   0.00000E+00   2.35885E+00
     3          3.01275E+00   2.35884E+00   2.00000E+01   9.98509E+02   1.99054E+01   0.00000E+00   2.35884E+00
     4          2.90823E+00   2.35883E+00   1.99999E+01   9.98504E+02   1.99076E+01   0.00000E+00   2.35883E+00
     5          2.81219E+00   1.17891E+00   1.99996E+01   9.98500E+02   1.99094E+01   0.00000E+00   1.17891E+00
     6          2.72485E+00   2.35881E+00   1.99999E+01   9.98495E+02   1.99117E+01   0.00000E+00   2.35881E+00
     7          2.60255E+00   2.35879E+00   1.99999E+01   9.98489E+02   1.99143E+01   0.00000E+00   2.35879E+00
     8          2.48013E+00   2.35878E+00   2.00000E+01   9.98483E+02   1.99172E+01   0.00000E+00   2.35878E+00
     9          2.40144E+00   1.17889E+00   1.99999E+01   9.98480E+02   1.99188E+01   0.00000E+00   1.17889E+00
    10          3.23125E+00   9.43346E+00   1.99979E+01   9.98520E+02   1.98985E+01   0.00000E+00   9.43346E+00
    11          3.14931E+00   1.88679E+01   1.99977E+01   9.98516E+02   1.99000E+01   0.00000E+00   1.88679E+01
    12          3.04007E+00   1.88678E+01   1.99970E+01   9.98511E+02   1.99018E+01   0.00000E+00   1.88678E+01
    13          2.93068E+00   1.88677E+01   1.99966E+01   9.98506E+02   1.99038E+01   0.00000E+00   1.88677E+01
    14          2.82860E+00   9.43328E+00   1.99961E+01   9.98501E+02   1.99055E+01   0.00000E+00   9.43328E+00
    15          2.74648E+00   1.88675E+01   1.99960E+01   9.98497E+02   1.99073E+01   0.00000E+00   1.88675E+01
    16          2.62692E+00   1.88674E+01   1.99957E+01   9.98491E+02   1.99096E+01   0.00000E+00   1.88674E+01
    17          2.49725E+00   1.88673E+01   1.99954E+01   9.98485E+02   1.99122E+01   0.00000E+00   1.88673E+01
    18          2.40493E+00   9.43309E+00   1.99951E+01   9.98481E+02   1.99139E+01   0.00000E+00   9.43309E+00
    19          3.23423E+00   2.59435E+01   1.99979E+01   9.98520E+02   1.98984E+01   0.00000E+00   2.59435E+01
    20          3.15226E+00   5.18859E+01   1.99976E+01   9.98517E+02   1.98999E+01   0.00000E+00   5.18859E+01
    21          3.04293E+00   5.18856E+01   1.99970E+01   9.98511E+02   1.99017E+01   0.00000E+00   5.18856E+01
    22          2.93352E+00   5.18853E+01   1.99966E+01   9.98506E+02   1.99037E+01   0.00000E+00   5.18853E+01
    23          2.83140E+00   2.59430E+01   1.99961E+01   9.98501E+02   1.99054E+01   0.00000E+00   2.59430E+01
    24          2.74924E+00   5.18849E+01   1.99959E+01   9.98497E+02   1.99071E+01   0.00000E+00   5.18849E+01
    25          2.62961E+00   5.18846E+01   1.99957E+01   9.98492E+02   1.99095E+01   0.00000E+00   5.18846E+01
    26          2.49985E+00   5.18842E+01   1.99955E+01   9.98485E+02   1.99122E+01   0.00000E+00   5.18842E+01
    27          2.40749E+00   2.59425E+01   1.99951E+01   9.98481E+02   1.99138E+01   0.00000E+00   2.59425E+01
    28          3.25230E+00   1.46225E+02   1.99975E+01   9.98521E+02   1.98976E+01   0.00000E+00   1.46225E+02
    29          3.16979E+00   2.92449E+02   1.99973E+01   9.98517E+02   1.98992E+01   0.00000E+00   2.92449E+02
    30          3.05978E+00   2.92447E+02   1.99967E+01   9.98512E+02   1.99010E+01   0.00000E+00   2.92447E+02
    31          2.94969E+00   2.92445E+02   1.99962E+01   9.98507E+02   1.99030E+01   0.00000E+00   2.92445E+02
    32          2.84696E+00   1.46222E+02   1.99957E+01   9.98502E+02   1.99047E+01   0.00000E+00   1.46222E+02
    33          2.75422E+00   2.92443E+02   1.99955E+01   9.98498E+02   1.99066E+01   0.00000E+00   2.92443E+02
    34          2.63381E+00   2.92441E+02   1.99952E+01   9.98492E+02   1.99090E+01   0.00000E+00   2.92441E+02
    35          2.50330E+00   2.92439E+02   1.99949E+01   9.98486E+02   1.99115E+01   0.00000E+00   2.92439E+02
    36          2.42041E+00   1.46219E+02   1.99946E+01   9.98482E+02   1.99131E+01   0.00000E+00   1.46219E+02
    37          3.20316E+00   1.81601E+02   1.99984E+01   9.98519E+02   1.98995E+01   0.00000E+00   1.81601E+02
    38          3.12157E+00   3.63201E+02   1.99981E+01   9.98515E+02   1.99011E+01   0.00000E+00   3.63201E+02
    39          3.01278E+00   3.63199E+02   1.99976E+01   9.98510E+02   1.99030E+01   0.00000E+00   3.63199E+02
    40          2.90388E+00   3.63198E+02   1.99973E+01   9.98505E+02   1.99050E+01   0.00000E+00   3.63198E+02
    41          2.80228E+00   1.81598E+02   1.99967E+01   9.98500E+02   1.99067E+01   0.00000E+00   1.81598E+02
    42          2.72053E+00   3.63194E+02   1.99967E+01   9.98496E+02   1.99085E+01   0.00000E+00   3.63194E+02
    43          2.59155E+00   3.63192E+02   1.99964E+01   9.98490E+02   1.99111E+01   0.00000E+00   3.63192E+02
    44          2.46247E+00   3.63190E+02   1.99964E+01   9.98483E+02   1.99139E+01   0.00000E+00   3.63190E+02
    45          2.38051E+00   1.81594E+02   1.99961E+01   9.98479E+02   1.99155E+01   0.00000E+00   1.81594E+02
    46          3.23136E+00   9.43346E+00   1.99979E+01   9.98520E+02   1.98985E+01   0.00000E+00   9.43346E+00
    47          3.14942E+00   1.88679E+01   1.99976E+01   9.98516E+02   1.99000E+01   0.00000E+00   1.88679E+01
    48          3.04014E+00   1.88678E+01   1.99971E+01   9.98511E+02   1.99019E+01   0.00000E+00   1.88678E+01
    49          2.93079E+00   1.88677E+01   1.99965E+01   9.98506E+02   1.99037E+01   0.00000E+00   1.88677E+01
    50          2.82872E+00   9.43328E+00   1.99961E+01   9.98501E+02   1.99055E+01   0.00000E+00   9.43328E+00
    51          2.74658E+00   1.88675E+01   1.99960E+01   9.98497E+02   1.99073E+01   0.00000E+00   1.88675E+01
    52          2.62698E+00   1.88674E+01   1.99957E+01   9.98491E+02   1.99096E+01   0.00000E+00   1.88674E+01
    53          2.49729E+00   1.88673E+01   1.99955E+01   9.98485E+02   1.99123E+01   0.00000E+00   1.88673E+01
    54          2.40496E+00   9.43309E+00   1.99953E+01   9.98481E+02   1.99140E+01   0.00000E+00   9.43309E+00
    55          3.23827E+00   2.47636E+01   1.99976E+01   9.98521E+02   1.98980E+01   0.00000E+00   2.47636E+01
    56          3.15594E+00   4.95270E+01   1.99973E+01   9.98517E+02   1.98995E+01   0.00000E+00   4.95270E+01
    57          3.04617E+00   4.95267E+01   1.99967E+01   9.98512E+02   1.99013E+01   0.00000E+00   4.95267E+01
    58          2.93628E+00   4.95265E+01   1.99962E+01   9.98506E+02   1.99032E+01   0.00000E+00   4.95265E+01
    59          2.83449E+00   2.47631E+01   1.99957E+01   9.98501E+02   1.99050E+01   0.00000E+00   2.47631E+01
    60          2.75194E+00   4.95261E+01   1.99955E+01   9.98498E+02   1.99066E+01   0.00000E+00   4.95261E+01
    61          2.63217E+00   4.95258E+01   1.99951E+01   9.98492E+02   1.99089E+01   0.00000E+00   4.95258E+01
    62          2.50266E+00   4.95255E+01   1.99948E+01   9.98486E+02   1.99114E+01   0.00000E+00   4.95255E+01
    63          2.41031E+00   2.47626E+01   1.99944E+01   9.98481E+02   1.99130E+01   0.00000E+00   2.47626E+01
    64          3.25226E+00   1.46225E+02   1.99976E+01   9.98521E+02   1.98977E+01   0.00000E+00   1.46225E+02
    65          3.16981E+00   2.92449E+02   1.99973E+01   9.98517E+02   1.98992E+01   0.00000E+00   2.92449E+02
    66          3.05987E+00   2.92447E+02   1.99967E+01   9.98512E+02   1.99010E+01   0.00000E+00   2.92447E+02
    67          2.94981E+00   2.92445E+02   1.99962E+01   9.98507E+02   1.99030E+01   0.00000E+00   2.92445E+02
    68          2.84695E+00   1.46222E+02   1.99957E+01   9.98502E+02   1.99047E+01   0.00000E+00   1.46222E+02
    69          2.75410E+00   2.92443E+02   1.99956E+01   9.98498E+02   1.99067E+01   0.00000E+00   2.92443E+02
    70          2.63373E+00   2.92441E+02   1.99952E+01   9.98492E+02   1.99089E+01   0.00000E+00   2.92441E+02
    71          2.50308E+00   2.92439E+02   1.99949E+01   9.98486E+02   1.99115E+01   0.00000E+00   2.92439E+02
    72          2.42024E+00   1.46219E+02   1.99945E+01   9.98482E+02   1.99130E+01   0.00000E+00   1.46219E+02
    73          3.20325E+00   1.81601E+02   1.99983E+01   9.98519E+02   1.98995E+01   0.00000E+00   1.81601E+02
    74          3.12163E+00   3.63201E+02   1.99982E+01   9.98515E+02   1.99011E+01   0.00000E+00   3.63201E+02
    75          3.01284E+00   3.63199E+02   1.99977E+01   9.98510E+02   1.99030E+01   0.00000E+00   3.63199E+02
    76          2.90394E+00   3.63198E+02   1.99973E+01   9.98505E+02   1.99051E+01   0.00000E+00   3.63198E+02
    77          2.80233E+00   1.81598E+02   1.99967E+01   9.98500E+02   1.99068E+01   0.00000E+00   1.81598E+02
    78          2.72058E+00   3.63194E+02   1.99967E+01   9.98496E+02   1.99086E+01   0.00000E+00   3.63194E+02
    79          2.59155E+00   3.63192E+02   1.99966E+01   9.98490E+02   1.99112E+01   0.00000E+00   3.63192E+02
    80          2.46250E+00   3.63190E+02   1.99963E+01   9.98483E+02   1.99139E+01   0.00000E+00   3.63190E+02
    81          2.38054E+00   1.81594E+02   1.99960E+01   9.98479E+02   1.99153E+01   0.00000E+00   1.81594E+02
    82          3.85907E+00   3.34274E+01   2.00014E+01   9.98550E+02   1.98881E+01   0.00000E+00   3.34274E+01
    83          3.86333E+00   2.01174E+02   1.99989E+01   9.98551E+02   1.98855E+01   0.00000E+00   2.01174E+02
    84          3.86474E+00   5.49014E+02   1.99989E+01   9.98551E+02   1.98854E+01   0.00000E+00   5.49014E+02
    85          3.87846E+00   2.97059E+03   1.99986E+01   9.98552E+02   1.98849E+01   0.00000E+00   2.97059E+03
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86	3.84973E+00	4.15374E+03	1.99994E+01	9.98550E+02	1.98863E+01	0.00000E+00	4.15374E+03	
87	3.86351E+00	2.01174E+02	1.99989E+01	9.98551E+02	1.98855E+01	0.00000E+00	2.01174E+02	
88	3.86977E+00	5.15582E+02	1.99986E+01	9.98551E+02	1.98850E+01	0.00000E+00	5.15582E+02	
89	3.87804E+00	2.97059E+03	1.99986E+01	9.98552E+02	1.98849E+01	0.00000E+00	2.97059E+03	
90	3.83996E+00	4.15374E+03	1.99994E+01	9.98550E+02	1.98865E+01	0.00000E+00	4.15374E+03	
91	1.72829E+00	9.84715E+01	2.00333E+01	9.98441E+02	1.99671E+01	0.00000E+00	9.84715E+01	
92	1.72883E+00	7.70978E+02	2.00268E+01	9.98442E+02	1.99606E+01	0.00000E+00	7.70978E+02	
93	1.73010E+00	2.15602E+03	2.00272E+01	9.98442E+02	1.99609E+01	0.00000E+00	2.15602E+03	
94	1.73142E+00	1.20937E+04	2.00260E+01	9.98442E+02	1.99597E+01	0.00000E+00	1.20937E+04	
95	1.71671E+00	1.24350E+04	2.00232E+01	9.98442E+02	1.99572E+01	0.00000E+00	1.24350E+04	
96	1.72885E+00	7.70998E+02	2.00268E+01	9.98442E+02	1.99606E+01	0.00000E+00	7.70998E+02	
97	1.73161E+00	2.05801E+03	2.00254E+01	9.98442E+02	1.99591E+01	0.00000E+00	2.05801E+03	
98	1.74139E+00	1.20937E+04	2.00262E+01	9.98443E+02	1.99597E+01	0.00000E+00	1.20937E+04	
99	1.71672E+00	1.24350E+04	2.00232E+01	9.98442E+02	1.99572E+01	0.00000E+00	1.24350E+04	
100	4.50517E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98712E+01	0.00000E+00	8.86301E+03	
101	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05	
102	4.50545E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98712E+01	0.00000E+00	8.86301E+03	
103	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05	

0 HEAT SLAB NUMBER	VOL NUM	H.T. MODE	SURF FLUX (KC/HR/M2)	CRIT FLUX (KC/HR/M2)	H.T. COEF (KC/H/M2/C)	SURF TEMP (C)	LOCAL ENGY (CAL/G-U02)	VOID FRAC	LOCAL MASS FLUX	LOCAL FLUID TEMP.
1	1	1	6.06923E+00	5.86344E+06	1.05395E+04	1.99026E+01	1.07897E+00	0.00000E+00	4.68643E+06	1.99019E+01
2	2	1	6.29461E+00	5.83946E+06	1.05131E+04	1.99041E+01	1.07907E+00	0.00000E+00	4.68643E+06	1.99033E+01
3	3	1	8.72727E-01	5.82862E+06	1.04696E+04	1.99057E+01	1.07921E+00	0.00000E+00	4.68643E+06	1.99054E+01
4	4	1	2.43804E+00	6.76024E+06	1.04289E+04	1.99081E+01	1.07936E+00	0.00000E+00	4.68643E+06	1.99076E+01
5	5	1	1.98519E+00	6.95275E+06	1.03909E+04	1.99098E+01	1.07947E+00	0.00000E+00	4.68643E+06	1.99094E+01
6	6	1	1.24263E+01	6.94269E+06	1.03558E+04	1.99130E+01	1.07961E+00	0.00000E+00	4.68643E+06	1.99117E+01
7	7	1	4.81965E+00	6.92857E+06	1.03058E+04	1.99151E+01	1.07979E+00	0.00000E+00	4.68643E+06	1.99143E+01
8	8	1	4.82824E+00	6.36700E+06	1.02546E+04	1.99180E+01	1.07998E+00	0.00000E+00	4.68643E+06	1.99172E+01
9	9	1	1.19797E+01	6.35860E+06	1.02212E+04	1.99202E+01	1.08008E+00	0.00000E+00	4.68643E+06	1.99188E+01
10	10	1	0.00000E+00	5.86684E+06	0.00000E+00	1.98986E+01	1.07872E+00	0.00000E+00	4.81002E+06	1.98985E+01
11	11	1	2.71360E+00	5.84168E+06	1.07434E+04	1.99004E+01	1.07882E+00	0.00000E+00	4.81002E+06	1.99000E+01
12	12	1	-4.85439E+00	5.83122E+06	1.07007E+04	1.99016E+01	1.07894E+00	0.00000E+00	4.81002E+06	1.99018E+01
13	13	1	2.62338E+00	6.76273E+06	1.06573E+04	1.99042E+01	1.07907E+00	0.00000E+00	4.81002E+06	1.99038E+01
14	14	1	3.87701E+00	6.95463E+06	1.06162E+04	1.99060E+01	1.07918E+00	0.00000E+00	4.81002E+06	1.99055E+01
15	15	1	7.25049E+00	6.94517E+06	1.05826E+04	1.99081E+01	1.07930E+00	0.00000E+00	4.81002E+06	1.99073E+01
16	16	1	2.67961E+00	6.93137E+06	1.05329E+04	1.99100E+01	1.07945E+00	0.00000E+00	4.81002E+06	1.99096E+01
17	17	1	1.92084E+00	6.36882E+06	1.04777E+04	1.99126E+01	1.07962E+00	0.00000E+00	4.81002E+06	1.99122E+01
18	18	1	8.01180E+00	6.35897E+06	1.04378E+04	1.99149E+01	1.07974E+00	0.00000E+00	4.81002E+06	1.99139E+01
19	19	1	0.00000E+00	5.86713E+06	0.00000E+00	1.98985E+01	1.07871E+00	0.00000E+00	4.81191E+06	1.98984E+01
20	20	1	2.35513E+00	5.84196E+06	1.07479E+04	1.99002E+01	1.07882E+00	0.00000E+00	4.81191E+06	1.98999E+01
21	21	1	2.28235E+00	5.83150E+06	1.07052E+04	1.99021E+01	1.07894E+00	0.00000E+00	4.81191E+06	1.99017E+01
22	22	1	6.37547E+00	6.76305E+06	1.06618E+04	1.99045E+01	1.07907E+00	0.00000E+00	4.81191E+06	1.99037E+01
23	23	1	3.80517E+00	6.95495E+06	1.06207E+04	1.99060E+01	1.07917E+00	0.00000E+00	4.81191E+06	1.99054E+01
24	24	1	7.77559E-01	6.94549E+06	1.05871E+04	1.99073E+01	1.07929E+00	0.00000E+00	4.81191E+06	1.99071E+01
25	25	1	5.79228E+00	6.93169E+06	1.05373E+04	1.99102E+01	1.07945E+00	0.00000E+00	4.81191E+06	1.99095E+01
26	26	1	9.39016E+00	6.36909E+06	1.04821E+04	1.99133E+01	1.07962E+00	0.00000E+00	4.81191E+06	1.99122E+01
27	27	1	6.39890E+00	6.35924E+06	1.04422E+04	1.99146E+01	1.07973E+00	0.00000E+00	4.81190E+06	1.99138E+01
28	28	1	-7.34835E+00	5.86886E+06	1.08774E+04	1.98972E+01	1.07867E+00	0.00000E+00	4.86265E+06	1.98976E+01
29	29	1	0.00000E+00	5.84363E+06	0.00000E+00	1.98993E+01	1.07877E+00	0.00000E+00	4.86265E+06	1.98992E+01
30	30	1	4.90371E-01	5.83311E+06	1.08020E+04	1.99012E+01	1.07889E+00	0.00000E+00	4.86265E+06	1.99010E+01
31	31	1	4.50104E+00	6.76485E+06	1.07582E+04	1.99035E+01	1.07901E+00	0.00000E+00	4.86264E+06	1.99030E+01
32	32	1	2.99995E+00	6.95674E+06	1.07165E+04	1.99051E+01	1.07912E+00	0.00000E+00	4.86264E+06	1.99047E+01
33	33	1	-3.70753E-01	6.94606E+06	1.06784E+04	1.99067E+01	1.07925E+00	0.00000E+00	4.86264E+06	1.99066E+01
34	34	1	8.96983E+00	6.93217E+06	1.06279E+04	1.99100E+01	1.07941E+00	0.00000E+00	4.86264E+06	1.99090E+01
35	35	1	3.25241E+00	6.36946E+06	1.05719E+04	1.99121E+01	1.07958E+00	0.00000E+00	4.86264E+06	1.99115E+01
36	36	1	1.11874E+01	6.36061E+06	1.05359E+04	1.99143E+01	1.07967E+00	0.00000E+00	4.86264E+06	1.99131E+01
37	37	1	0.00000E+00	5.86415E+06	0.00000E+00	1.98997E+01	1.07879E+00	0.00000E+00	4.78108E+06	1.98995E+01
38	38	1	2.16563E+00	5.83902E+06	1.06809E+04	1.99015E+01	1.07890E+00	0.00000E+00	4.78107E+06	1.99011E+01
39	39	1	-1.17601E+00	5.82861E+06	1.06384E+04	1.99031E+01	1.07903E+00	0.00000E+00	4.78107E+06	1.99030E+01
40	40	1	4.76595E+00	6.75974E+06	1.05953E+04	1.99056E+01	1.07915E+00	0.00000E+00	4.78107E+06	1.99050E+01
41	41	1	-3.48914E-01	6.95160E+06	1.05544E+04	1.99068E+01	1.07926E+00	0.00000E+00	4.78107E+06	1.99067E+01
42	42	1	3.31264E+00	6.94218E+06	1.05210E+04	1.99090E+01	1.07939E+00	0.00000E+00	4.78107E+06	1.99085E+01
43	43	1	2.05871E+00	6.92728E+06	1.04673E+04	1.99115E+01	1.07956E+00	0.00000E+00	4.78107E+06	1.99111E+01
44	44	1	6.46299E+00	6.36511E+06	1.04124E+04	1.99148E+01	1.07974E+00	0.00000E+00	4.78107E+06	1.99139E+01
45	45	1	8.70090E+00	6.35635E+06	1.03769E+04	1.99165E+01	1.07984E+00	0.00000E+00	4.78107E+06	1.99155E+01
46	46	1	0.00000E+00	5.86686E+06	0.00000E+00	1.98986E+01	1.07873E+00	0.00000E+00	4.81038E+06	1.98985E+01
47	47	1	2.03755E+00	5.84170E+06	1.07441E+04	1.99003E+01	1.07882E+00	0.00000E+00	4.81038E+06	1.99000E+01
48	48	1	1.67697E+00	5.83124E+06	1.07013E+04	1.99022E+01	1.07895E+00	0.00000E+00	4.81038E+06	1.99019E+01
49	49	1	-3.16313E+00	6.76276E+06	1.06580E+04	1.99036E+01	1.07907E+00	0.00000E+00	4.81038E+06	1.99037E+01
50	50	1	-8.91465E-01	6.95465E+06	1.06169E+04	1.99057E+01	1.07918E+00	0.00000E+00	4.81038E+06	1.99055E+01
51	51	1	-2.90674E-01	6.94519E+06	1.05833E+04	1.99074E+01	1.07929E+00	0.00000E+00	4.81038E+06	1.99073E+01
52	52	1	1.65036E+00	6.93139E+06	1.05335E+04	1.99099E+01	1.07945E+00	0.00000E+00	4.81038E+06	1.99096E+01
53	53	1	6.67194E+00	6.36883E+06	1.04784E+04	1.99131E+01	1.07963E+00	0.00000E+00	4.81038E+06	1.99123E+01
54	54	1	1.26738E+01	6.35897E+06	1.04384E+04	1.99154E+01	1.07974E+00	0.00000E+00	4.81038E+06	1.99140E+01
55	55	1	0.00000E+00	5.86752E+06	0.00000E+00	1.98982E+01	1.07869E+00	0.00000E+00	4.95205E+06	1.98980E+01
56	56	1	0.00000E+00	5.84232E+06	0.00000E+00	1.98996E+01	1.07879E+00	0.00000E+00	4.95205E+06	1.98995E+01
57	57	1	-3.92611E+00	5.83182E+06	1.09552E+04	1.99011E+01	1.07890E+00	0.00000E+00	4.95205E+06	1.99013E+01
58	58	1	-8.29008E-02	6.76337E+06	1.09106E+04	1.99034E+01	1.07903E+00	0.00000E+00	4.95205E+06	1.99032E+01
59	59	1	1.98650E+00	6.95531E+06	1.08687E+04	1.99054E+01	1.07913E+00	0.00000E+00	4.95205E+06	1.99050E+01
60	60	1	4.83109E+00	6.94581E+06	1.08342E+04	1.99072E+01	1.07925E+00	0.00000E+00	4.95205E+06	1.99066E+01
61	61	1	8.38811E+00	6.93199E+06	1.07832E+04	1.99098E+01	1.07940E+00	0.00000E+00	4.95205E+06	1.99089E+01
62	62	1	6.47952E+00	6.36941E+06	1.07269E+04	1.99122E+01	1.07957E+00	0.00000E+00	4.95205E+06	1.99114E+01
63	63	1	2.88680E+00	6.35954E+06	1.06861E+04	1.99136E+01	1.07967E+00	0.00000E+00	4.95205E+06	1.99130E+01
64	64	1	0.00000E+00	5.86886E+06	0.00000E+00	1.98979E+01	1.07867E+00	0.00000E+00	4.83942E+06	1.98977E+01
65	65	1	0.00000E+00	5.84364E+06	0.00000E+00	1.98994E+01	1.07877E+00	0.00000E+00	4.83942E+06	1.98992E+01
66	66	1	-6.29522E+00	5.83313E+06	1.07608E+04	1.99007E+01	1.07889E+00	0.00000E+00	4.83942E+06	1.99010E+01
67	67	1	-2.96513E+00	6.76487E+06	1.07171E+04	1.99029E+01	1.07902E+00	0.00000E+00	4.83942E+06	1.99030E+01
68	68	1	-4.98932E+00	6.95675E+06	1.06756E+04	1.99045E+01	1.07912E+00	0.00000E+00	4.83941E+06	1.99047E+01
69	69	1	5.66622E+00	6.94606E+06	1.06375E+04	1.99074E+01	1.07925E+00	0.00000E+00	4.83941E+06	1.99067E+01
70	70	1	-1.75991E+00	6.93217E+06	1.05872E+04	1.99090E+01	1.07940E+00	0.00000E+00	4.83941E+06	1.99089E+01
71	71	1	-1.52245E+00	6.36945E+06	1.05314E+04	1.99117E+01	1.07958E+00	0.00000E+00	4.83941E+06	1.99115E+01
72	72	1	-9.16852E-02	6.36060E+06	1.04955E+04	1.99132E+01	1.07967E+00	0.00000E+00	4.83941E+06	1.99130E+01
73	73	1	-5.69498E+00	5.86418E+06	1.07131E+04	1.98992E+01	1.07879E+00	0.00000E+00	4.78147E+06	1.98995E+01
74	74	1	3.64232E+00	5.83904E+06	1.06816E+04	1.99016E+01	1.07890E+00	0.00000E+00	4.78146E+06	1.99011E+01
75	75	1	3.61161E-01	5.82863E+06	1.06392E+04	1.99032E+01	1.07903E+00	0.00000E+00	4.78146E+06	1.99030E+01

76	76	1	4.02739E+00	6.75976E+06	1.05960E+04	1.99056E+01	1.07916E+00	0.00000E+00	4.78146E+06	1.99051E+01
77	77	1	1.35088E-01	6.95162E+06	1.05551E+04	1.99069E+01	1.07926E+00	0.00000E+00	4.78146E+06	1.99068E+01
78	78	1	3.10259E+00	6.94219E+06	1.05217E+04	1.99091E+01	1.07939E+00	0.00000E+00	4.78146E+06	1.99086E+01
79	79	1	9.98758E+00	6.92729E+06	1.04680E+04	1.99123E+01	1.07956E+00	0.00000E+00	4.78146E+06	1.99112E+01
80	80	1	4.24802E+00	6.36512E+06	1.04131E+04	1.99145E+01	1.07974E+00	0.00000E+00	4.78146E+06	1.99139E+01
81	81	1	4.78891E+00	6.35637E+06	1.03776E+04	1.99160E+01	1.07983E+00	0.00000E+00	4.78146E+06	1.99153E+01

O HEAT SLAB NUMBER	VOL NUM	GAP CONDUCTANCE (KCAL/M2/HR/C)	GAP DISTANCE (M)	CENT TEMP (C)	AVG. TEMP (C)	FUEL POWER (MW)
1	1	3.20000E+02	0.00000E+00	1.99079E+01	1.99058E+01	2.51577E-11
2	2	3.20000E+02	0.00000E+00	1.99100E+01	1.99076E+01	1.15766E-10
3	3	3.20000E+02	0.00000E+00	1.99129E+01	1.99101E+01	1.43490E-10
4	4	3.20000E+02	0.00000E+00	1.99158E+01	1.99129E+01	1.55914E-10
5	5	3.20000E+02	0.00000E+00	1.99179E+01	1.99149E+01	7.90768E-11
6	6	3.20000E+02	0.00000E+00	1.99208E+01	1.99175E+01	1.68732E-10
7	7	3.20000E+02	0.00000E+00	1.99244E+01	1.99208E+01	1.77838E-10
8	8	3.20000E+02	0.00000E+00	1.99280E+01	1.99241E+01	1.80921E-10
9	9	3.20000E+02	0.00000E+00	1.99301E+01	1.99260E+01	6.46083E-11
10	10	1.90000E+03	0.00000E+00	1.99027E+01	1.99012E+01	9.95180E-11
11	11	1.90000E+03	0.00000E+00	1.99047E+01	1.99031E+01	4.28055E-10
12	12	1.90000E+03	0.00000E+00	1.99071E+01	1.99052E+01	5.28593E-10
13	13	1.90000E+03	0.00000E+00	1.99099E+01	1.99076E+01	5.75846E-10
14	14	1.90000E+03	0.00000E+00	1.99119E+01	1.99096E+01	2.94776E-10
15	15	1.90000E+03	0.00000E+00	1.99144E+01	1.99119E+01	6.27149E-10
16	16	1.90000E+03	0.00000E+00	1.99174E+01	1.99144E+01	6.64247E-10
17	17	1.90000E+03	0.00000E+00	1.99209E+01	1.99177E+01	6.88272E-10
18	18	1.90000E+03	0.00000E+00	1.99231E+01	1.99197E+01	2.66816E-10
19	19	1.90000E+03	0.00000E+00	1.99025E+01	1.99011E+01	3.22990E-10
20	20	1.90000E+03	0.00000E+00	1.99046E+01	1.99029E+01	1.38154E-09
21	21	1.90000E+03	0.00000E+00	1.99070E+01	1.99051E+01	1.69856E-09
22	22	1.90000E+03	0.00000E+00	1.99096E+01	1.99075E+01	1.85838E-09
23	23	1.90000E+03	0.00000E+00	1.99117E+01	1.99094E+01	9.46985E-10
24	24	1.90000E+03	0.00000E+00	1.99141E+01	1.99115E+01	2.02001E-09
25	25	1.90000E+03	0.00000E+00	1.99173E+01	1.99145E+01	2.13877E-09
26	26	1.90000E+03	0.00000E+00	1.99208E+01	1.99176E+01	2.20800E-09
27	27	1.90000E+03	0.00000E+00	1.99229E+01	1.99196E+01	8.46066E-10
28	28	1.90000E+03	0.00000E+00	1.99017E+01	1.99003E+01	2.07111E-09
29	29	1.90000E+03	0.00000E+00	1.99037E+01	1.99021E+01	8.92722E-09
30	30	1.90000E+03	0.00000E+00	1.99060E+01	1.99042E+01	1.09969E-08
31	31	1.90000E+03	0.00000E+00	1.99085E+01	1.99065E+01	1.19944E-08
32	32	1.90000E+03	0.00000E+00	1.99107E+01	1.99085E+01	6.09801E-09
33	33	1.90000E+03	0.00000E+00	1.99133E+01	1.99108E+01	1.29705E-08
34	34	1.90000E+03	0.00000E+00	1.99164E+01	1.99137E+01	1.37214E-08
35	35	1.90000E+03	0.00000E+00	1.99199E+01	1.99168E+01	1.41739E-08
36	36	1.90000E+03	0.00000E+00	1.99217E+01	1.99185E+01	5.39824E-09
37	37	1.90000E+03	0.00000E+00	1.99042E+01	1.99026E+01	3.70879E-09
38	38	1.90000E+03	0.00000E+00	1.99063E+01	1.99045E+01	1.53601E-08
39	39	1.90000E+03	0.00000E+00	1.99089E+01	1.99068E+01	1.79020E-08
40	40	1.90000E+03	0.00000E+00	1.99115E+01	1.99091E+01	1.83409E-08
41	41	1.90000E+03	0.00000E+00	1.99136E+01	1.99110E+01	8.73274E-09
42	42	1.90000E+03	0.00000E+00	1.99161E+01	1.99134E+01	1.74812E-08
43	43	1.90000E+03	0.00000E+00	1.99196E+01	1.99165E+01	1.77094E-08
44	44	1.90000E+03	0.00000E+00	1.99231E+01	1.99198E+01	1.81724E-08
45	45	1.90000E+03	0.00000E+00	1.99251E+01	1.99216E+01	7.00439E-09
46	46	1.90000E+03	0.00000E+00	1.99028E+01	1.99013E+01	1.13927E-10
47	47	1.90000E+03	0.00000E+00	1.99048E+01	1.99031E+01	4.89522E-10
48	48	1.90000E+03	0.00000E+00	1.99072E+01	1.99053E+01	6.02379E-10
49	49	1.90000E+03	0.00000E+00	1.99098E+01	1.99076E+01	6.56178E-10
50	50	1.90000E+03	0.00000E+00	1.99119E+01	1.99096E+01	3.33698E-10
51	51	1.90000E+03	0.00000E+00	1.99143E+01	1.99117E+01	7.14054E-10
52	52	1.90000E+03	0.00000E+00	1.99174E+01	1.99146E+01	7.55090E-10
53	53	1.90000E+03	0.00000E+00	1.99210E+01	1.99178E+01	7.75654E-10
54	54	1.90000E+03	0.00000E+00	1.99232E+01	1.99198E+01	2.92257E-10
55	55	1.90000E+03	0.00000E+00	1.99020E+01	1.99006E+01	3.41792E-10
56	56	1.90000E+03	0.00000E+00	1.99040E+01	1.99024E+01	1.46267E-09
57	57	1.90000E+03	0.00000E+00	1.99063E+01	1.99046E+01	1.79394E-09
58	58	1.90000E+03	0.00000E+00	1.99089E+01	1.99069E+01	1.95279E-09
59	59	1.90000E+03	0.00000E+00	1.99109E+01	1.99087E+01	9.91807E-10
60	60	1.90000E+03	0.00000E+00	1.99132E+01	1.99108E+01	2.11492E-09
61	61	1.90000E+03	0.00000E+00	1.99163E+01	1.99135E+01	2.23510E-09
62	62	1.90000E+03	0.00000E+00	1.99197E+01	1.99167E+01	2.30431E-09
63	63	1.90000E+03	0.00000E+00	1.99217E+01	1.99186E+01	8.77083E-10
64	64	1.90000E+03	0.00000E+00	1.99018E+01	1.99003E+01	2.01610E-09
65	65	1.90000E+03	0.00000E+00	1.99038E+01	1.99022E+01	8.67781E-09
66	66	1.90000E+03	0.00000E+00	1.99062E+01	1.99043E+01	1.06691E-08
67	67	1.90000E+03	0.00000E+00	1.99086E+01	1.99066E+01	1.15792E-08
68	68	1.90000E+03	0.00000E+00	1.99107E+01	1.99086E+01	5.85265E-09
69	69	1.90000E+03	0.00000E+00	1.99134E+01	1.99109E+01	1.23695E-08
70	70	1.90000E+03	0.00000E+00	1.99164E+01	1.99137E+01	1.31011E-08
71	71	1.90000E+03	0.00000E+00	1.99199E+01	1.99168E+01	1.35903E-08
72	72	1.90000E+03	0.00000E+00	1.99217E+01	1.99185E+01	5.20951E-09
73	73	1.90000E+03	0.00000E+00	1.99042E+01	1.99025E+01	3.74137E-09
74	74	1.90000E+03	0.00000E+00	1.99064E+01	1.99045E+01	1.55700E-08
75	75	1.90000E+03	0.00000E+00	1.99088E+01	1.99068E+01	1.81626E-08
76	76	1.90000E+03	0.00000E+00	1.99114E+01	1.99091E+01	1.85155E-08
77	77	1.90000E+03	0.00000E+00	1.99136E+01	1.99111E+01	8.77625E-09
78	78	1.90000E+03	0.00000E+00	1.99161E+01	1.99134E+01	1.75372E-08
79	79	1.90000E+03	0.00000E+00	1.99195E+01	1.99164E+01	1.77652E-08
80	80	1.90000E+03	0.00000E+00	1.99231E+01	1.99198E+01	1.83269E-08
81	81	1.90000E+03	0.00000E+00	1.99250E+01	1.99214E+01	7.06431E-09

0 SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	1	1.99079E+01	2	1.99078E+01	3	1.99077E+01	4	1.99075E+01	5	1.99072E+01	6	1.99068E+01	7	1.99063E+01
2	1	1.99100E+01	2	1.99099E+01	3	1.99098E+01	4	1.99095E+01	5	1.99092E+01	6	1.99088E+01	7	1.99082E+01
3	1	1.99129E+01	2	1.99128E+01	3	1.99126E+01	4	1.99124E+01	5	1.99120E+01	6	1.99115E+01	7	1.99109E+01
4	1	1.99158E+01	2	1.99157E+01	3	1.99155E+01	4	1.99152E+01	5	1.99148E+01	6	1.99143E+01	7	1.99137E+01
5	1	1.99179E+01	2	1.99178E+01	3	1.99177E+01	4	1.99173E+01	5	1.99169E+01	6	1.99164E+01	7	1.99157E+01
6	1	1.99208E+01	2	1.99207E+01	3	1.99205E+01	4	1.99202E+01	5	1.99197E+01	6	1.99191E+01	7	1.99184E+01
7	1	1.99244E+01	2	1.99243E+01	3	1.99241E+01	4	1.99237E+01	5	1.99232E+01	6	1.99225E+01	7	1.99218E+01
8	1	1.99280E+01	2	1.99280E+01	3	1.99277E+01	4	1.99273E+01	5	1.99268E+01	6	1.99261E+01	7	1.99253E+01
9	1	1.99301E+01	2	1.99300E+01	3	1.99298E+01	4	1.99294E+01	5	1.99288E+01	6	1.99281E+01	7	1.99272E+01
10	1	1.99027E+01	2	1.99027E+01	3	1.99026E+01	4	1.99024E+01	5	1.99022E+01	6	1.99020E+01	7	1.99016E+01
11	1	1.99047E+01	2	1.99047E+01	3	1.99046E+01	4	1.99044E+01	5	1.99042E+01	6	1.99039E+01	7	1.99035E+01
12	1	1.99071E+01	2	1.99071E+01	3	1.99070E+01	4	1.99068E+01	5	1.99065E+01	6	1.99062E+01	7	1.99058E+01
13	1	1.99099E+01	2	1.99098E+01	3	1.99097E+01	4	1.99094E+01	5	1.99091E+01	6	1.99087E+01	7	1.99082E+01
14	1	1.99119E+01	2	1.99118E+01	3	1.99117E+01	4	1.99114E+01	5	1.99111E+01	6	1.99107E+01	7	1.99102E+01
15	1	1.99144E+01	2	1.99143E+01	3	1.99142E+01	4	1.99139E+01	5	1.99135E+01	6	1.99131E+01	7	1.99125E+01
16	1	1.99174E+01	2	1.99173E+01	3	1.99171E+01	4	1.99168E+01	5	1.99164E+01	6	1.99159E+01	7	1.99152E+01
17	1	1.99209E+01	2	1.99209E+01	3	1.99207E+01	4	1.99203E+01	5	1.99199E+01	6	1.99193E+01	7	1.99186E+01
18	1	1.99231E+01	2	1.99230E+01	3	1.99228E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99206E+01
19	1	1.99025E+01	2	1.99025E+01	3	1.99024E+01	4	1.99023E+01	5	1.99021E+01	6	1.99018E+01	7	1.99015E+01
20	1	1.99046E+01	2	1.99046E+01	3	1.99045E+01	4	1.99043E+01	5	1.99040E+01	6	1.99037E+01	7	1.99034E+01
21	1	1.99070E+01	2	1.99069E+01	3	1.99068E+01	4	1.99066E+01	5	1.99064E+01	6	1.99060E+01	7	1.99056E+01
22	1	1.99096E+01	2	1.99096E+01	3	1.99094E+01	4	1.99092E+01	5	1.99089E+01	6	1.99085E+01	7	1.99081E+01
23	1	1.99117E+01	2	1.99116E+01	3	1.99115E+01	4	1.99113E+01	5	1.99109E+01	6	1.99105E+01	7	1.99100E+01
24	1	1.99141E+01	2	1.99141E+01	3	1.99139E+01	4	1.99137E+01	5	1.99133E+01	6	1.99129E+01	7	1.99123E+01
25	1	1.99173E+01	2	1.99173E+01	3	1.99171E+01	4	1.99168E+01	5	1.99164E+01	6	1.99159E+01	7	1.99153E+01
26	1	1.99208E+01	2	1.99208E+01	3	1.99206E+01	4	1.99202E+01	5	1.99198E+01	6	1.99192E+01	7	1.99185E+01
27	1	1.99229E+01	2	1.99228E+01	3	1.99226E+01	4	1.99223E+01	5	1.99218E+01	6	1.99212E+01	7	1.99205E+01
28	1	1.99017E+01	2	1.99016E+01	3	1.99015E+01	4	1.99014E+01	5	1.99012E+01	6	1.99010E+01	7	1.99007E+01
29	1	1.99037E+01	2	1.99037E+01	3	1.99036E+01	4	1.99034E+01	5	1.99032E+01	6	1.99029E+01	7	1.99025E+01
30	1	1.99060E+01	2	1.99060E+01	3	1.99058E+01	4	1.99057E+01	5	1.99054E+01	6	1.99051E+01	7	1.99047E+01
31	1	1.99085E+01	2	1.99085E+01	3	1.99084E+01	4	1.99081E+01	5	1.99078E+01	6	1.99075E+01	7	1.99070E+01
32	1	1.99107E+01	2	1.99106E+01	3	1.99105E+01	4	1.99103E+01	5	1.99100E+01	6	1.99096E+01	7	1.99091E+01
33	1	1.99133E+01	2	1.99132E+01	3	1.99131E+01	4	1.99128E+01	5	1.99125E+01	6	1.99120E+01	7	1.99115E+01
34	1	1.99164E+01	2	1.99164E+01	3	1.99162E+01	4	1.99159E+01	5	1.99155E+01	6	1.99151E+01	7	1.99145E+01
35	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99177E+01
36	1	1.99217E+01	2	1.99216E+01	3	1.99214E+01	4	1.99211E+01	5	1.99206E+01	6	1.99201E+01	7	1.99193E+01
37	1	1.99042E+01	2	1.99042E+01	3	1.99041E+01	4	1.99039E+01	5	1.99037E+01	6	1.99034E+01	7	1.99030E+01
38	1	1.99063E+01	2	1.99063E+01	3	1.99061E+01	4	1.99060E+01	5	1.99057E+01	6	1.99054E+01	7	1.99050E+01
39	1	1.99089E+01	2	1.99089E+01	3	1.99088E+01	4	1.99085E+01	5	1.99082E+01	6	1.99079E+01	7	1.99074E+01
40	1	1.99115E+01	2	1.99114E+01	3	1.99113E+01	4	1.99110E+01	5	1.99107E+01	6	1.99102E+01	7	1.99097E+01
41	1	1.99136E+01	2	1.99135E+01	3	1.99134E+01	4	1.99131E+01	5	1.99128E+01	6	1.99123E+01	7	1.99118E+01
42	1	1.99161E+01	2	1.99161E+01	3	1.99159E+01	4	1.99156E+01	5	1.99152E+01	6	1.99147E+01	7	1.99142E+01
43	1	1.99196E+01	2	1.99195E+01	3	1.99193E+01	4	1.99190E+01	5	1.99186E+01	6	1.99181E+01	7	1.99174E+01
44	1	1.99231E+01	2	1.99231E+01	3	1.99229E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99207E+01
45	1	1.99251E+01	2	1.99250E+01	3	1.99248E+01	4	1.99245E+01	5	1.99240E+01	6	1.99233E+01	7	1.99226E+01
46	1	1.99028E+01	2	1.99028E+01	3	1.99027E+01	4	1.99025E+01	5	1.99023E+01	6	1.99020E+01	7	1.99017E+01
47	1	1.99048E+01	2	1.99047E+01	3	1.99046E+01	4	1.99044E+01	5	1.99042E+01	6	1.99039E+01	7	1.99035E+01
48	1	1.99072E+01	2	1.99072E+01	3	1.99070E+01	4	1.99068E+01	5	1.99066E+01	6	1.99062E+01	7	1.99058E+01
49	1	1.99098E+01	2	1.99098E+01	3	1.99096E+01	4	1.99094E+01	5	1.99091E+01	6	1.99087E+01	7	1.99082E+01
50	1	1.99119E+01	2	1.99118E+01	3	1.99117E+01	4	1.99114E+01	5	1.99111E+01	6	1.99107E+01	7	1.99102E+01
51	1	1.99143E+01	2	1.99143E+01	3	1.99141E+01	4	1.99138E+01	5	1.99134E+01	6	1.99130E+01	7	1.99124E+01
52	1	1.99174E+01	2	1.99174E+01	3	1.99172E+01	4	1.99169E+01	5	1.99165E+01	6	1.99160E+01	7	1.99154E+01
53	1	1.99210E+01	2	1.99209E+01	3	1.99207E+01	4	1.99204E+01	5	1.99199E+01	6	1.99194E+01	7	1.99187E+01
54	1	1.99232E+01	2	1.99231E+01	3	1.99229E+01	4	1.99225E+01	5	1.99221E+01	6	1.99215E+01	7	1.99207E+01
55	1	1.99020E+01	2	1.99020E+01	3	1.99019E+01	4	1.99017E+01	5	1.99015E+01	6	1.99013E+01	7	1.99010E+01
56	1	1.99040E+01	2	1.99040E+01	3	1.99039E+01	4	1.99037E+01	5	1.99035E+01	6	1.99032E+01	7	1.99028E+01
57	1	1.99063E+01	2	1.99063E+01	3	1.99062E+01	4	1.99060E+01	5	1.99057E+01	6	1.99054E+01	7	1.99050E+01
58	1	1.99089E+01	2	1.99088E+01	3	1.99087E+01	4	1.99085E+01	5	1.99082E+01	6	1.99078E+01	7	1.99074E+01
59	1	1.99109E+01	2	1.99108E+01	3	1.99107E+01	4	1.99105E+01	5	1.99101E+01	6	1.99097E+01	7	1.99093E+01
60	1	1.99132E+01	2	1.99132E+01	3	1.99130E+01	4	1.99128E+01	5	1.99124E+01	6	1.99120E+01	7	1.99114E+01
61	1	1.99163E+01	2	1.99162E+01	3	1.99160E+01	4	1.99157E+01	5	1.99154E+01	6	1.99149E+01	7	1.99143E+01
62	1	1.99197E+01	2	1.99196E+01	3	1.99194E+01	4	1.99191E+01	5	1.99187E+01	6	1.99182E+01	7	1.99175E+01
63	1	1.99217E+01	2	1.99217E+01	3	1.99215E+01	4	1.99212E+01	5	1.99207E+01	6	1.99202E+01	7	1.99195E+01
64	1	1.99018E+01	2	1.99017E+01	3	1.99016E+01	4	1.99015E+01	5	1.99013E+01	6	1.99010E+01	7	1.99007E+01
65	1	1.99038E+01	2	1.99037E+01	3	1.99036E+01	4	1.99035E+01	5	1.99032E+01	6	1.99030E+01	7	1.99026E+01
66	1	1.99062E+01	2	1.99061E+01	3	1.99060E+01	4	1.99058E+01	5	1.99056E+01	6	1.99052E+01	7	1.99048E+01
67	1	1.99086E+01	2	1.99086E+01	3	1.99084E+01	4	1.99082E+01	5	1.99079E+01	6	1.99076E+01	7	1.99072E+01
68	1	1.99107E+01	2	1.99107E+01	3	1.99105E+01	4	1.99103E+01	5	1.99100E+01	6	1.99096E+01	7	1.99092E+01
69	1	1.99134E+01	2	1.99133E+01	3	1.99132E+01	4	1.99129E+01	5	1.99126E+01	6	1.99121E+01	7	1.99116E+01
70	1	1.99164E+01	2	1.99163E+01	3	1.99162E+01	4	1.99159E+01	5	1.99155E+01	6	1.99150E+01	7	1.99144E+01
71	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99176E+01
72	1	1.99217E+01	2	1.99216E+01	3	1.99214E+01	4	1.99211E+01	5	1.99206E+01	6	1.99201E+01	7	1.99194E+01
73	1	1.99042E+01	2	1.99041E+01	3	1.99040E+01	4	1.99039E+01	5	1.99036E+01	6	1.99033E+01	7	1.99030E+01
74	1	1.99064E+01	2	1.99063E+01	3	1.99062E+01	4	1.99060E+01	5	1.99058E+01	6	1.99054E+01	7	1.99050E+01
75	1	1.99088E+01	2	1.99088E+01	3	1.99087E+01	4	1.99085E+01	5	1.99082E+01	6	1.99078E+01	7	1.99074E+01
76	1	1.99114E+01	2	1.99114E+01	3	1.99112E+01	4	1.99110E+01	5	1.99106E+01	6	1.99102E+01	7	1.99097E+01
77	1	1.99136E+01	2	1.99136E+01	3	1.99134E+01	4	1.99132E+01	5	1.99128E+01	6	1.99124E+01	7	1.99118E+01
78	1	1.99161E+01	2	1.99161E+01	3	1.99159E+01	4	1.99156E+01	5	1.99152E+01	6	1.99147E+01	7	1.99141E+01
79	1	1.99195E+01	2	1.99194E+01	3	1.99193E+01	4	1.99189E+01	5	1.99185E+01	6	1.99179E+01	7	1.99173E+01
80	1	1.99231E+01	2	1.99230E+01	3	1.99228E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99207E+01
81	1	1.99250E+01	2	1.99250E+01	3	1.99248E+01	4	1.99244E+01	5	1.99239E+01	6	1.99233E+01	7	1.99225E+01

0 SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	8	1.99058E+01	9	1.99052E+01	10	1.99046E+01	11	1.99040E+01	12	1.99040E+01	13	1.99037E+01	14	1.99026E+01
2	8	1.99076E+01	9	1.99069E+01	10	1.99062E+01	11	1.99055E+01	12	1.99055E+01	13	1.99052E+01	14	1.99041E+01
3	8	1.99103E+01	9	1.99095E+01	10	1.99086E+01	11	1.99076E+01	12	1.99076E+01	13	1.99071E+01	14	1.99057E+01
4	8	1.99130E+01	9	1.99121E+01	10	1.99112E+01	11	1.99102E+01	12	1.99102E+01	13	1.99095E+01	14	1.99081E+01
5	8	1.99150E+01	9	1.99141E+01	10	1.99131E+01	11	1.99121E+01	12	1.99120E+01	13	1.99114E+01	14	1.99098E+01
6	8	1.99176E+01	9	1.99166E+01	10	1.99157E+01	11	1.99148E+01	12	1.99147E+01	13	1.99143E+01	14	1.99130E+01
7	8	1.99209E+01	9	1.99199E+01	10	1.99187E+01	11	1.99175E+01	12	1.99174E+01	13	1.99167E+01	14	1.99151E+01
8	8	1.99243E+01	9	1.99232E+01	10	1.99220E+01	11	1.99206E+01	12	1.99206E+01	13	1.99197E+01	14	1.99180E+01
9	8	1.99262E+01	9	1.99250E+01	10	1.99237E+01	11	1.99223E+01	12	1.99223E+01	13	1.99215E+01	14	1.99202E+01
10	8	1.99013E+01	9	1.99008E+01	10	1.99004E+01	11	1.99000E+01	12	1.99000E+01	13	1.98998E+01	14	1.98986E+01
11	8	1.99031E+01	9	1.99027E+01	10	1.99022E+01	11	1.99017E+01	12	1.99017E+01	13	1.99015E+01	14	1.99004E+01
12	8	1.99053E+01	9	1.99048E+01	10	1.99042E+01	11	1.99035E+01	12	1.99035E+01	13	1.99031E+01	14	1.99016E+01
13	8	1.99077E+01	9	1.99070E+01	10	1.99064E+01	11	1.99058E+01	12	1.99058E+01	13	1.99055E+01	14	1.99042E+01
14	8	1.99096E+01	9	1.99090E+01	10	1.99083E+01	11	1.99077E+01	12	1.99077E+01	13	1.99074E+01	14	1.99060E+01
15	8	1.99119E+01	9	1.99112E+01	10	1.99104E+01	11	1.99097E+01	12	1.99097E+01	13	1.99094E+01	14	1.99081E+01
16	8	1.99145E+01	9	1.99137E+01	10	1.99129E+01	11	1.99119E+01	12	1.99119E+01	13	1.99113E+01	14	1.99100E+01
17	8	1.99178E+01	9	1.99169E+01	10	1.99158E+01	11	1.99147E+01	12	1.99147E+01	13	1.99141E+01	14	1.99126E+01
18	8	1.99198E+01	9	1.99189E+01	10	1.99179E+01	11	1.99167E+01	12	1.99167E+01	13	1.99161E+01	14	1.99149E+01
19	8	1.99011E+01	9	1.99007E+01	10	1.99002E+01	11	1.98999E+01	12	1.98999E+01	13	1.98997E+01	14	1.98985E+01
20	8	1.99030E+01	9	1.99025E+01	10	1.99020E+01	11	1.99016E+01	12	1.99016E+01	13	1.99014E+01	14	1.99002E+01
21	8	1.99052E+01	9	1.99046E+01	10	1.99041E+01	11	1.99036E+01	12	1.99036E+01	13	1.99033E+01	14	1.99021E+01
22	8	1.99076E+01	9	1.99070E+01	10	1.99064E+01	11	1.99058E+01	12	1.99058E+01	13	1.99056E+01	14	1.99045E+01
23	8	1.99094E+01	9	1.99087E+01	10	1.99081E+01	11	1.99074E+01	12	1.99074E+01	13	1.99072E+01	14	1.99060E+01
24	8	1.99117E+01	9	1.99109E+01	10	1.99101E+01	11	1.99091E+01	12	1.99091E+01	13	1.99086E+01	14	1.99073E+01
25	8	1.99146E+01	9	1.99138E+01	10	1.99129E+01	11	1.99119E+01	12	1.99119E+01	13	1.99114E+01	14	1.99102E+01
26	8	1.99177E+01	9	1.99168E+01	10	1.99158E+01	11	1.99150E+01	12	1.99150E+01	13	1.99146E+01	14	1.99133E+01
27	8	1.99197E+01	9	1.99188E+01	10	1.99178E+01	11	1.99166E+01	12	1.99166E+01	13	1.99160E+01	14	1.99146E+01
28	8	1.99003E+01	9	1.99000E+01	10	1.98995E+01	11	1.98990E+01	12	1.98990E+01	13	1.98986E+01	14	1.98972E+01
29	8	1.99021E+01	9	1.99017E+01	10	1.99012E+01	11	1.99008E+01	12	1.99008E+01	13	1.99006E+01	14	1.98993E+01
30	8	1.99043E+01	9	1.99038E+01	10	1.99032E+01	11	1.99027E+01	12	1.99027E+01	13	1.99025E+01	14	1.99012E+01
31	8	1.99065E+01	9	1.99060E+01	10	1.99054E+01	11	1.99048E+01	12	1.99048E+01	13	1.99046E+01	14	1.99035E+01
32	8	1.99086E+01	9	1.99080E+01	10	1.99073E+01	11	1.99067E+01	12	1.99067E+01	13	1.99064E+01	14	1.99051E+01
33	8	1.99109E+01	9	1.99102E+01	10	1.99095E+01	11	1.99086E+01	12	1.99086E+01	13	1.99081E+01	14	1.99067E+01
34	8	1.99138E+01	9	1.99130E+01	10	1.99122E+01	11	1.99115E+01	12	1.99115E+01	13	1.99111E+01	14	1.99100E+01
35	8	1.99169E+01	9	1.99161E+01	10	1.99152E+01	11	1.99141E+01	12	1.99141E+01	13	1.99135E+01	14	1.99121E+01
36	8	1.99185E+01	9	1.99176E+01	10	1.99167E+01	11	1.99158E+01	12	1.99158E+01	13	1.99154E+01	14	1.99143E+01
37	8	1.99026E+01	9	1.99021E+01	10	1.99016E+01	11	1.99012E+01	12	1.99012E+01	13	1.99010E+01	14	1.98997E+01
38	8	1.99045E+01	9	1.99040E+01	10	1.99034E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99015E+01
39	8	1.99069E+01	9	1.99063E+01	10	1.99057E+01	11	1.99049E+01	12	1.99049E+01	13	1.99044E+01	14	1.99031E+01
40	8	1.99091E+01	9	1.99085E+01	10	1.99078E+01	11	1.99072E+01	12	1.99072E+01	13	1.99069E+01	14	1.99056E+01
41	8	1.99112E+01	9	1.99104E+01	10	1.99096E+01	11	1.99086E+01	12	1.99086E+01	13	1.99081E+01	14	1.99068E+01
42	8	1.99135E+01	9	1.99127E+01	10	1.99119E+01	11	1.99109E+01	12	1.99109E+01	13	1.99104E+01	14	1.99090E+01
43	8	1.99166E+01	9	1.99157E+01	10	1.99147E+01	11	1.99136E+01	12	1.99136E+01	13	1.99130E+01	14	1.99115E+01
44	8	1.99199E+01	9	1.99190E+01	10	1.99180E+01	11	1.99168E+01	12	1.99168E+01	13	1.99162E+01	14	1.99148E+01
45	8	1.99217E+01	9	1.99207E+01	10	1.99197E+01	11	1.99184E+01	12	1.99184E+01	13	1.99178E+01	14	1.99165E+01
46	8	1.99013E+01	9	1.99009E+01	10	1.99004E+01	11	1.99000E+01	12	1.99000E+01	13	1.98998E+01	14	1.98986E+01
47	8	1.99031E+01	9	1.99026E+01	10	1.99021E+01	11	1.99017E+01	12	1.99017E+01	13	1.99014E+01	14	1.99003E+01
48	8	1.99054E+01	9	1.99048E+01	10	1.99043E+01	11	1.99037E+01	12	1.99037E+01	13	1.99035E+01	14	1.99022E+01
49	8	1.99077E+01	9	1.99070E+01	10	1.99063E+01	11	1.99054E+01	12	1.99054E+01	13	1.99050E+01	14	1.99036E+01
50	8	1.99097E+01	9	1.99091E+01	10	1.99084E+01	11	1.99075E+01	12	1.99075E+01	13	1.99070E+01	14	1.99057E+01
51	8	1.99117E+01	9	1.99110E+01	10	1.99102E+01	11	1.99093E+01	12	1.99093E+01	13	1.99088E+01	14	1.99074E+01
52	8	1.99147E+01	9	1.99139E+01	10	1.99130E+01	11	1.99120E+01	12	1.99120E+01	13	1.99113E+01	14	1.99099E+01
53	8	1.99179E+01	9	1.99171E+01	10	1.99161E+01	11	1.99150E+01	12	1.99150E+01	13	1.99144E+01	14	1.99131E+01
54	8	1.99199E+01	9	1.99189E+01	10	1.99179E+01	11	1.99170E+01	12	1.99170E+01	13	1.99166E+01	14	1.99154E+01
55	8	1.99006E+01	9	1.99002E+01	10	1.98998E+01	11	1.98995E+01	12	1.98995E+01	13	1.98993E+01	14	1.98982E+01
56	8	1.99024E+01	9	1.99020E+01	10	1.99015E+01	11	1.99011E+01	12	1.99011E+01	13	1.99009E+01	14	1.98996E+01
57	8	1.99046E+01	9	1.99041E+01	10	1.99036E+01	11	1.99029E+01	12	1.99029E+01	13	1.99025E+01	14	1.99011E+01
58	8	1.99069E+01	9	1.99064E+01	10	1.99057E+01	11	1.99050E+01	12	1.99050E+01	13	1.99046E+01	14	1.99034E+01
59	8	1.99087E+01	9	1.99081E+01	10	1.99075E+01	11	1.99069E+01	12	1.99069E+01	13	1.99067E+01	14	1.99054E+01
60	8	1.99108E+01	9	1.99101E+01	10	1.99094E+01	11	1.99088E+01	12	1.99088E+01	13	1.99085E+01	14	1.99072E+01
61	8	1.99136E+01	9	1.99128E+01	10	1.99120E+01	11	1.99113E+01	12	1.99113E+01	13	1.99109E+01	14	1.99098E+01
62	8	1.99168E+01	9	1.99160E+01	10	1.99151E+01	11	1.99140E+01	12	1.99140E+01	13	1.99134E+01	14	1.99122E+01
63	8	1.99187E+01	9	1.99178E+01	10	1.99168E+01	11	1.99157E+01	12	1.99157E+01	13	1.99150E+01	14	1.99136E+01
64	8	1.99004E+01	9	1.99000E+01	10	1.98995E+01	11	1.98992E+01	12	1.98992E+01	13	1.98991E+01	14	1.98979E+01
65	8	1.99022E+01	9	1.99017E+01	10	1.99013E+01	11	1.99008E+01	12	1.99008E+01	13	1.99006E+01	14	1.98994E+01
66	8	1.99044E+01	9	1.99039E+01	10	1.99033E+01	11	1.99026E+01	12	1.99026E+01	13	1.99022E+01	14	1.99007E+01
67	8	1.99067E+01	9	1.99061E+01	10	1.99055E+01	11	1.99048E+01	12	1.99048E+01	13	1.99043E+01	14	1.99029E+01
68	8	1.99086E+01	9	1.99081E+01	10	1.99074E+01	11	1.99066E+01	12	1.99066E+01	13	1.99061E+01	14	1.99045E+01
69	8	1.99109E+01	9	1.99102E+01	10	1.99095E+01	11	1.99088E+01	12	1.99088E+01	13	1.99085E+01	14	1.99074E+01
70	8	1.99137E+01	9	1.99130E+01	10	1.99121E+01	11	1.99112E+01	12	1.99112E+01	13	1.99106E+01	14	1.99090E+01
71	8	1.99169E+01	9	1.99160E+01	10	1.99151E+01	11	1.99140E+01	12	1.99140E+01	13	1.99134E+01	14	1.99117E+01
72	8	1.99186E+01	9	1.99177E+01	10	1.99167E+01	11	1.99156E+01	12	1.99156E+01	13	1.99149E+01	14	1.99132E+01
73	8	1.99026E+01	9	1.99022E+01	10	1.99017E+01	11	1.99010E+01	12	1.99010E+01	13	1.99006E+01	14	1.98992E+01
74	8	1.99045E+01	9	1.99040E+01	10	1.99035E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99016E+01
75	8	1.99069E+01	9	1.99063E+01	10	1.99057E+01	11	1.99049E+01	12	1.99049E+01	13	1.99045E+01	14	1.99032E+01
76	8	1.99092E+01	9	1.99085E+01	10	1.99079E+01	11	1.99072E+01	12	1.99072E+01	13	1.99070E+01	14	1.99056E+01
77	8	1.99112E+01	9	1.99105E+01	10	1.99096E+01	11	1.99087E+01	12	1.99087E+01	13	1.99082E+01	14	1.99069E+01
78	8	1.99135E+01	9	1.99127E+01	10	1.99119E+01	11	1.99109E+01	12	1.99109E+01	13	1.99104E+01	14	1.99091E+01
79	8	1.99165E+01	9	1.99156E+01	10	1.99147E+01	11	1.99139E+01	12	1.99139E+01	13	1.99135E+01	14	1.99123E+01
80	8	1.99199E+01	9	1.99189E+01	10	1.99179E+01	11	1.99167E+01	12	1.99167E+01	13	1.99160E+01	14	1.99145E+01
81	8	1.99216E+01	9	1.99205E+01	10	1.99193E+01	11	1.99181E+01	12	1.99181E+01	13	1.99175E+01	14	1.99160E+01

EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE

ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-10-17

0 CPU TIME = 213.17

OJUNCTION NUMBER	CONNECTING VOLUMES	JCT. FLOW (TON/HR)	JCT. ENTH (KC/KG)	JCT. SPVL (M**3/KG)	P R E S S U R E D I F F E R E N T I A L S STAG ATA	ELEV ATA	FRIC ATA	ACCL ATA
1	82 TO 10	2.24435E+01	1.99994E+01	1.00147E-03	7.08665E-01	-9.89207E-02	-6.09683E-01	6.13053E-05
2	1 TO 20	2.24435E+01	2.00002E+01	1.00148E-03	6.94868E-02	-3.69568E-02	-3.25457E-02	-1.56824E-05
3	2 TO 30	2.24435E+01	1.99999E+01	1.00149E-03	1.13230E-01	-4.92755E-02	-6.39906E-02	-3.62638E-05
4	3 TO 40	2.24435E+01	1.99995E+01	1.00149E-03	1.04528E-01	-4.92752E-02	-5.52584E-02	-5.14044E-06
5	4 TO 50	2.24435E+01	1.99993E+01	1.00150E-03	9.60549E-02	-3.69563E-02	-5.90895E-02	9.06643E-06
6	5 TO 60	2.24435E+01	1.99993E+01	1.00150E-03	8.73246E-02	-3.69560E-02	-5.03483E-02	2.02818E-05
7	6 TO 70	2.24435E+01	1.99994E+01	1.00151E-03	1.22306E-01	-4.92745E-02	-7.30671E-02	-3.59810E-05
8	7 TO 80	2.24435E+01	1.99993E+01	1.00151E-03	1.22432E-01	-4.92742E-02	-7.31548E-02	2.88363E-06
9	8 TO 90	2.24435E+01	1.99995E+01	1.00152E-03	7.86305E-02	-3.69555E-02	-4.17064E-02	-3.14389E-05
10	9 TO 910	2.24435E+01	1.99996E+01	1.00152E-03	6.70988E-01	-5.17090E-01	-1.53949E-01	-5.04635E-05
11	83 TO 100	1.84283E+02	1.99969E+01	1.00147E-03	6.79607E-01	-9.89208E-02	-5.80604E-01	8.25496E-05
12	10 TO 110	1.84283E+02	1.99976E+01	1.00148E-03	8.18695E-02	-3.69569E-02	-4.49624E-02	-4.97504E-05
13	11 TO 120	1.84283E+02	1.99971E+01	1.00149E-03	1.09274E-01	-4.92756E-02	-6.00062E-02	-7.62411E-06
14	12 TO 130	1.84283E+02	1.99965E+01	1.00149E-03	1.09389E-01	-4.92753E-02	-6.00821E-02	3.11944E-05
15	13 TO 140	1.84283E+02	1.99960E+01	1.00150E-03	1.02065E-01	-3.69564E-02	-6.51191E-02	-9.94501E-06
16	14 TO 150	1.84283E+02	1.99958E+01	1.00150E-03	8.21170E-02	-3.69560E-02	-4.51747E-02	-1.37063E-05
17	15 TO 160	1.84283E+02	1.99955E+01	1.00151E-03	1.19541E-01	-4.92746E-02	-7.03040E-02	-3.75261E-05
18	16 TO 170	1.84283E+02	1.99951E+01	1.00151E-03	1.29689E-01	-4.92743E-02	-8.04046E-02	1.03039E-05
19	17 TO 180	1.84283E+02	1.99948E+01	1.00152E-03	9.22652E-02	-3.69556E-02	-5.53564E-02	-4.67716E-05
20	18 TO 920	1.84283E+02	1.99948E+01	1.00152E-03	6.73828E-01	-5.17091E-01	-1.56794E-01	-5.63532E-05
21	84 TO 190	5.06977E+02	1.99968E+01	1.00147E-03	6.78070E-01	-9.89208E-02	-5.79069E-01	8.10662E-05
22	19 TO 200	5.06977E+02	1.99976E+01	1.00148E-03	8.19100E-02	-3.69569E-02	-4.49995E-02	-4.64187E-05
23	20 TO 210	5.06977E+02	1.99970E+01	1.00149E-03	1.09345E-01	-4.92756E-02	-6.00551E-02	1.43216E-05
24	21 TO 220	5.06977E+02	1.99965E+01	1.00149E-03	1.09382E-01	-4.92753E-02	-6.01310E-02	-2.40199E-05
25	22 TO 230	5.06977E+02	1.99960E+01	1.00150E-03	1.02162E-01	-3.69564E-02	-6.51777E-02	2.80729E-05
26	23 TO 240	5.06977E+02	1.99958E+01	1.00150E-03	8.21143E-02	-3.69560E-02	-4.52120E-02	-5.36556E-05
27	24 TO 250	5.06977E+02	1.99953E+01	1.00151E-03	1.19620E-01	-4.92746E-02	-7.03637E-02	-1.82315E-05
28	25 TO 260	5.06977E+02	1.99951E+01	1.00151E-03	1.29812E-01	-4.92743E-02	-8.04751E-02	6.22188E-05
29	26 TO 270	5.06977E+02	1.99949E+01	1.00152E-03	9.22883E-02	-3.69556E-02	-5.54044E-02	-7.17332E-05
30	27 TO 930	5.06977E+02	1.99948E+01	1.00152E-03	6.75112E-01	-5.17091E-01	-1.58090E-01	-6.87517E-05
31	85 TO 280	2.88764E+03	1.99966E+01	1.00147E-03	6.74727E-01	-9.89209E-02	-5.75762E-01	4.38371E-05
32	28 TO 290	2.88764E+03	1.99973E+01	1.00148E-03	8.24791E-02	-3.69569E-02	-4.55081E-02	1.40259E-05
33	29 TO 300	2.88764E+03	1.99967E+01	1.00149E-03	1.09999E-01	-4.92756E-02	-6.07345E-02	-1.13808E-05
34	30 TO 310	2.88764E+03	1.99961E+01	1.00149E-03	1.10071E-01	-4.92754E-02	-6.08120E-02	-1.61382E-05
35	31 TO 320	2.88764E+03	1.99956E+01	1.00150E-03	1.02767E-01	-3.69564E-02	-6.57913E-02	1.90892E-05
36	32 TO 330	2.88764E+03	1.99954E+01	1.00150E-03	9.27063E-02	-3.69561E-02	-5.57955E-02	-4.52125E-05
37	33 TO 340	2.88764E+03	1.99949E+01	1.00151E-03	1.20411E-01	-4.92746E-02	-7.11071E-02	2.91383E-05
38	34 TO 350	2.88764E+03	1.99946E+01	1.00151E-03	1.30504E-01	-4.92743E-02	-8.12716E-02	-4.24027E-05
39	35 TO 360	2.88764E+03	1.99943E+01	1.00152E-03	8.29079E-02	-3.69556E-02	-4.59083E-02	4.39922E-05
40	36 TO 940	2.88764E+03	1.99943E+01	1.00152E-03	6.86607E-01	-5.17091E-01	-1.69650E-01	-1.34265E-04
41	86 TO 370	3.52610E+03	1.99973E+01	1.00147E-03	6.93541E-01	-9.89207E-02	-5.94535E-01	8.55282E-05
42	37 TO 380	3.52610E+03	1.99981E+01	1.00148E-03	8.15214E-02	-3.69568E-02	-4.46098E-02	-4.52506E-05
43	38 TO 390	3.52610E+03	1.99976E+01	1.00149E-03	1.08782E-01	-4.92755E-02	-5.95351E-02	-2.82669E-05
44	39 TO 400	3.52610E+03	1.99970E+01	1.00149E-03	1.08925E-01	-4.92752E-02	-5.96104E-02	3.91808E-05
45	40 TO 410	3.52610E+03	1.99967E+01	1.00150E-03	1.01557E-01	-3.69563E-02	-6.46389E-02	-3.82354E-05
46	41 TO 420	3.52610E+03	1.99964E+01	1.00150E-03	8.17575E-02	-3.69560E-02	-4.48204E-02	-1.88582E-05
47	42 TO 430	3.52610E+03	1.99961E+01	1.00151E-03	1.28997E-01	-4.92745E-02	-7.97132E-02	9.70985E-06
48	43 TO 440	3.52610E+03	1.99959E+01	1.00151E-03	1.29060E-01	-4.92742E-02	-7.98112E-02	-2.54249E-05
49	44 TO 450	3.52609E+03	1.99958E+01	1.00152E-03	8.19589E-02	-3.69555E-02	-4.49988E-02	4.57802E-06
50	45 TO 950	3.52609E+03	1.99958E+01	1.00152E-03	6.61519E-01	-5.17091E-01	-1.44514E-01	-8.55731E-05
51	87 TO 460	1.84297E+02	1.99969E+01	1.00147E-03	6.79685E-01	-9.89208E-02	-5.80685E-01	7.98392E-05
52	46 TO 470	1.84297E+02	1.99976E+01	1.00148E-03	8.18816E-02	-3.69569E-02	-4.49685E-02	-4.37154E-05
53	47 TO 480	1.84297E+02	1.99971E+01	1.00149E-03	1.09300E-01	-4.92756E-02	-6.00143E-02	1.04056E-05
54	48 TO 490	1.84297E+02	1.99965E+01	1.00149E-03	1.09330E-01	-4.92753E-02	-6.00902E-02	-3.54178E-05
55	49 TO 500	1.84297E+02	1.99960E+01	1.00150E-03	1.02068E-01	-3.69564E-02	-6.51281E-02	-1.60529E-05
56	50 TO 510	1.84297E+02	1.99958E+01	1.00150E-03	8.21605E-02	-3.69560E-02	-4.51808E-02	2.36805E-05
57	51 TO 520	1.84297E+02	1.99954E+01	1.00151E-03	1.19580E-01	-4.92746E-02	-7.03136E-02	-7.84284E-06
58	52 TO 530	1.84297E+02	1.99951E+01	1.00151E-03	1.29660E-01	-4.92743E-02	-8.04157E-02	-2.96912E-05
59	53 TO 540	1.84297E+02	1.99950E+01	1.00152E-03	9.23703E-02	-3.69556E-02	-5.53640E-02	5.07259E-05
60	54 TO 960	1.84297E+02	1.99950E+01	1.00152E-03	6.73778E-01	-5.17091E-01	-1.56817E-01	-1.29722E-04
61	88 TO 550	4.98027E+02	1.99966E+01	1.00147E-03	6.81879E-01	-9.89208E-02	-5.82874E-01	8.36638E-05
62	55 TO 560	4.98027E+02	1.99973E+01	1.00148E-03	8.22690E-02	-3.69569E-02	-4.53508E-02	-3.86956E-05
63	56 TO 570	4.98027E+02	1.99967E+01	1.00149E-03	1.09769E-01	-4.92756E-02	-6.05260E-02	-3.23275E-05
64	57 TO 580	4.98027E+02	1.99961E+01	1.00149E-03	1.09877E-01	-4.92753E-02	-6.06052E-02	-3.30074E-06
65	58 TO 590	4.98027E+02	1.99956E+01	1.00150E-03	1.01848E-01	-3.69564E-02	-6.48340E-02	5.77668E-05
66	59 TO 600	4.98027E+02	1.99954E+01	1.00150E-03	8.25016E-02	-3.69561E-02	-4.55718E-02	-2.63113E-05
67	60 TO 610	4.98027E+02	1.99949E+01	1.00151E-03	1.19759E-01	-4.92746E-02	-7.04958E-02	-1.10780E-05
68	61 TO 620	4.98026E+02	1.99945E+01	1.00151E-03	1.29485E-01	-4.92743E-02	-8.02601E-02	-4.90741E-05
69	62 TO 630	4.98026E+02	1.99942E+01	1.00152E-03	9.24029E-02	-3.69556E-02	-5.54204E-02	2.68564E-05
70	63 TO 970	4.98026E+02	1.99941E+01	1.00152E-03	6.76221E-01	-5.17091E-01	-1.59237E-01	-1.06881E-04
71	89 TO 640	2.87384E+03	1.99966E+01	1.00147E-03	6.73891E-01	-9.89208E-02	-5.74885E-01	8.44475E-05
72	64 TO 650	2.87384E+03	1.99974E+01	1.00148E-03	8.24015E-02	-3.69569E-02	-4.54844E-02	-3.97813E-05
73	65 TO 660	2.87384E+03	1.99967E+01	1.00149E-03	1.09957E-01	-4.92756E-02	-6.07024E-02	-2.13831E-05
74	66 TO 670	2.87384E+03	1.99961E+01	1.00149E-03	1.10049E-01	-4.92754E-02	-6.07793E-02	-5.87406E-06
75	67 TO 680	2.87384E+03	1.99956E+01	1.00150E-03	1.02880E-01	-3.69564E-02	-6.59127E-02	1.05129E-05
76	68 TO 690	2.87384E+03	1.99954E+01	1.00150E-03	9.28157E-02	-3.69561E-02	-5.58435E-02	1.60944E-05
77	69 TO 700	2.87384E+03	1.99950E+01	1.00151E-03	1.20386E-01	-4.92746E-02	-7.11464E-02	-3.47891E-05
78	70 TO 710	2.87384E+03	1.99946E+01	1.00151E-03	1.30659E-01	-4.92743E-02	-8.13834E-02	1.62214E-06
79	71 TO 720	2.87384E+03	1.99943E+01	1.00152E-03	8.28355E-02	-3.69556E-02	-4.58822E-02	-2.30659E-06
80	72 TO 980	2.87384E+03	1.99942E+01	1.00152E-03	6.76480E-01	-5.17091E-01	-1.59496E-01	-1.07579E-04
81	90 TO 730	3.52639E+03	1.99973E+01	1.00147E-03	6.83660E-01	-9.89206E-02	-5.84698E-01	4.19114E-05
82	73 TO 740	3.52639E+03	1.99980E+01	1.00148E-03	8.15730E-02	-3.69568E-02	-4.46144E-02	1.88614E-06
83	74 TO 750	3.52639E+03	1.99976E+01	1.00149E-03	1.08778E-01	-4.92755E-02	-5.95412E-02	-3.85867E-05
84	75 TO 760	3.52638E+03	1.99971E+01	1.00149E-03	1.08940E-01	-4.92752E-02	-5.96165E-02	4.77831E-05
85	76 TO 770	3.52638E+03	1.99967E+01	1.00150E-03	1.01552E-01	-3.69563E-02	-6.46448E-02	-4.90412E-05
86	77 TO 780	3.52638E+03	1.99965E+01	1.00150E-03	8.17739E-02	-3.69560E-02	-4.48250E-02	-7.01200E-06
87	78 TO 790	3.52638E+03	1.99962E+01	1.00151E-03	1.29038E-01	-4.92745E-02	-7.97206E-02	4.27663E-05
88	79 TO 800	3.52638E+03	1.99960E+01	1.00151E-03	1.29045E-01	-4.92742E-02	-7.98187E-02	-4.76221E-05
89	80 TO 810	3.52638E+03	1.99958E+01	1.00152E-03	8.19604E-02	-3.69555E-02	-4.50034E-02	1.41937E-06
90	81 TO 990	3.52638E+03	1.99957E+01	1.00152E-03	6.61523E-01	-5.17091E-01	-1.44529E-01	-9.66952E-05

91	102 TO 820	2.24435E+01	1.99987E+01	1.00142E-03	7.39777E-01	-8.66017E-02	-6.53205E-01	-3.00480E-05
92	91 TO 1030	2.24433E+01	2.00215E+01	1.00157E-03	7.38995E-01	-5.94656E-01	-1.44196E-01	1.42754E-04
93	100 TO 830	1.84283E+02	1.99987E+01	1.00142E-03	7.32329E-01	-8.66018E-02	-6.45743E-01	-1.56794E-05
94	92 TO 1010	1.84281E+02	2.00150E+01	1.00157E-03	7.40114E-01	-5.94657E-01	-1.45313E-01	1.44572E-04
95	100 TO 840	5.06977E+02	1.99987E+01	1.00142E-03	7.30551E-01	-8.66018E-02	-6.43965E-01	-1.53960E-05
96	93 TO 1010	5.06973E+02	2.00153E+01	1.00157E-03	7.41398E-01	-5.94657E-01	-1.46597E-01	1.43807E-04
97	100 TO 850	2.88764E+03	1.99987E+01	1.00142E-03	7.03858E-01	-8.66018E-02	-6.17270E-01	-1.38406E-05
98	94 TO 1010	2.88761E+03	2.00141E+01	1.00156E-03	7.42988E-01	-5.94657E-01	-1.48186E-01	1.44416E-04
99	100 TO 860	3.52610E+03	1.99987E+01	1.00142E-03	7.28548E-01	-8.66017E-02	-6.41965E-01	-1.83357E-05
100	95 TO 1010	3.52607E+03	2.00114E+01	1.00156E-03	7.27907E-01	-5.94657E-01	-1.33097E-01	1.52115E-04
101	102 TO 870	1.84297E+02	1.99987E+01	1.00142E-03	7.32417E-01	-8.66018E-02	-6.45830E-01	-1.56299E-05
102	96 TO 1030	1.84295E+02	2.00150E+01	1.00157E-03	7.40136E-01	-5.94657E-01	-1.45335E-01	1.44619E-04
103	102 TO 880	4.98027E+02	1.99987E+01	1.00142E-03	7.22466E-01	-8.66018E-02	-6.35878E-01	-1.38768E-05
104	97 TO 1030	4.98022E+02	2.00136E+01	1.00156E-03	7.43580E-01	-5.94657E-01	-1.48778E-01	1.44474E-04
105	102 TO 890	2.87384E+03	1.99987E+01	1.00142E-03	7.05221E-01	-8.66018E-02	-6.18633E-01	-1.39669E-05
106	98 TO 1030	2.87382E+03	2.00144E+01	1.00156E-03	7.52844E-01	-5.94657E-01	-1.58043E-01	1.44219E-04
107	102 TO 900	3.52639E+03	1.99987E+01	1.00142E-03	7.38586E-01	-8.66017E-02	-6.52003E-01	-1.83531E-05
108	99 TO 1030	3.52636E+03	2.00114E+01	1.00156E-03	7.27922E-01	-5.94657E-01	-1.33112E-01	1.52680E-04
109	0 TO 1000	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
110	0 TO 1020	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE

ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-10-17

0 CPU TIME = 213.19

OJUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
1	1.30427E+00	1.30427E+00	2.24435E+01	0.00000E+00	2.00027E+01	0.00000E+00	2.00027E+01
2	1.30431E+00	1.30431E+00	2.24435E+01	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
3	1.30431E+00	1.30431E+00	2.24435E+01	0.00000E+00	2.00006E+01	0.00000E+00	2.00006E+01
4	1.30432E+00	1.30432E+00	2.24435E+01	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
5	1.30433E+00	1.30433E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
6	1.30433E+00	1.30433E+00	2.24435E+01	0.00000E+00	1.99998E+01	0.00000E+00	1.99998E+01
7	1.30434E+00	1.30434E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
8	1.30435E+00	1.30435E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
9	1.30435E+00	1.30435E+00	2.24435E+01	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
10	1.30436E+00	1.30436E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
11	1.33866E+00	1.33866E+00	1.84283E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
12	1.33870E+00	1.33870E+00	1.84283E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
13	1.33871E+00	1.33871E+00	1.84283E+02	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
14	1.33872E+00	1.33872E+00	1.84283E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
15	1.33872E+00	1.33872E+00	1.84283E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
16	1.33873E+00	1.33873E+00	1.84283E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
17	1.33873E+00	1.33873E+00	1.84283E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
18	1.33874E+00	1.33874E+00	1.84283E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
19	1.33875E+00	1.33875E+00	1.84283E+02	0.00000E+00	1.99956E+01	0.00000E+00	1.99956E+01
20	1.33876E+00	1.33876E+00	1.84283E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
21	1.33919E+00	1.33919E+00	5.06977E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
22	1.33923E+00	1.33923E+00	5.06977E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
23	1.33923E+00	1.33923E+00	5.06977E+02	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
24	1.33924E+00	1.33924E+00	5.06977E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
25	1.33925E+00	1.33925E+00	5.06977E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
26	1.33925E+00	1.33925E+00	5.06977E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
27	1.33926E+00	1.33926E+00	5.06977E+02	0.00000E+00	1.99961E+01	0.00000E+00	1.99961E+01
28	1.33927E+00	1.33927E+00	5.06977E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
29	1.33927E+00	1.33927E+00	5.06977E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
30	1.33928E+00	1.33928E+00	5.06977E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
31	1.35331E+00	1.35331E+00	2.88764E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
32	1.35335E+00	1.35335E+00	2.88764E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
33	1.35335E+00	1.35335E+00	2.88764E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
34	1.35336E+00	1.35336E+00	2.88764E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
35	1.35337E+00	1.35337E+00	2.88764E+03	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
36	1.35337E+00	1.35337E+00	2.88764E+03	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
37	1.35338E+00	1.35338E+00	2.88764E+03	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
38	1.35339E+00	1.35339E+00	2.88764E+03	0.00000E+00	1.99954E+01	0.00000E+00	1.99954E+01
39	1.35340E+00	1.35340E+00	2.88764E+03	0.00000E+00	1.99951E+01	0.00000E+00	1.99951E+01
40	1.35340E+00	1.35340E+00	2.88764E+03	0.00000E+00	1.99948E+01	0.00000E+00	1.99948E+01
41	1.33061E+00	1.33061E+00	3.52610E+03	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
42	1.33065E+00	1.33065E+00	3.52610E+03	0.00000E+00	1.99986E+01	0.00000E+00	1.99986E+01
43	1.33065E+00	1.33065E+00	3.52610E+03	0.00000E+00	1.99984E+01	0.00000E+00	1.99984E+01
44	1.33066E+00	1.33066E+00	3.52610E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
45	1.33067E+00	1.33067E+00	3.52610E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
46	1.33067E+00	1.33067E+00	3.52610E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
47	1.33068E+00	1.33068E+00	3.52610E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
48	1.33069E+00	1.33069E+00	3.52610E+03	0.00000E+00	1.99967E+01	0.00000E+00	1.99967E+01
49	1.33070E+00	1.33070E+00	3.52609E+03	0.00000E+00	1.99966E+01	0.00000E+00	1.99966E+01

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE

ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-10-17

0 CPU TIME = 213.20

OJUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
50	1.33070E+00	1.33070E+00	3.52609E+03	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
51	1.33876E+00	1.33876E+00	1.84297E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
52	1.33880E+00	1.33880E+00	1.84297E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
53	1.33881E+00	1.33881E+00	1.84297E+02	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
54	1.33881E+00	1.33881E+00	1.84297E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
55	1.33882E+00	1.33882E+00	1.84297E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
56	1.33883E+00	1.33883E+00	1.84297E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
57	1.33883E+00	1.33883E+00	1.84297E+02	0.00000E+00	1.99962E+01	0.00000E+00	1.99962E+01
58	1.33884E+00	1.33884E+00	1.84297E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
59	1.33885E+00	1.33885E+00	1.84297E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
60	1.33885E+00	1.33885E+00	1.84297E+02	0.00000E+00	1.99955E+01	0.00000E+00	1.99955E+01

61	1.37819E+00	1.37819E+00	4.98027E+02	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
62	1.37823E+00	1.37823E+00	4.98027E+02	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
63	1.37824E+00	1.37824E+00	4.98027E+02	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
64	1.37824E+00	1.37824E+00	4.98027E+02	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
65	1.37825E+00	1.37825E+00	4.98027E+02	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
66	1.37826E+00	1.37826E+00	4.98027E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
67	1.37826E+00	1.37826E+00	4.98027E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
68	1.37827E+00	1.37827E+00	4.98026E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
69	1.37828E+00	1.37828E+00	4.98026E+02	0.00000E+00	1.99950E+01	0.00000E+00	1.99950E+01
70	1.37828E+00	1.37828E+00	4.98026E+02	0.00000E+00	1.99946E+01	0.00000E+00	1.99946E+01
71	1.34684E+00	1.34684E+00	2.87384E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
72	1.34688E+00	1.34688E+00	2.87384E+03	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
73	1.34689E+00	1.34689E+00	2.87384E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
74	1.34690E+00	1.34690E+00	2.87384E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
75	1.34690E+00	1.34690E+00	2.87384E+03	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
76	1.34691E+00	1.34691E+00	2.87384E+03	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
77	1.34691E+00	1.34691E+00	2.87384E+03	0.00000E+00	1.99958E+01	0.00000E+00	1.99958E+01
78	1.34692E+00	1.34692E+00	2.87384E+03	0.00000E+00	1.99954E+01	0.00000E+00	1.99954E+01
79	1.34693E+00	1.34693E+00	2.87384E+03	0.00000E+00	1.99951E+01	0.00000E+00	1.99951E+01
80	1.34694E+00	1.34694E+00	2.87384E+03	0.00000E+00	1.99948E+01	0.00000E+00	1.99948E+01
81	1.33072E+00	1.33072E+00	3.52639E+03	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
82	1.33076E+00	1.33076E+00	3.52639E+03	0.00000E+00	1.99985E+01	0.00000E+00	1.99985E+01
83	1.33076E+00	1.33076E+00	3.52639E+03	0.00000E+00	1.99984E+01	0.00000E+00	1.99984E+01
84	1.33077E+00	1.33077E+00	3.52638E+03	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
85	1.33078E+00	1.33078E+00	3.52638E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
86	1.33078E+00	1.33078E+00	3.52638E+03	0.00000E+00	1.99970E+01	0.00000E+00	1.99970E+01
87	1.33079E+00	1.33079E+00	3.52638E+03	0.00000E+00	1.99970E+01	0.00000E+00	1.99970E+01
88	1.33080E+00	1.33080E+00	3.52638E+03	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
89	1.33080E+00	1.33080E+00	3.52638E+03	0.00000E+00	1.99965E+01	0.00000E+00	1.99965E+01
90	1.33081E+00	1.33081E+00	3.52638E+03	0.00000E+00	1.99962E+01	0.00000E+00	1.99962E+01
91	3.24568E+00	3.24568E+00	2.24435E+01	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
92	1.45641E+00	1.45641E+00	2.24433E+01	0.00000E+00	2.00336E+01	0.00000E+00	2.00336E+01
93	3.33132E+00	3.33132E+00	1.84283E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
94	1.49480E+00	1.49480E+00	1.84281E+02	0.00000E+00	2.00271E+01	0.00000E+00	2.00271E+01
95	3.33257E+00	3.33257E+00	5.06977E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
96	1.49539E+00	1.49539E+00	5.06973E+02	0.00000E+00	2.00274E+01	0.00000E+00	2.00274E+01
97	3.36766E+00	3.36766E+00	2.88764E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
98	1.51117E+00	1.51117E+00	2.88761E+03	0.00000E+00	2.00263E+01	0.00000E+00	2.00263E+01
99	3.31120E+00	3.31120E+00	3.52610E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01

1

EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE

ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-10-17

0 CPU TIME = 213.20

JUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
100	1.48581E+00	1.48581E+00	3.52607E+03	0.00000E+00	2.00235E+01	0.00000E+00	2.00235E+01
101	3.33157E+00	3.33157E+00	1.84297E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
102	1.49491E+00	1.49491E+00	1.84295E+02	0.00000E+00	2.00271E+01	0.00000E+00	2.00271E+01
103	3.42968E+00	3.42968E+00	4.98027E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
104	1.53895E+00	1.53895E+00	4.98022E+02	0.00000E+00	2.00257E+01	0.00000E+00	2.00257E+01
105	3.35157E+00	3.35157E+00	2.87384E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
106	1.50395E+00	1.50395E+00	2.87382E+03	0.00000E+00	2.00265E+01	0.00000E+00	2.00265E+01
107	3.31147E+00	3.31147E+00	3.52639E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
108	1.48593E+00	1.48593E+00	3.52636E+03	0.00000E+00	2.00235E+01	0.00000E+00	2.00235E+01
109	0.00000E+00	0.00000E+00	7.10500E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
110	0.00000E+00	0.00000E+00	7.10500E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01

IPRTCT = 1

CHANNEL RESULTS

CHANNEL NUMBER	CONNECTING VOLUMES	COOLANT TEMPERATURE (C)	COOLANT VOID FRAC (-)	FUEL TEMPERATURE (C)
1	1 TO 9	1.99099E+01	0.00000E+00	1.99155E+01
2	10 TO 18	1.99058E+01	0.00000E+00	1.99100E+01
3	19 TO 27	1.99057E+01	0.00000E+00	1.99099E+01
4	28 TO 36	1.99051E+01	0.00000E+00	1.99090E+01
5	37 TO 45	1.99071E+01	0.00000E+00	1.99117E+01
6	46 TO 54	1.99058E+01	0.00000E+00	1.99101E+01
7	55 TO 63	1.99052E+01	0.00000E+00	1.99092E+01
8	64 TO 72	1.99051E+01	0.00000E+00	1.99091E+01
9	73 TO 81	1.99072E+01	0.00000E+00	1.99117E+01

```
IM,JM,KM,KMIN,KMAX
23 13 4 1 15
IFT,E1,V1,X1
1 20.009995 0.00000000E+00 0.00000000E+00
FSP,PLP1(L),FP,FSG,FSUB,FD,FHL,FI,FAX,QCPR(L),CQQ,X1
AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
 0.1001E+01 0.2273E-05 0.7189E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00 0.7084E-06 0.0000E+00
 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1000E+01 0.3044E+03 0.2592E+01 0.8800E+00-0.2528E+00 0.1186E+03
IM,JM,KM,KMIN,KMAX
23 13 14 1 15
IFT,E1,V1,X1
2 15.949999 0.00000000E+00 0.00000000E+00
FSP,PLP1(L),FP,FSG,FSUB,FD,FHL,FI,FAX,QCPR(L),CQQ,X1
AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
 0.8388E+00 0.1579E-05 0.7252E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00 0.3300E-07 0.0000E+00
 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1000E+01 0.3970E+02 0.3122E+01 0.8800E+00-0.2528E+00 0.1186E+03
```

1 ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-10-17

********** SUMMARY TABLE **********

MINIMUM CPR ,(I,J,K),L = 0.000, 28, 17, 15, 3

MAXIMUM LHGR,(I,J,K),L = 0.000, 25, 15, 3, 3

CPR (25,15, 3) = 99.990

LHGR(28,17,15) = 0.000

(6)設定出力分布に制御棒引抜き停止時の出力分布を用いたDBE(パス5)1点近似感度解析

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 EUREKA-ATR/MOD1          ( 1)                    THERMAL REACTOR CORE KINETICS CODE
      ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR
0 CPU TIME =  213.30
 STANDARD TIME STEP NUMBER   250.  ACTUAL TIME STEP NUMBER   269.  TIME = 0.250000E+02 SEC.  LAST DT = 0.100000E+00 SEC.
0
 TOTAL SYSTEM     NORM POWR      POWR          ENERGY        TOT. REAC     DOP. REAC     WAT-T REAC    VOID REAC     EXP. REAC     INSTD REAC
 QUANTITIES                      (MW)          (MWS)         (¥)           (¥)           (¥)           (¥)           (¥)           (¥)
                  8.79289E+00   1.67293E-07   1.19940E-06   4.56878E-01   5.63878E-04  -1.65673E-04   0.00000E+00   0.00000E+00   4.56480E-01
0 VOLUME          AVG. PRES     TOT. MASS     AVG. ENTH     AVG. DENS     AVG. TEMP     AVG. QUAL     LIQ. MASS
  NUMBER          (KG/CM**2A)   (KG) H2O      (KC/KG)       (KG/M3)       (C)                         (KG)
     1            3.19550E+00   1.17893E+00   2.00005E+01   9.98518E+02   1.99019E+01   0.00000E+00   1.17893E+00
     2            3.12598E+00   2.35885E+00   2.00004E+01   9.98515E+02   1.99033E+01   0.00000E+00   2.35885E+00
     3            3.01275E+00   2.35884E+00   2.00000E+01   9.98509E+02   1.99054E+01   0.00000E+00   2.35884E+00
     4            2.90823E+00   2.35883E+00   1.99999E+01   9.98504E+02   1.99076E+01   0.00000E+00   2.35883E+00
     5            2.81219E+00   1.17891E+00   1.99996E+01   9.98500E+02   1.99094E+01   0.00000E+00   1.17891E+00
     6            2.72485E+00   2.35881E+00   1.99999E+01   9.98495E+02   1.99117E+01   0.00000E+00   2.35881E+00
     7            2.60255E+00   2.35879E+00   1.99999E+01   9.98489E+02   1.99143E+01   0.00000E+00   2.35879E+00
     8            2.48013E+00   2.35878E+00   2.00000E+01   9.98483E+02   1.99172E+01   0.00000E+00   2.35878E+00
     9            2.40144E+00   1.17889E+00   1.99999E+01   9.98480E+02   1.99188E+01   0.00000E+00   1.17889E+00
    10            3.23125E+00   9.43346E+00   1.99979E+01   9.98520E+02   1.98985E+01   0.00000E+00   9.43346E+00
    11            3.14931E+00   1.88679E+01   1.99977E+01   9.98516E+02   1.99000E+01   0.00000E+00   1.88679E+01
    12            3.04007E+00   1.88678E+01   1.99970E+01   9.98511E+02   1.99018E+01   0.00000E+00   1.88678E+01
    13            2.93068E+00   1.88677E+01   1.99966E+01   9.98506E+02   1.99038E+01   0.00000E+00   1.88677E+01
    14            2.82860E+00   9.43328E+00   1.99961E+01   9.98501E+02   1.99055E+01   0.00000E+00   9.43328E+00
    15            2.74648E+00   1.88675E+01   1.99960E+01   9.98497E+02   1.99073E+01   0.00000E+00   1.88675E+01
    16            2.62692E+00   1.88674E+01   1.99957E+01   9.98491E+02   1.99096E+01   0.00000E+00   1.88674E+01
    17            2.49725E+00   1.88673E+01   1.99954E+01   9.98485E+02   1.99122E+01   0.00000E+00   1.88673E+01
    18            2.40493E+00   9.43309E+00   1.99951E+01   9.98481E+02   1.99139E+01   0.00000E+00   9.43309E+00
    19            3.23423E+00   2.59435E+01   1.99979E+01   9.98520E+02   1.98984E+01   0.00000E+00   2.59435E+01
    20            3.15225E+00   5.18859E+01   1.99976E+01   9.98517E+02   1.98999E+01   0.00000E+00   5.18859E+01
    21            3.04294E+00   5.18856E+01   1.99970E+01   9.98511E+02   1.99017E+01   0.00000E+00   5.18856E+01
    22            2.93352E+00   5.18853E+01   1.99966E+01   9.98506E+02   1.99037E+01   0.00000E+00   5.18853E+01
    23            2.83139E+00   2.59430E+01   1.99961E+01   9.98501E+02   1.99055E+01   0.00000E+00   2.59430E+01
    24            2.74924E+00   5.18849E+01   1.99959E+01   9.98497E+02   1.99071E+01   0.00000E+00   5.18849E+01
    25            2.62961E+00   5.18846E+01   1.99957E+01   9.98492E+02   1.99095E+01   0.00000E+00   5.18846E+01
    26            2.49985E+00   5.18842E+01   1.99955E+01   9.98485E+02   1.99122E+01   0.00000E+00   5.18842E+01
    27            2.40749E+00   2.59425E+01   1.99951E+01   9.98481E+02   1.99138E+01   0.00000E+00   2.59425E+01
    28            3.25230E+00   1.46225E+02   1.99975E+01   9.98521E+02   1.98976E+01   0.00000E+00   1.46225E+02
    29            3.16979E+00   2.92449E+02   1.99973E+01   9.98517E+02   1.98992E+01   0.00000E+00   2.92449E+02
    30            3.05978E+00   2.92447E+02   1.99967E+01   9.98512E+02   1.99010E+01   0.00000E+00   2.92447E+02
    31            2.94969E+00   2.92445E+02   1.99962E+01   9.98507E+02   1.99030E+01   0.00000E+00   2.92445E+02
    32            2.84696E+00   1.46222E+02   1.99957E+01   9.98502E+02   1.99047E+01   0.00000E+00   1.46222E+02
    33            2.75422E+00   2.92443E+02   1.99955E+01   9.98498E+02   1.99066E+01   0.00000E+00   2.92443E+02
    34            2.63381E+00   2.92441E+02   1.99952E+01   9.98492E+02   1.99090E+01   0.00000E+00   2.92441E+02
    35            2.50330E+00   2.92439E+02   1.99949E+01   9.98486E+02   1.99115E+01   0.00000E+00   2.92439E+02
    36            2.42041E+00   1.46219E+02   1.99946E+01   9.98482E+02   1.99131E+01   0.00000E+00   1.46219E+02
    37            3.20316E+00   1.81601E+02   1.99984E+01   9.98519E+02   1.98995E+01   0.00000E+00   1.81601E+02
    38            3.12157E+00   3.63201E+02   1.99981E+01   9.98515E+02   1.99011E+01   0.00000E+00   3.63201E+02
    39            3.01278E+00   3.63199E+02   1.99976E+01   9.98510E+02   1.99030E+01   0.00000E+00   3.63199E+02
    40            2.90388E+00   3.63198E+02   1.99973E+01   9.98505E+02   1.99050E+01   0.00000E+00   3.63198E+02
    41            2.80228E+00   1.81598E+02   1.99967E+01   9.98500E+02   1.99067E+01   0.00000E+00   1.81598E+02
    42            2.72053E+00   3.63194E+02   1.99967E+01   9.98496E+02   1.99085E+01   0.00000E+00   3.63194E+02
    43            2.59155E+00   3.63192E+02   1.99964E+01   9.98490E+02   1.99111E+01   0.00000E+00   3.63192E+02
    44            2.46247E+00   3.63190E+02   1.99964E+01   9.98483E+02   1.99139E+01   0.00000E+00   3.63190E+02
    45            2.38051E+00   1.81594E+02   1.99961E+01   9.98479E+02   1.99155E+01   0.00000E+00   1.81594E+02
    46            3.23136E+00   9.43346E+00   1.99979E+01   9.98520E+02   1.98985E+01   0.00000E+00   9.43346E+00
    47            3.14942E+00   1.88679E+01   1.99976E+01   9.98516E+02   1.99000E+01   0.00000E+00   1.88679E+01
    48            3.04014E+00   1.88678E+01   1.99971E+01   9.98511E+02   1.99019E+01   0.00000E+00   1.88678E+01
    49            2.93079E+00   1.88677E+01   1.99965E+01   9.98506E+02   1.99037E+01   0.00000E+00   1.88677E+01
    50            2.82872E+00   9.43328E+00   1.99961E+01   9.98501E+02   1.99055E+01   0.00000E+00   9.43328E+00
    51            2.74658E+00   1.88675E+01   1.99960E+01   9.98497E+02   1.99073E+01   0.00000E+00   1.88675E+01
    52            2.62698E+00   1.88674E+01   1.99957E+01   9.98491E+02   1.99096E+01   0.00000E+00   1.88674E+01
    53            2.49729E+00   1.88673E+01   1.99955E+01   9.98485E+02   1.99123E+01   0.00000E+00   1.88673E+01
    54            2.40496E+00   9.43309E+00   1.99953E+01   9.98481E+02   1.99140E+01   0.00000E+00   9.43309E+00
    55            3.23827E+00   2.47636E+01   1.99976E+01   9.98521E+02   1.98980E+01   0.00000E+00   2.47636E+01
    56            3.15594E+00   4.95270E+01   1.99973E+01   9.98517E+02   1.98995E+01   0.00000E+00   4.95270E+01
    57            3.04617E+00   4.95267E+01   1.99967E+01   9.98512E+02   1.99013E+01   0.00000E+00   4.95267E+01
    58            2.93628E+00   4.95265E+01   1.99962E+01   9.98506E+02   1.99032E+01   0.00000E+00   4.95265E+01
    59            2.83449E+00   2.47631E+01   1.99957E+01   9.98501E+02   1.99050E+01   0.00000E+00   2.47631E+01
    60            2.75194E+00   4.95261E+01   1.99955E+01   9.98498E+02   1.99066E+01   0.00000E+00   4.95261E+01
    61            2.63217E+00   4.95258E+01   1.99951E+01   9.98492E+02   1.99089E+01   0.00000E+00   4.95258E+01
    62            2.50266E+00   4.95255E+01   1.99948E+01   9.98486E+02   1.99114E+01   0.00000E+00   4.95255E+01
    63            2.41031E+00   2.47626E+01   1.99944E+01   9.98481E+02   1.99130E+01   0.00000E+00   2.47626E+01
    64            3.25226E+00   1.46225E+02   1.99976E+01   9.98521E+02   1.98977E+01   0.00000E+00   1.46225E+02
    65            3.16981E+00   2.92449E+02   1.99973E+01   9.98517E+02   1.98992E+01   0.00000E+00   2.92449E+02
    66            3.05987E+00   2.92447E+02   1.99967E+01   9.98512E+02   1.99010E+01   0.00000E+00   2.92447E+02
    67            2.94981E+00   2.92445E+02   1.99962E+01   9.98507E+02   1.99030E+01   0.00000E+00   2.92445E+02
    68            2.84695E+00   1.46222E+02   1.99957E+01   9.98502E+02   1.99047E+01   0.00000E+00   1.46222E+02
    69            2.75410E+00   2.92443E+02   1.99956E+01   9.98498E+02   1.99067E+01   0.00000E+00   2.92443E+02
    70            2.63373E+00   2.92441E+02   1.99952E+01   9.98492E+02   1.99089E+01   0.00000E+00   2.92441E+02
    71            2.50308E+00   2.92439E+02   1.99949E+01   9.98486E+02   1.99115E+01   0.00000E+00   2.92439E+02
    72            2.42024E+00   1.46219E+02   1.99945E+01   9.98482E+02   1.99130E+01   0.00000E+00   1.46219E+02
    73            3.20325E+00   1.81601E+02   1.99983E+01   9.98519E+02   1.98995E+01   0.00000E+00   1.81601E+02
    74            3.12163E+00   3.63201E+02   1.99982E+01   9.98515E+02   1.99011E+01   0.00000E+00   3.63201E+02
    75            3.01284E+00   3.63199E+02   1.99977E+01   9.98510E+02   1.99030E+01   0.00000E+00   3.63199E+02
    76            2.90394E+00   3.63198E+02   1.99973E+01   9.98505E+02   1.99051E+01   0.00000E+00   3.63198E+02
    77            2.80233E+00   1.81598E+02   1.99967E+01   9.98500E+02   1.99068E+01   0.00000E+00   1.81598E+02
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78	2.72058E+00	3.63194E+02	1.99967E+01	9.98496E+02	1.99086E+01	0.00000E+00	3.63194E+02
79	2.59155E+00	3.63192E+02	1.99966E+01	9.98490E+02	1.99112E+01	0.00000E+00	3.63192E+02
80	2.46250E+00	3.63190E+02	1.99963E+01	9.98483E+02	1.99139E+01	0.00000E+00	3.63190E+02
81	2.38054E+00	1.81594E+02	1.99960E+01	9.98479E+02	1.99153E+01	0.00000E+00	1.81594E+02
82	3.85907E+00	3.34274E+01	2.00014E+01	9.98550E+02	1.98881E+01	0.00000E+00	3.34274E+01
83	3.86333E+00	2.01174E+02	1.99989E+01	9.98551E+02	1.98855E+01	0.00000E+00	2.01174E+02
84	3.86474E+00	5.49014E+02	1.99989E+01	9.98551E+02	1.98854E+01	0.00000E+00	5.49014E+02
85	3.87846E+00	2.97059E+03	1.99986E+01	9.98552E+02	1.98849E+01	0.00000E+00	2.97059E+03
86	3.84973E+00	4.15374E+03	1.99994E+01	9.98550E+02	1.98863E+01	0.00000E+00	4.15374E+03
87	3.86351E+00	2.01174E+02	1.99989E+01	9.98551E+02	1.98855E+01	0.00000E+00	2.01174E+02
88	3.86977E+00	5.15582E+02	1.99986E+01	9.98551E+02	1.98850E+01	0.00000E+00	5.15582E+02
89	3.87804E+00	2.97059E+03	1.99986E+01	9.98552E+02	1.98849E+01	0.00000E+00	2.97059E+03
90	3.83996E+00	4.15374E+03	1.99994E+01	9.98550E+02	1.98865E+01	0.00000E+00	4.15374E+03
91	1.72829E+00	9.84715E+01	2.00333E+01	9.98441E+02	1.99671E+01	0.00000E+00	9.84715E+01
92	1.72883E+00	7.70978E+02	2.00268E+01	9.98442E+02	1.99606E+01	0.00000E+00	7.70978E+02
93	1.73010E+00	2.15602E+03	2.00272E+01	9.98442E+02	1.99609E+01	0.00000E+00	2.15602E+03
94	1.73142E+00	1.20937E+04	2.00260E+01	9.98442E+02	1.99597E+01	0.00000E+00	1.20937E+04
95	1.71671E+00	1.24350E+04	2.00232E+01	9.98442E+02	1.99572E+01	0.00000E+00	1.24350E+04
96	1.72885E+00	7.70998E+02	2.00268E+01	9.98442E+02	1.99606E+01	0.00000E+00	7.70998E+02
97	1.73161E+00	2.05801E+03	2.00254E+01	9.98442E+02	1.99591E+01	0.00000E+00	2.05801E+03
98	1.74139E+00	1.20937E+04	2.00262E+01	9.98443E+02	1.99597E+01	0.00000E+00	1.20937E+04
99	1.71672E+00	1.24350E+04	2.00232E+01	9.98442E+02	1.99572E+01	0.00000E+00	1.24350E+04
100	4.50517E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98712E+01	0.00000E+00	8.86301E+03
101	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05
102	4.50545E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98712E+01	0.00000E+00	8.86301E+03
103	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05

0 HEAT SLAB NUMBER	VOL NUM	H.T. MODE	SURF FLUX (KC/HR/M2)	CRIT FLUX (KC/HR/M2)	H.T. COEF (KC/H/M2/C)	SURF TEMP (C)	LOCAL ENGY (CAL/G-U02)	VOID FRAC	LOCAL MASS FLUX	LOCAL FLUID TEMP.
1	1	1	6.05640E+00	5.86344E+06	1.05395E+04	1.99026E+01	1.07897E+00	0.00000E+00	4.68643E+06	1.99019E+01
2	2	1	6.23692E+00	5.83946E+06	1.05131E+04	1.99041E+01	1.07907E+00	0.00000E+00	4.68643E+06	1.99033E+01
3	3	1	8.43161E-01	5.82862E+06	1.04696E+04	1.99057E+01	1.07921E+00	0.00000E+00	4.68643E+06	1.99054E+01
4	4	1	2.43338E+00	6.76024E+06	1.04289E+04	1.99081E+01	1.07936E+00	0.00000E+00	4.68643E+06	1.99076E+01
5	5	1	1.95132E+00	6.95275E+06	1.03909E+04	1.99098E+01	1.07947E+00	0.00000E+00	4.68643E+06	1.99094E+01
6	6	1	1.24254E+01	6.94269E+06	1.03558E+04	1.99130E+01	1.07961E+00	0.00000E+00	4.68643E+06	1.99117E+01
7	7	1	4.81322E+00	6.92857E+06	1.03058E+04	1.99151E+01	1.07979E+00	0.00000E+00	4.68643E+06	1.99143E+01
8	8	1	4.82572E+00	6.36700E+06	1.02546E+04	1.99180E+01	1.07998E+00	0.00000E+00	4.68643E+06	1.99172E+01
9	9	1	1.19791E+01	6.35860E+06	1.02212E+04	1.99202E+01	1.08008E+00	0.00000E+00	4.68643E+06	1.99188E+01
10	10	1	0.00000E+00	5.86684E+06	0.00000E+00	1.98986E+01	1.07872E+00	0.00000E+00	4.81002E+06	1.98985E+01
11	11	1	2.67253E+00	5.84168E+06	1.07434E+04	1.99004E+01	1.07882E+00	0.00000E+00	4.81002E+06	1.99000E+01
12	12	1	-4.88305E+00	5.83122E+06	1.07007E+04	1.99016E+01	1.07894E+00	0.00000E+00	4.81002E+06	1.99018E+01
13	13	1	2.62047E+00	6.76273E+06	1.06573E+04	1.99042E+01	1.07907E+00	0.00000E+00	4.81002E+06	1.99038E+01
14	14	1	3.84218E+00	6.95463E+06	1.06162E+04	1.99060E+01	1.07918E+00	0.00000E+00	4.81002E+06	1.99055E+01
15	15	1	7.24344E+00	6.94517E+06	1.05826E+04	1.99081E+01	1.07930E+00	0.00000E+00	4.81002E+06	1.99073E+01
16	16	1	2.67743E+00	6.93137E+06	1.05329E+04	1.99100E+01	1.07945E+00	0.00000E+00	4.81002E+06	1.99096E+01
17	17	1	1.91972E+00	6.36882E+06	1.04777E+04	1.99126E+01	1.07962E+00	0.00000E+00	4.81002E+06	1.99122E+01
18	18	1	8.00889E+00	6.35897E+06	1.04378E+04	1.99149E+01	1.07974E+00	0.00000E+00	4.81002E+06	1.99139E+01
19	19	1	0.00000E+00	5.86713E+06	0.00000E+00	1.98985E+01	1.07871E+00	0.00000E+00	4.81191E+06	1.98984E+01
20	20	1	2.77298E+00	5.84196E+06	1.07479E+04	1.99003E+01	1.07882E+00	0.00000E+00	4.81191E+06	1.98999E+01
21	21	1	2.23675E+00	5.83150E+06	1.07052E+04	1.99021E+01	1.07894E+00	0.00000E+00	4.81191E+06	1.99017E+01
22	22	1	6.29922E+00	6.76305E+06	1.06618E+04	1.99045E+01	1.07907E+00	0.00000E+00	4.81191E+06	1.99037E+01
23	23	1	3.75282E+00	6.95495E+06	1.06207E+04	1.99060E+01	1.07917E+00	0.00000E+00	4.81191E+06	1.99055E+01
24	24	1	7.65017E-01	6.94549E+06	1.05871E+04	1.99073E+01	1.07929E+00	0.00000E+00	4.81191E+06	1.99071E+01
25	25	1	5.76412E+00	6.93169E+06	1.05373E+04	1.99102E+01	1.07945E+00	0.00000E+00	4.81191E+06	1.99095E+01
26	26	1	9.38966E+00	6.36909E+06	1.04821E+04	1.99133E+01	1.07962E+00	0.00000E+00	4.81191E+06	1.99122E+01
27	27	1	6.39683E+00	6.35924E+06	1.04422E+04	1.99146E+01	1.07973E+00	0.00000E+00	4.81190E+06	1.99138E+01
28	28	1	-7.35040E+00	5.86886E+06	1.08774E+04	1.98972E+01	1.07867E+00	0.00000E+00	4.86265E+06	1.98976E+01
29	29	1	0.00000E+00	5.84363E+06	0.00000E+00	1.98993E+01	1.07877E+00	0.00000E+00	4.86265E+06	1.98992E+01
30	30	1	4.64546E-01	5.83311E+06	1.08020E+04	1.99012E+01	1.07889E+00	0.00000E+00	4.86265E+06	1.99010E+01
31	31	1	4.49537E+00	6.76485E+06	1.07582E+04	1.99035E+01	1.07901E+00	0.00000E+00	4.86264E+06	1.99030E+01
32	32	1	2.89989E+00	6.95674E+06	1.07165E+04	1.99051E+01	1.07912E+00	0.00000E+00	4.86264E+06	1.99047E+01
33	33	1	-4.33871E-01	6.94606E+06	1.06784E+04	1.99067E+01	1.07925E+00	0.00000E+00	4.86264E+06	1.99066E+01
34	34	1	8.97232E+00	6.93217E+06	1.06279E+04	1.99100E+01	1.07941E+00	0.00000E+00	4.86264E+06	1.99090E+01
35	35	1	3.23780E+00	6.36946E+06	1.05719E+04	1.99121E+01	1.07958E+00	0.00000E+00	4.86264E+06	1.99115E+01
36	36	1	1.11889E+01	6.36061E+06	1.05359E+04	1.99143E+01	1.07967E+00	0.00000E+00	4.86264E+06	1.99131E+01
37	37	1	0.00000E+00	5.86415E+06	0.00000E+00	1.98997E+01	1.07879E+00	0.00000E+00	4.78108E+06	1.98995E+01
38	38	1	2.04917E+00	5.83902E+06	1.06809E+04	1.99014E+01	1.07890E+00	0.00000E+00	4.78107E+06	1.99011E+01
39	39	1	-1.18323E+00	5.82861E+06	1.06384E+04	1.99031E+01	1.07903E+00	0.00000E+00	4.78107E+06	1.99030E+01
40	40	1	4.74519E+00	6.75974E+06	1.05953E+04	1.99056E+01	1.07915E+00	0.00000E+00	4.78107E+06	1.99050E+01
41	41	1	-3.32765E-01	6.95160E+06	1.05544E+04	1.99068E+01	1.07926E+00	0.00000E+00	4.78107E+06	1.99067E+01
42	42	1	3.29930E+00	6.94218E+06	1.05210E+04	1.99090E+01	1.07939E+00	0.00000E+00	4.78107E+06	1.99085E+01
43	43	1	2.05730E+00	6.92728E+06	1.04673E+04	1.99115E+01	1.07956E+00	0.00000E+00	4.78107E+06	1.99111E+01
44	44	1	6.46132E+00	6.36511E+06	1.04124E+04	1.99148E+01	1.07974E+00	0.00000E+00	4.78107E+06	1.99139E+01
45	45	1	8.69894E+00	6.35635E+06	1.03769E+04	1.99165E+01	1.07984E+00	0.00000E+00	4.78107E+06	1.99155E+01
46	46	1	0.00000E+00	5.86686E+06	0.00000E+00	1.98986E+01	1.07873E+00	0.00000E+00	4.81038E+06	1.98985E+01
47	47	1	1.98141E+00	5.84170E+06	1.07441E+04	1.99003E+01	1.07882E+00	0.00000E+00	4.81038E+06	1.99000E+01
48	48	1	1.66754E+00	5.83124E+06	1.07013E+04	1.99022E+01	1.07895E+00	0.00000E+00	4.81038E+06	1.99019E+01
49	49	1	-3.18696E+00	6.76276E+06	1.06580E+04	1.99036E+01	1.07907E+00	0.00000E+00	4.81038E+06	1.99037E+01
50	50	1	-9.14418E-01	6.95465E+06	1.06169E+04	1.99057E+01	1.07918E+00	0.00000E+00	4.81038E+06	1.99055E+01
51	51	1	-3.07235E-01	6.94519E+06	1.05833E+04	1.99074E+01	1.07929E+00	0.00000E+00	4.81038E+06	1.99073E+01
52	52	1	1.64423E+00	6.93139E+06	1.05335E+04	1.99099E+01	1.07945E+00	0.00000E+00	4.81038E+06	1.99096E+01
53	53	1	6.66977E+00	6.36883E+06	1.04784E+04	1.99131E+01	1.07963E+00	0.00000E+00	4.81038E+06	1.99123E+01
54	54	1	1.26704E+01	6.35897E+06	1.04384E+04	1.99154E+01	1.07974E+00	0.00000E+00	4.81038E+06	1.99140E+01
55	55	1	0.00000E+00	5.86752E+06	0.00000E+00	1.98982E+01	1.07869E+00	0.00000E+00	4.95205E+06	1.98980E+01
56	56	1	0.00000E+00	5.84232E+06	0.00000E+00	1.98996E+01	1.07879E+00	0.00000E+00	4.95205E+06	1.98995E+01
57	57	1	-3.99304E+00	5.83182E+06	1.09552E+04	1.99011E+01	1.07890E+00	0.00000E+00	4.95205E+06	1.99013E+01
58	58	1	-2.58203E-01	6.76337E+06	1.09106E+04	1.99034E+01	1.07903E+00	0.00000E+00	4.95205E+06	1.99032E+01
59	59	1	2.01917E+00	6.95531E+06	1.08687E+04	1.99054E+01	1.07913E+00	0.00000E+00	4.95205E+06	1.99050E+01
60	60	1	4.79842E+00	6.94581E+06	1.08342E+04	1.99072E+01	1.07925E+00	0.00000E+00	4.95205E+06	1.99066E+01
61	61	1	8.38988E+00	6.93199E+06	1.07832E+04	1.99098E+01	1.07940E+00	0.00000E+00	4.95205E+06	1.99089E+01
62	62	1	6.46641E+00	6.36941E+06	1.07269E+04	1.99122E+01	1.07957E+00	0.00000E+00	4.95205E+06	1.99114E+01
63	63	1	2.86259E+00	6.35954E+06	1.06861E+04	1.99136E+01	1.07967E+00	0.00000E+00	4.95205E+06	1.99130E+01

64	64	1	0.00000E+00	5.86886E+06	0.00000E+00	1.98979E+01	1.07867E+00	0.00000E+00	4.83942E+06	1.98977E+01
65	65	1	0.00000E+00	5.84364E+06	0.00000E+00	1.98994E+01	1.07877E+00	0.00000E+00	4.83942E+06	1.98992E+01
66	66	1	-6.36739E+00	5.83313E+06	1.07608E+04	1.99007E+01	1.07889E+00	0.00000E+00	4.83942E+06	1.99010E+01
67	67	1	-2.96205E+00	6.76487E+06	1.07171E+04	1.99029E+01	1.07902E+00	0.00000E+00	4.83942E+06	1.99030E+01
68	68	1	-5.06603E+00	6.95675E+06	1.06756E+04	1.99045E+01	1.07912E+00	0.00000E+00	4.83941E+06	1.99047E+01
69	69	1	5.67135E+00	6.94606E+06	1.06375E+04	1.99074E+01	1.07925E+00	0.00000E+00	4.83941E+06	1.99067E+01
70	70	1	-1.77659E+00	6.93217E+06	1.05872E+04	1.99090E+01	1.07940E+00	0.00000E+00	4.83941E+06	1.99089E+01
71	71	1	-1.52392E+00	6.36945E+06	1.05314E+04	1.99117E+01	1.07958E+00	0.00000E+00	4.83941E+06	1.99115E+01
72	72	1	-9.34009E-02	6.36060E+06	1.04955E+04	1.99132E+01	1.07967E+00	0.00000E+00	4.83941E+06	1.99130E+01
73	73	1	-5.71790E+00	5.86418E+06	1.07131E+04	1.98992E+01	1.07879E+00	0.00000E+00	4.78147E+06	1.98995E+01
74	74	1	3.38091E+00	5.83904E+06	1.06816E+04	1.99016E+01	1.07890E+00	0.00000E+00	4.78146E+06	1.99011E+01
75	75	1	2.83526E-01	5.82863E+06	1.06392E+04	1.99032E+01	1.07903E+00	0.00000E+00	4.78146E+06	1.99030E+01
76	76	1	4.02289E+00	6.75976E+06	1.05960E+04	1.99056E+01	1.07916E+00	0.00000E+00	4.78146E+06	1.99051E+01
77	77	1	9.01015E-02	6.95162E+06	1.05551E+04	1.99069E+01	1.07926E+00	0.00000E+00	4.78146E+06	1.99068E+01
78	78	1	3.10026E+00	6.94219E+06	1.05217E+04	1.99091E+01	1.07939E+00	0.00000E+00	4.78146E+06	1.99086E+01
79	79	1	9.98540E+00	6.92729E+06	1.04680E+04	1.99123E+01	1.07956E+00	0.00000E+00	4.78146E+06	1.99112E+01
80	80	1	4.24416E+00	6.36512E+06	1.04131E+04	1.99145E+01	1.07974E+00	0.00000E+00	4.78146E+06	1.99139E+01
81	81	1	4.78872E+00	6.35637E+06	1.03776E+04	1.99160E+01	1.07983E+00	0.00000E+00	4.78146E+06	1.99153E+01

0 HEAT SLAB NUMBER	VOL NUM	GAP CONDUCTANCE (KCAL/M2/HR/C)	GAP DISTANCE (M)	CENT TEMP (C)	AVG. TEMP (C)	FUEL POWER (MW)
1	1	3.20000E+02	0.00000E+00	1.99079E+01	1.99058E+01	9.11766E-12
2	2	3.20000E+02	0.00000E+00	1.99100E+01	1.99076E+01	4.19559E-11
3	3	3.20000E+02	0.00000E+00	1.99129E+01	1.99101E+01	5.20036E-11
4	4	3.20000E+02	0.00000E+00	1.99158E+01	1.99129E+01	5.65064E-11
5	5	3.20000E+02	0.00000E+00	1.99179E+01	1.99149E+01	2.86590E-11
6	6	3.20000E+02	0.00000E+00	1.99208E+01	1.99175E+01	6.11521E-11
7	7	3.20000E+02	0.00000E+00	1.99244E+01	1.99208E+01	6.44522E-11
8	8	3.20000E+02	0.00000E+00	1.99280E+01	1.99241E+01	6.55693E-11
9	9	3.20000E+02	0.00000E+00	1.99301E+01	1.99260E+01	2.34154E-11
10	10	1.90000E+03	0.00000E+00	1.99027E+01	1.99012E+01	3.60674E-11
11	11	1.90000E+03	0.00000E+00	1.99047E+01	1.99031E+01	1.55136E-10
12	12	1.90000E+03	0.00000E+00	1.99071E+01	1.99052E+01	1.91573E-10
13	13	1.90000E+03	0.00000E+00	1.99099E+01	1.99076E+01	2.08699E-10
14	14	1.90000E+03	0.00000E+00	1.99119E+01	1.99096E+01	1.06833E-10
15	15	1.90000E+03	0.00000E+00	1.99144E+01	1.99119E+01	2.27292E-10
16	16	1.90000E+03	0.00000E+00	1.99174E+01	1.99144E+01	2.40737E-10
17	17	1.90000E+03	0.00000E+00	1.99209E+01	1.99177E+01	2.49444E-10
18	18	1.90000E+03	0.00000E+00	1.99231E+01	1.99197E+01	9.66995E-11
19	19	1.90000E+03	0.00000E+00	1.99025E+01	1.99011E+01	1.17058E-10
20	20	1.90000E+03	0.00000E+00	1.99046E+01	1.99029E+01	5.00700E-10
21	21	1.90000E+03	0.00000E+00	1.99070E+01	1.99051E+01	6.15594E-10
22	22	1.90000E+03	0.00000E+00	1.99096E+01	1.99075E+01	6.73514E-10
23	23	1.90000E+03	0.00000E+00	1.99117E+01	1.99094E+01	3.43207E-10
24	24	1.90000E+03	0.00000E+00	1.99141E+01	1.99115E+01	7.32092E-10
25	25	1.90000E+03	0.00000E+00	1.99173E+01	1.99145E+01	7.75135E-10
26	26	1.90000E+03	0.00000E+00	1.99208E+01	1.99176E+01	8.00223E-10
27	27	1.90000E+03	0.00000E+00	1.99229E+01	1.99196E+01	3.06632E-10
28	28	1.90000E+03	0.00000E+00	1.99017E+01	1.99003E+01	7.50613E-10
29	29	1.90000E+03	0.00000E+00	1.99037E+01	1.99021E+01	3.23541E-09
30	30	1.90000E+03	0.00000E+00	1.99060E+01	1.99042E+01	3.98549E-09
31	31	1.90000E+03	0.00000E+00	1.99085E+01	1.99065E+01	4.34700E-09
32	32	1.90000E+03	0.00000E+00	1.99107E+01	1.99085E+01	2.21004E-09
33	33	1.90000E+03	0.00000E+00	1.99133E+01	1.99108E+01	4.70078E-09
34	34	1.90000E+03	0.00000E+00	1.99164E+01	1.99137E+01	4.97292E-09
35	35	1.90000E+03	0.00000E+00	1.99199E+01	1.99168E+01	5.13690E-09
36	36	1.90000E+03	0.00000E+00	1.99217E+01	1.99185E+01	1.95643E-09
37	37	1.90000E+03	0.00000E+00	1.99042E+01	1.99026E+01	1.34414E-09
38	38	1.90000E+03	0.00000E+00	1.99063E+01	1.99045E+01	5.56681E-09
39	39	1.90000E+03	0.00000E+00	1.99089E+01	1.99068E+01	6.48804E-09
40	40	1.90000E+03	0.00000E+00	1.99115E+01	1.99091E+01	6.64711E-09
41	41	1.90000E+03	0.00000E+00	1.99136E+01	1.99110E+01	3.16492E-09
42	42	1.90000E+03	0.00000E+00	1.99161E+01	1.99134E+01	6.33556E-09
43	43	1.90000E+03	0.00000E+00	1.99196E+01	1.99165E+01	6.41823E-09
44	44	1.90000E+03	0.00000E+00	1.99231E+01	1.99198E+01	6.58605E-09
45	45	1.90000E+03	0.00000E+00	1.99251E+01	1.99216E+01	2.53853E-09
46	46	1.90000E+03	0.00000E+00	1.99028E+01	1.99013E+01	4.12896E-11
47	47	1.90000E+03	0.00000E+00	1.99048E+01	1.99031E+01	1.77413E-10
48	48	1.90000E+03	0.00000E+00	1.99072E+01	1.99053E+01	2.18315E-10
49	49	1.90000E+03	0.00000E+00	1.99098E+01	1.99076E+01	2.37812E-10
50	50	1.90000E+03	0.00000E+00	1.99119E+01	1.99096E+01	1.20939E-10
51	51	1.90000E+03	0.00000E+00	1.99143E+01	1.99117E+01	2.58788E-10
52	52	1.90000E+03	0.00000E+00	1.99174E+01	1.99146E+01	2.73660E-10
53	53	1.90000E+03	0.00000E+00	1.99210E+01	1.99178E+01	2.81113E-10
54	54	1.90000E+03	0.00000E+00	1.99232E+01	1.99198E+01	1.05920E-10
55	55	1.90000E+03	0.00000E+00	1.99020E+01	1.99006E+01	1.23873E-10
56	56	1.90000E+03	0.00000E+00	1.99040E+01	1.99024E+01	5.30101E-10
57	57	1.90000E+03	0.00000E+00	1.99063E+01	1.99046E+01	6.50160E-10
58	58	1.90000E+03	0.00000E+00	1.99089E+01	1.99069E+01	7.07731E-10
59	59	1.90000E+03	0.00000E+00	1.99109E+01	1.99087E+01	3.59451E-10
60	60	1.90000E+03	0.00000E+00	1.99132E+01	1.99108E+01	7.66491E-10
61	61	1.90000E+03	0.00000E+00	1.99163E+01	1.99135E+01	8.10047E-10
62	62	1.90000E+03	0.00000E+00	1.99197E+01	1.99167E+01	8.35127E-10
63	63	1.90000E+03	0.00000E+00	1.99217E+01	1.99186E+01	3.17873E-10
64	64	1.90000E+03	0.00000E+00	1.99018E+01	1.99003E+01	7.30675E-10
65	65	1.90000E+03	0.00000E+00	1.99038E+01	1.99022E+01	3.14502E-09
66	66	1.90000E+03	0.00000E+00	1.99062E+01	1.99043E+01	3.86669E-09
67	67	1.90000E+03	0.00000E+00	1.99086E+01	1.99066E+01	4.19654E-09
68	68	1.90000E+03	0.00000E+00	1.99107E+01	1.99086E+01	2.12112E-09
69	69	1.90000E+03	0.00000E+00	1.99134E+01	1.99109E+01	4.48297E-09
70	70	1.90000E+03	0.00000E+00	1.99164E+01	1.99137E+01	4.74810E-09
71	71	1.90000E+03	0.00000E+00	1.99199E+01	1.99168E+01	4.92542E-09
72	72	1.90000E+03	0.00000E+00	1.99217E+01	1.99185E+01	1.88803E-09

73	73	1.90000E+03	0.00000E+00	1.99042E+01	1.99025E+01	1.35595E-09
74	74	1.90000E+03	0.00000E+00	1.99064E+01	1.99045E+01	5.64288E-09
75	75	1.90000E+03	0.00000E+00	1.99088E+01	1.99068E+01	6.58252E-09
76	76	1.90000E+03	0.00000E+00	1.99114E+01	1.99091E+01	6.71039E-09
77	77	1.90000E+03	0.00000E+00	1.99136E+01	1.99111E+01	3.18069E-09
78	78	1.90000E+03	0.00000E+00	1.99161E+01	1.99134E+01	6.35582E-09
79	79	1.90000E+03	0.00000E+00	1.99195E+01	1.99164E+01	6.43846E-09
80	80	1.90000E+03	0.00000E+00	1.99231E+01	1.99198E+01	6.64205E-09
81	81	1.90000E+03	0.00000E+00	1.99250E+01	1.99214E+01	2.56025E-09

O SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	1	1.99079E+01	2	1.99078E+01	3	1.99077E+01	4	1.99075E+01	5	1.99072E+01	6	1.99068E+01	7	1.99063E+01
2	1	1.99100E+01	2	1.99099E+01	3	1.99098E+01	4	1.99095E+01	5	1.99092E+01	6	1.99088E+01	7	1.99082E+01
3	1	1.99129E+01	2	1.99128E+01	3	1.99126E+01	4	1.99124E+01	5	1.99120E+01	6	1.99115E+01	7	1.99109E+01
4	1	1.99158E+01	2	1.99157E+01	3	1.99155E+01	4	1.99152E+01	5	1.99148E+01	6	1.99143E+01	7	1.99137E+01
5	1	1.99179E+01	2	1.99178E+01	3	1.99177E+01	4	1.99173E+01	5	1.99169E+01	6	1.99164E+01	7	1.99157E+01
6	1	1.99208E+01	2	1.99207E+01	3	1.99205E+01	4	1.99202E+01	5	1.99197E+01	6	1.99191E+01	7	1.99184E+01
7	1	1.99244E+01	2	1.99243E+01	3	1.99241E+01	4	1.99237E+01	5	1.99232E+01	6	1.99225E+01	7	1.99218E+01
8	1	1.99280E+01	2	1.99280E+01	3	1.99277E+01	4	1.99273E+01	5	1.99268E+01	6	1.99261E+01	7	1.99253E+01
9	1	1.99301E+01	2	1.99300E+01	3	1.99298E+01	4	1.99294E+01	5	1.99288E+01	6	1.99281E+01	7	1.99272E+01
10	1	1.99027E+01	2	1.99027E+01	3	1.99026E+01	4	1.99024E+01	5	1.99022E+01	6	1.99020E+01	7	1.99016E+01
11	1	1.99047E+01	2	1.99047E+01	3	1.99046E+01	4	1.99044E+01	5	1.99042E+01	6	1.99039E+01	7	1.99035E+01
12	1	1.99071E+01	2	1.99071E+01	3	1.99070E+01	4	1.99068E+01	5	1.99065E+01	6	1.99062E+01	7	1.99058E+01
13	1	1.99099E+01	2	1.99098E+01	3	1.99097E+01	4	1.99094E+01	5	1.99091E+01	6	1.99087E+01	7	1.99082E+01
14	1	1.99119E+01	2	1.99118E+01	3	1.99117E+01	4	1.99114E+01	5	1.99111E+01	6	1.99107E+01	7	1.99102E+01
15	1	1.99144E+01	2	1.99143E+01	3	1.99142E+01	4	1.99139E+01	5	1.99135E+01	6	1.99131E+01	7	1.99125E+01
16	1	1.99174E+01	2	1.99173E+01	3	1.99171E+01	4	1.99168E+01	5	1.99164E+01	6	1.99159E+01	7	1.99152E+01
17	1	1.99209E+01	2	1.99209E+01	3	1.99207E+01	4	1.99203E+01	5	1.99199E+01	6	1.99193E+01	7	1.99186E+01
18	1	1.99231E+01	2	1.99230E+01	3	1.99228E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99206E+01
19	1	1.99025E+01	2	1.99025E+01	3	1.99024E+01	4	1.99023E+01	5	1.99021E+01	6	1.99018E+01	7	1.99015E+01
20	1	1.99046E+01	2	1.99046E+01	3	1.99045E+01	4	1.99043E+01	5	1.99041E+01	6	1.99038E+01	7	1.99034E+01
21	1	1.99070E+01	2	1.99069E+01	3	1.99068E+01	4	1.99066E+01	5	1.99064E+01	6	1.99060E+01	7	1.99056E+01
22	1	1.99096E+01	2	1.99096E+01	3	1.99094E+01	4	1.99092E+01	5	1.99089E+01	6	1.99085E+01	7	1.99081E+01
23	1	1.99117E+01	2	1.99116E+01	3	1.99115E+01	4	1.99113E+01	5	1.99109E+01	6	1.99105E+01	7	1.99100E+01
24	1	1.99141E+01	2	1.99141E+01	3	1.99139E+01	4	1.99137E+01	5	1.99133E+01	6	1.99129E+01	7	1.99123E+01
25	1	1.99173E+01	2	1.99173E+01	3	1.99171E+01	4	1.99168E+01	5	1.99164E+01	6	1.99159E+01	7	1.99153E+01
26	1	1.99208E+01	2	1.99208E+01	3	1.99206E+01	4	1.99202E+01	5	1.99198E+01	6	1.99192E+01	7	1.99185E+01
27	1	1.99229E+01	2	1.99228E+01	3	1.99226E+01	4	1.99223E+01	5	1.99218E+01	6	1.99212E+01	7	1.99205E+01
28	1	1.99017E+01	2	1.99016E+01	3	1.99015E+01	4	1.99014E+01	5	1.99012E+01	6	1.99010E+01	7	1.99007E+01
29	1	1.99037E+01	2	1.99037E+01	3	1.99036E+01	4	1.99034E+01	5	1.99032E+01	6	1.99029E+01	7	1.99025E+01
30	1	1.99060E+01	2	1.99060E+01	3	1.99058E+01	4	1.99057E+01	5	1.99054E+01	6	1.99051E+01	7	1.99047E+01
31	1	1.99085E+01	2	1.99085E+01	3	1.99084E+01	4	1.99081E+01	5	1.99078E+01	6	1.99075E+01	7	1.99070E+01
32	1	1.99107E+01	2	1.99106E+01	3	1.99105E+01	4	1.99103E+01	5	1.99100E+01	6	1.99096E+01	7	1.99091E+01
33	1	1.99133E+01	2	1.99132E+01	3	1.99131E+01	4	1.99128E+01	5	1.99125E+01	6	1.99120E+01	7	1.99115E+01
34	1	1.99164E+01	2	1.99164E+01	3	1.99162E+01	4	1.99159E+01	5	1.99155E+01	6	1.99151E+01	7	1.99145E+01
35	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99177E+01
36	1	1.99217E+01	2	1.99216E+01	3	1.99214E+01	4	1.99211E+01	5	1.99206E+01	6	1.99201E+01	7	1.99193E+01
37	1	1.99042E+01	2	1.99042E+01	3	1.99041E+01	4	1.99039E+01	5	1.99037E+01	6	1.99034E+01	7	1.99030E+01
38	1	1.99063E+01	2	1.99063E+01	3	1.99061E+01	4	1.99060E+01	5	1.99057E+01	6	1.99054E+01	7	1.99050E+01
39	1	1.99089E+01	2	1.99089E+01	3	1.99088E+01	4	1.99085E+01	5	1.99082E+01	6	1.99079E+01	7	1.99074E+01
40	1	1.99115E+01	2	1.99114E+01	3	1.99113E+01	4	1.99110E+01	5	1.99107E+01	6	1.99102E+01	7	1.99097E+01
41	1	1.99136E+01	2	1.99135E+01	3	1.99134E+01	4	1.99131E+01	5	1.99128E+01	6	1.99123E+01	7	1.99118E+01
42	1	1.99161E+01	2	1.99161E+01	3	1.99159E+01	4	1.99156E+01	5	1.99152E+01	6	1.99147E+01	7	1.99142E+01
43	1	1.99196E+01	2	1.99195E+01	3	1.99193E+01	4	1.99190E+01	5	1.99186E+01	6	1.99181E+01	7	1.99174E+01
44	1	1.99231E+01	2	1.99231E+01	3	1.99229E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99207E+01
45	1	1.99251E+01	2	1.99250E+01	3	1.99248E+01	4	1.99245E+01	5	1.99240E+01	6	1.99233E+01	7	1.99226E+01
46	1	1.99028E+01	2	1.99028E+01	3	1.99027E+01	4	1.99025E+01	5	1.99023E+01	6	1.99020E+01	7	1.99017E+01
47	1	1.99048E+01	2	1.99047E+01	3	1.99046E+0					6	1.99039E+01	7	1.99035E+01
48	1	1.99072E+01	2	1.99072E+01	3	1.99070E+0					6	1.99062E+01	7	1.99058E+01
49	1	1.99098E+01	2	1.99098E+01	3	1.99096E+01	4	1.99094E+01	5	1.99091E+01	6	1.99087E+01	7	1.99082E+01
50	1	1.99119E+01	2	1.99118E+01	3	1.99117E+01	4	1.99114E+01	5	1.99111E+01	6	1.99107E+01	7	1.99102E+01
51	1	1.99143E+01	2	1.99143E+01	3	1.99141E+01	4	1.99138E+01	5	1.99134E+01	6	1.99130E+01	7	1.99124E+01
52	1	1.99174E+01	2	1.99174E+01	3	1.99172E+01	4	1.99169E+01	5	1.99165E+01	6	1.99160E+01	7	1.99154E+01
53	1	1.99210E+01	2	1.99209E+01	3	1.99207E+01	4	1.99204E+01	5	1.99199E+01	6	1.99194E+01	7	1.99187E+01
54	1	1.99232E+01	2	1.99231E+01	3	1.99229E+01	4	1.99225E+01	5	1.99221E+01	6	1.99215E+01	7	1.99207E+01
55	1	1.99020E+01	2	1.99020E+01	3	1.99019E+01	4	1.99017E+01	5	1.99015E+01	6	1.99013E+01	7	1.99010E+01
56	1	1.99040E+01	2	1.99040E+01	3	1.99039E+01	4	1.99037E+01	5	1.99035E+01	6	1.99032E+01	7	1.99028E+01
57	1	1.99063E+01	2	1.99063E+01	3	1.99062E+01	4	1.99060E+01	5	1.99057E+01	6	1.99054E+01	7	1.99050E+01
58	1	1.99089E+01	2	1.99088E+01	3	1.99087E+01	4	1.99085E+01	5	1.99082E+01	6	1.99078E+01	7	1.99074E+01
59	1	1.99109E+01	2	1.99108E+01	3	1.99107E+01	4	1.99105E+01	5	1.99101E+01	6	1.99097E+01	7	1.99093E+01
60	1	1.99132E+01	2	1.99132E+01	3	1.99130E+01	4	1.99128E+01	5	1.99124E+01	6	1.99120E+01	7	1.99114E+01
61	1	1.99163E+01	2	1.99162E+01	3	1.99160E+01	4	1.99157E+01	5	1.99154E+01	6	1.99149E+01	7	1.99143E+01
62	1	1.99197E+01	2	1.99196E+01	3	1.99194E+01	4	1.99191E+01	5	1.99187E+01	6	1.99182E+01	7	1.99175E+01
63	1	1.99217E+01	2	1.99217E+01	3	1.99215E+01	4	1.99212E+01	5	1.99207E+01	6	1.99202E+01	7	1.99195E+01
64	1	1.99018E+01	2	1.99017E+01	3	1.99016E+01	4	1.99015E+01	5	1.99013E+01	6	1.99010E+01	7	1.99007E+01
65	1	1.99038E+01	2	1.99037E+01	3	1.99036E+01	4	1.99035E+01	5	1.99032E+01	6	1.99030E+01	7	1.99026E+01
66	1	1.99062E+01	2	1.99061E+01	3	1.99060E+01	4	1.99058E+01	5	1.99056E+01	6	1.99052E+01	7	1.99048E+01
67	1	1.99086E+01	2	1.99086E+01	3	1.99084E+01	4	1.99082E+01	5	1.99079E+01	6	1.99076E+01	7	1.99072E+01
68	1	1.99107E+01	2	1.99107E+01	3	1.99105E+01	4	1.99103E+01	5	1.99100E+01	6	1.99096E+01	7	1.99092E+01
69	1	1.99134E+01	2	1.99133E+01	3	1.99132E+01	4	1.99129E+01	5	1.99126E+01	6	1.99121E+01	7	1.99116E+01
70	1	1.99164E+01	2	1.99163E+01	3	1.99162E+01	4	1.99159E+01	5	1.99155E+01	6	1.99150E+01	7	1.99144E+01
71	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99176E+01
72	1	1.99217E+01	2	1.99216E+01	3	1.99214E+01	4	1.99211E+01	5	1.99206E+01	6	1.99201E+01	7	1.99194E+01
73	1	1.99042E+01	2	1.99041E+01	3	1.99040E+01	4	1.99039E+01	5	1.99036E+01	6	1.99033E+01	7	1.99030E+01
74	1	1.99064E+01	2	1.99063E+01	3	1.99062E+01	4	1.99060E+01	5	1.99058E+01	6	1.99054E+01	7	1.99050E+01
75	1	1.99088E+01	2	1.99088E+01	3	1.99087E+01	4	1.99085E+01	5	1.99082E+01	6	1.99078E+01	7	1.99074E+01
76	1	1.99114E+01	2	1.99114E+01	3	1.99112E+01	4	1.99110E+01	5	1.99106E+01	6	1.99102E+01	7	1.99097E+01
77	1	1.99136E+01	2	1.99136E+01	3	1.99134E+01	4	1.99132E+01	5	1.99128E+01	6	1.99124E+01	7	1.99118E+01
78	1	1.99161E+01	2	1.99161E+01	3	1.99159E+01	4	1.99156E+01	5	1.99152E+01	6	1.99147E+01	7	1.99141E+01
79	1	1.99195E+01	2	1.99194E+01	3	1.99193E+01	4	1.99189E+01	5	1.99185E+01	6	1.99179E+01	7	1.99173E+01
80	1	1.99231E+01	2	1.99230E+01	3	1.99228E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99207E+01
81	1	1.99250E+01	2	1.99250E+01	3	1.99248E+01	4	1.99244E+01	5	1.99239E+01	6	1.99233E+01	7	1.99225E+01

0 SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	8	1.99058E+01	9	1.99052E+01	10	1.99046E+01	11	1.99040E+01	12	1.99040E+01	13	1.99037E+01	14	1.99026E+01
2	8	1.99076E+01	9	1.99069E+01	10	1.99062E+01	11	1.99055E+01	12	1.99055E+01	13	1.99052E+01	14	1.99041E+01
3	8	1.99103E+01	9	1.99095E+01	10	1.99086E+01	11	1.99076E+01	12	1.99076E+01	13	1.99071E+01	14	1.99057E+01
4	8	1.99130E+01	9	1.99121E+01	10	1.99112E+01	11	1.99102E+01	12	1.99102E+01	13	1.99095E+01	14	1.99081E+01
5	8	1.99150E+01	9	1.99141E+01	10	1.99131E+01	11	1.99121E+01	12	1.99120E+01	13	1.99114E+01	14	1.99098E+01
6	8	1.99176E+01	9	1.99166E+01	10	1.99157E+01	11	1.99148E+01	12	1.99147E+01	13	1.99143E+01	14	1.99130E+01
7	8	1.99209E+01	9	1.99199E+01	10	1.99187E+01	11	1.99175E+01	12	1.99174E+01	13	1.99167E+01	14	1.99151E+01
8	8	1.99243E+01	9	1.99232E+01	10	1.99220E+01	11	1.99206E+01	12	1.99206E+01	13	1.99197E+01	14	1.99180E+01
9	8	1.99262E+01	9	1.99250E+01	10	1.99237E+01	11	1.99223E+01	12	1.99223E+01	13	1.99215E+01	14	1.99202E+01
10	8	1.99013E+01	9	1.99008E+01	10	1.99004E+01	11	1.99000E+01	12	1.99000E+01	13	1.98998E+01	14	1.98986E+01
11	8	1.99031E+01	9	1.99027E+01	10	1.99022E+01	11	1.99017E+01	12	1.99017E+01	13	1.99015E+01	14	1.99004E+01
12	8	1.99053E+01	9	1.99048E+01	10	1.99042E+01	11	1.99035E+01	12	1.99035E+01	13	1.99031E+01	14	1.99016E+01
13	8	1.99077E+01	9	1.99070E+01	10	1.99064E+01	11	1.99058E+01	12	1.99058E+01	13	1.99055E+01	14	1.99042E+01
14	8	1.99096E+01	9	1.99090E+01	10	1.99083E+01	11	1.99077E+01	12	1.99077E+01	13	1.99074E+01	14	1.99060E+01
15	8	1.99119E+01	9	1.99112E+01	10	1.99104E+01	11	1.99097E+01	12	1.99097E+01	13	1.99094E+01	14	1.99081E+01
16	8	1.99145E+01	9	1.99137E+01	10	1.99129E+01	11	1.99119E+01	12	1.99119E+01	13	1.99113E+01	14	1.99100E+01
17	8	1.99178E+01	9	1.99169E+01	10	1.99158E+01	11	1.99147E+01	12	1.99147E+01	13	1.99141E+01	14	1.99126E+01
18	8	1.99198E+01	9	1.99189E+01	10	1.99179E+01	11	1.99167E+01	12	1.99167E+01	13	1.99161E+01	14	1.99149E+01
19	8	1.99011E+01	9	1.99007E+01	10	1.99002E+01	11	1.98999E+01	12	1.98999E+01	13	1.98997E+01	14	1.98985E+01
20	8	1.99030E+01	9	1.99025E+01	10	1.99020E+01	11	1.99015E+01	12	1.99015E+01	13	1.99013E+01	14	1.99003E+01
21	8	1.99052E+01	9	1.99046E+01	10	1.99041E+01	11	1.99036E+01	12	1.99036E+01	13	1.99033E+01	14	1.99021E+01
22	8	1.99076E+01	9	1.99070E+01	10	1.99064E+01	11	1.99058E+01	12	1.99058E+01	13	1.99056E+01	14	1.99045E+01
23	8	1.99094E+01	9	1.99087E+01	10	1.99081E+01	11	1.99074E+01	12	1.99074E+01	13	1.99072E+01	14	1.99060E+01
24	8	1.99117E+01	9	1.99109E+01	10	1.99101E+01	11	1.99091E+01	12	1.99091E+01	13	1.99086E+01	14	1.99073E+01
25	8	1.99146E+01	9	1.99138E+01	10	1.99129E+01	11	1.99119E+01	12	1.99119E+01	13	1.99114E+01	14	1.99102E+01
26	8	1.99177E+01	9	1.99168E+01	10	1.99158E+01	11	1.99150E+01	12	1.99150E+01	13	1.99146E+01	14	1.99133E+01
27	8	1.99197E+01	9	1.99188E+01	10	1.99178E+01	11	1.99166E+01	12	1.99166E+01	13	1.99160E+01	14	1.99146E+01
28	8	1.99003E+01	9	1.99000E+01	10	1.98995E+01	11	1.98990E+01	12	1.98990E+01	13	1.98986E+01	14	1.98972E+01
29	8	1.99021E+01	9	1.99017E+01	10	1.99012E+01	11	1.99008E+01	12	1.99008E+01	13	1.99006E+01	14	1.98993E+01
30	8	1.99043E+01	9	1.99038E+01	10	1.99032E+01	11	1.99027E+01	12	1.99027E+01	13	1.99025E+01	14	1.99012E+01
31	8	1.99065E+01	9	1.99060E+01	10	1.99054E+01	11	1.99048E+01	12	1.99048E+01	13	1.99046E+01	14	1.99035E+01
32	8	1.99086E+01	9	1.99080E+01	10	1.99073E+01	11	1.99067E+01	12	1.99067E+01	13	1.99064E+01	14	1.99051E+01
33	8	1.99109E+01	9	1.99102E+01	10	1.99095E+01	11	1.99086E+01	12	1.99086E+01	13	1.99081E+01	14	1.99067E+01
34	8	1.99138E+01	9	1.99130E+01	10	1.99122E+01	11	1.99115E+01	12	1.99115E+01	13	1.99111E+01	14	1.99100E+01
35	8	1.99169E+01	9	1.99161E+01	10	1.99152E+01	11	1.99141E+01	12	1.99141E+01	13	1.99135E+01	14	1.99121E+01
36	8	1.99185E+01	9	1.99176E+01	10	1.99167E+01	11	1.99158E+01	12	1.99158E+01	13	1.99154E+01	14	1.99143E+01
37	8	1.99026E+01	9	1.99021E+01	10	1.99016E+01	11	1.99012E+01	12	1.99012E+01	13	1.99010E+01	14	1.98997E+01
38	8	1.99045E+01	9	1.99040E+01	10	1.99034E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99014E+01
39	8	1.99069E+01	9	1.99063E+01	10	1.99057E+01	11	1.99049E+01	12	1.99049E+01	13	1.99044E+01	14	1.99031E+01
40	8	1.99091E+01	9	1.99085E+01	10	1.99078E+01	11	1.99072E+01	12	1.99072E+01	13	1.99069E+01	14	1.99056E+01
41	8	1.99112E+01	9	1.99104E+01	10	1.99096E+01	11	1.99086E+01	12	1.99086E+01	13	1.99081E+01	14	1.99068E+01
42	8	1.99135E+01	9	1.99127E+01	10	1.99119E+01	11	1.99109E+01	12	1.99109E+01	13	1.99104E+01	14	1.99090E+01
43	8	1.99166E+01	9	1.99157E+01	10	1.99147E+01	11	1.99136E+01	12	1.99136E+01	13	1.99130E+01	14	1.99115E+01
44	8	1.99199E+01	9	1.99190E+01	10	1.99180E+01	11	1.99168E+01	12	1.99168E+01	13	1.99162E+01	14	1.99148E+01
45	8	1.99217E+01	9	1.99207E+01	10	1.99197E+01	11	1.99184E+01	12	1.99184E+01	13	1.99178E+01	14	1.99165E+01
46	8	1.99013E+01	9	1.99009E+01	10	1.99004E+01	11	1.99000E+01	12	1.99000E+01	13	1.98998E+01	14	1.98986E+01
47	8	1.99031E+01	9	1.99026E+01	10	1.99021E+01	11	1.99017E+01	12	1.99017E+01	13	1.99014E+01	14	1.99003E+01
48	8	1.99054E+01	9	1.99048E+01	10	1.99043E+01	11	1.99037E+01	12	1.99037E+01	13	1.99035E+01	14	1.99022E+01
49	8	1.99077E+01	9	1.99070E+01	10	1.99063E+01	11	1.99054E+01	12	1.99054E+01	13	1.99050E+01	14	1.99036E+01
50	8	1.99097E+01	9	1.99091E+01	10	1.99084E+01	11	1.99075E+01	12	1.99075E+01	13	1.99070E+01	14	1.99057E+01
51	8	1.99117E+01	9	1.99110E+01	10	1.99102E+01	11	1.99093E+01	12	1.99093E+01	13	1.99088E+01	14	1.99074E+01
52	8	1.99147E+01	9	1.99139E+01	10	1.99130E+01	11	1.99120E+01	12	1.99120E+01	13	1.99113E+01	14	1.99099E+01
53	8	1.99179E+01	9	1.99171E+01	10	1.99161E+01	11	1.99150E+01	12	1.99150E+01	13	1.99144E+01	14	1.99131E+01
54	8	1.99199E+01	9	1.99189E+01	10	1.99179E+01	11	1.99170E+01	12	1.99170E+01	13	1.99166E+01	14	1.99154E+01
55	8	1.99006E+01	9	1.99002E+01	10	1.98998E+01	11	1.98995E+01	12	1.98995E+01	13	1.98993E+01	14	1.98982E+01
56	8	1.99024E+01	9	1.99020E+01	10	1.99015E+01	11	1.99011E+01	12	1.99011E+01	13	1.99009E+01	14	1.98996E+01
57	8	1.99046E+01	9	1.99041E+01	10	1.99036E+01	11	1.99029E+01	12	1.99029E+01	13	1.99025E+01	14	1.99011E+01
58	8	1.99069E+01	9	1.99064E+01	10	1.99057E+01	11	1.99050E+01	12	1.99050E+01	13	1.99046E+01	14	1.99034E+01
59	8	1.99087E+01	9	1.99081E+01	10	1.99075E+01	11	1.99069E+01	12	1.99069E+01	13	1.99067E+01	14	1.99054E+01
60	8	1.99108E+01	9	1.99101E+01	10	1.99094E+01	11	1.99088E+01	12	1.99088E+01	13	1.99085E+01	14	1.99072E+01
61	8	1.99136E+01	9	1.99128E+01	10	1.99120E+01	11	1.99113E+01	12	1.99113E+01	13	1.99109E+01	14	1.99098E+01
62	8	1.99168E+01	9	1.99160E+01	10	1.99151E+01	11	1.99140E+01	12	1.99140E+01	13	1.99134E+01	14	1.99122E+01
63	8	1.99187E+01	9	1.99178E+01	10	1.99168E+01	11	1.99157E+01	12	1.99157E+01	13	1.99150E+01	14	1.99136E+01
64	8	1.99004E+01	9	1.99000E+01	10	1.98995E+01	11	1.98992E+01	12	1.98992E+01	13	1.98991E+01	14	1.98979E+01
65	8	1.99022E+01	9	1.99017E+01	10	1.99013E+01	11	1.99008E+01	12	1.99008E+01	13	1.99006E+01	14	1.98994E+01
66	8	1.99044E+01	9	1.99039E+01	10	1.99033E+01	11	1.99026E+01	12	1.99026E+01	13	1.99022E+01	14	1.99007E+01
67	8	1.99067E+01	9	1.99061E+01	10	1.99055E+01	11	1.99048E+01	12	1.99048E+01	13	1.99043E+01	14	1.99029E+01
68	8	1.99086E+01	9	1.99081E+01	10	1.99074E+01	11	1.99066E+01	12	1.99066E+01	13	1.99061E+01	14	1.99045E+01
69	8	1.99109E+01	9	1.99102E+01	10	1.99095E+01	11	1.99088E+01	12	1.99088E+01	13	1.99085E+01	14	1.99074E+01
70	8	1.99137E+01	9	1.99130E+01	10	1.99121E+01	11	1.99112E+01	12	1.99112E+01	13	1.99105E+01	14	1.99090E+01
71	8	1.99169E+01	9	1.99160E+01	10	1.99151E+01	11	1.99140E+01	12	1.99140E+01	13	1.99134E+01	14	1.99117E+01
72	8	1.99186E+01	9	1.99177E+01	10	1.99167E+01	11	1.99156E+01	12	1.99156E+01	13	1.99149E+01	14	1.99132E+01
73	8	1.99026E+01	9	1.99022E+01	10	1.99017E+01	11	1.99010E+01	12	1.99010E+01	13	1.99006E+01	14	1.98992E+01
74	8	1.99045E+01	9	1.99040E+01	10	1.99035E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99016E+01
75	8	1.99069E+01	9	1.99063E+01	10	1.99057E+01	11	1.99049E+01	12	1.99049E+01	13	1.99045E+01	14	1.99032E+01
76	8	1.99092E+01	9	1.99085E+01	10	1.99079E+01	11	1.99072E+01	12	1.99072E+01	13	1.99070E+01	14	1.99056E+01
77	8	1.99112E+01	9	1.99105E+01	10	1.99096E+01	11	1.99087E+01	12	1.99087E+01	13	1.99082E+01	14	1.99069E+01
78	8	1.99135E+01	9	1.99127E+01	10	1.99119E+01	11	1.99109E+01	12	1.99109E+01	13	1.99104E+01	14	1.99091E+01
79	8	1.99165E+01	9	1.99156E+01	10	1.99147E+01	11	1.99139E+01	12	1.99139E+01	13	1.99135E+01	14	1.99123E+01
80	8	1.99199E+01	9	1.99189E+01	10	1.99179E+01	11	1.99167E+01	12	1.99167E+01	13	1.99160E+01	14	1.99145E+01
81	8	1.99216E+01	9	1.99205E+01	10	1.99193E+01	11	1.99181E+01	12	1.99181E+01	13	1.99175E+01	14	1.99160E+01

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EUREKA-ATR/M001 (1) THERMAL REACTOR CORE KINETICS CODE
ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR
0 CPU TIME = 213.38

OJUNCTION NUMBER	CONNECTING VOLUMES	JCT. FLOW (TON/HR)	JCT. ENTH (KC/KG)	JCT. SPVL (M**3/KG)	PRESSURE DIFFERENTIALS STAG ATA	ELEV ATA	FRIC ATA	ACCL ATA
1	82 TO 10	2.24435E+01	1.99994E+01	1.00147E-03	7.08665E-01	-9.89207E-02	-6.09683E-01	6.13948E-05
2	1 TO 20	2.24435E+01	2.00002E+01	1.00148E-03	6.94871E-02	-3.69568E-02	-3.25457E-02	-1.54361E-05
3	2 TO 30	2.24435E+01	1.99999E+01	1.00149E-03	1.13230E-01	-4.92755E-02	-6.39906E-02	-3.65592E-05
4	3 TO 40	2.24435E+01	1.99995E+01	1.00149E-03	1.04528E-01	-4.92752E-02	-5.52584E-02	-5.19369E-06
5	4 TO 50	2.24435E+01	1.99993E+01	1.00150E-03	9.60550E-02	-3.69563E-02	-5.90895E-02	9.21578E-06
6	5 TO 60	2.24435E+01	1.99993E+01	1.00150E-03	8.73245E-02	-3.69560E-02	-5.03483E-02	2.01360E-05
7	6 TO 70	2.24435E+01	1.99994E+01	1.00151E-03	1.22306E-01	-4.92745E-02	-7.30671E-02	-3.59452E-05
8	7 TO 80	2.24435E+01	1.99993E+01	1.00151E-03	1.22432E-01	-4.92742E-02	-7.31548E-02	2.86400E-06
9	8 TO 90	2.24435E+01	1.99995E+01	1.00152E-03	7.86305E-02	-3.69555E-02	-4.17064E-02	-3.14446E-05
10	9 TO 910	2.24435E+01	1.99996E+01	1.00152E-03	6.70988E-01	-5.17090E-01	-1.53949E-01	-5.04604E-05
11	83 TO 100	1.84283E+02	1.99969E+01	1.00147E-03	6.79607E-01	-9.89208E-02	-5.80604E-01	8.25693E-05
12	10 TO 110	1.84283E+02	1.99976E+01	1.00148E-03	8.18697E-02	-3.69569E-02	-4.49624E-02	-4.95312E-05
13	11 TO 120	1.84283E+02	1.99971E+01	1.00149E-03	1.09274E-01	-4.92756E-02	-6.00062E-02	-7.79343E-06
14	12 TO 130	1.84283E+02	1.99965E+01	1.00149E-03	1.09389E-01	-4.92753E-02	-6.00821E-02	3.11357E-05
15	13 TO 140	1.84283E+02	1.99960E+01	1.00150E-03	1.02066E-01	-3.69564E-02	-6.51191E-02	-9.73435E-06
16	14 TO 150	1.84283E+02	1.99958E+01	1.00150E-03	8.21168E-02	-3.69560E-02	-4.51747E-02	-1.39258E-05
17	15 TO 160	1.84283E+02	1.99955E+01	1.00151E-03	1.19541E-01	-4.92746E-02	-7.03040E-02	-3.75202E-05
18	16 TO 170	1.84283E+02	1.99951E+01	1.00151E-03	1.29689E-01	-4.92743E-02	-8.04046E-02	1.03000E-05
19	17 TO 180	1.84283E+02	1.99948E+01	1.00152E-03	9.22652E-02	-3.69556E-02	-5.53564E-02	-4.67659E-05
20	18 TO 920	1.84283E+02	1.99948E+01	1.00152E-03	6.73828E-01	-5.17091E-01	-1.56794E-01	-5.63593E-05
21	84 TO 190	5.06977E+02	1.99968E+01	1.00147E-03	6.78070E-01	-9.89208E-02	-5.79069E-01	8.10820E-05
22	19 TO 200	5.06977E+02	1.99976E+01	1.00148E-03	8.19069E-02	-3.69569E-02	-4.49995E-02	-4.95177E-05
23	20 TO 210	5.06977E+02	1.99970E+01	1.00149E-03	1.09344E-01	-4.92756E-02	-6.00551E-02	1.30709E-05
24	21 TO 220	5.06977E+02	1.99965E+01	1.00149E-03	1.09388E-01	-4.92753E-02	-6.01310E-02	-1.86638E-05
25	22 TO 230	5.06977E+02	1.99960E+01	1.00150E-03	1.02163E-01	-3.69564E-02	-6.51777E-02	2.88385E-05
26	23 TO 240	5.06977E+02	1.99958E+01	1.00150E-03	8.21126E-02	-3.69560E-02	-4.52120E-02	-5.54163E-05
27	24 TO 250	5.06977E+02	1.99953E+01	1.00151E-03	1.19620E-01	-4.92746E-02	-7.03637E-02	-1.81797E-05
28	25 TO 260	5.06977E+02	1.99951E+01	1.00151E-03	1.29812E-01	-4.92743E-02	-8.04751E-02	6.21313E-05
29	26 TO 270	5.06977E+02	1.99949E+01	1.00152E-03	9.22883E-02	-3.69556E-02	-5.54044E-02	-7.17145E-05
30	27 TO 930	5.06977E+02	1.99948E+01	1.00152E-03	6.75112E-01	-5.17091E-01	-1.58090E-01	-6.87606E-05
31	85 TO 280	2.88764E+03	1.99966E+01	1.00147E-03	6.74727E-01	-9.89209E-02	-5.75762E-01	4.38441E-05
32	28 TO 290	2.88764E+03	1.99973E+01	1.00148E-03	8.24792E-02	-3.69569E-02	-4.55081E-02	1.41707E-05
33	29 TO 300	2.88764E+03	1.99967E+01	1.00149E-03	1.09999E-01	-4.92756E-02	-6.07345E-02	-1.14319E-05
34	30 TO 310	2.88764E+03	1.99961E+01	1.00149E-03	1.10071E-01	-4.92754E-02	-6.08120E-02	-1.62328E-05
35	31 TO 320	2.88764E+03	1.99956E+01	1.00150E-03	1.02767E-01	-3.69564E-02	-6.57913E-02	1.97157E-05
36	32 TO 330	2.88764E+03	1.99954E+01	1.00150E-03	9.27058E-02	-3.69561E-02	-5.57955E-02	-4.57582E-05
37	33 TO 340	2.88764E+03	1.99949E+01	1.00151E-03	1.20411E-01	-4.92746E-02	-7.11071E-02	2.90315E-05
38	34 TO 350	2.88764E+03	1.99946E+01	1.00151E-03	1.30504E-01	-4.92743E-02	-8.12716E-02	-4.23246E-05
39	35 TO 360	2.88764E+03	1.99943E+01	1.00152E-03	8.29078E-02	-3.69556E-02	-4.59083E-02	4.39100E-05
40	36 TO 940	2.88764E+03	1.99943E+01	1.00152E-03	6.86607E-01	-5.17091E-01	-1.69650E-01	-1.34238E-04
41	86 TO 370	3.52610E+03	1.99973E+01	1.00147E-03	6.93541E-01	-9.89207E-02	-5.94535E-01	8.55843E-05
42	37 TO 380	3.52610E+03	1.99981E+01	1.00148E-03	8.15219E-02	-3.69568E-02	-4.46098E-02	-4.47257E-05
43	38 TO 390	3.52610E+03	1.99976E+01	1.00149E-03	1.08782E-01	-4.92755E-02	-5.95351E-02	-2.89385E-05
44	39 TO 400	3.52610E+03	1.99970E+01	1.00149E-03	1.08925E-01	-4.92752E-02	-5.96104E-02	3.93989E-05
45	40 TO 410	3.52610E+03	1.99967E+01	1.00150E-03	1.01557E-01	-3.69563E-02	-6.46389E-02	-3.84695E-05
46	41 TO 420	3.52610E+03	1.99964E+01	1.00150E-03	8.17577E-02	-3.69560E-02	-4.48204E-02	-1.86827E-05
47	42 TO 430	3.52610E+03	1.99961E+01	1.00151E-03	1.28997E-01	-4.92745E-02	-7.97132E-02	9.63612E-06
48	43 TO 440	3.52610E+03	1.99959E+01	1.00151E-03	1.29060E-01	-4.92742E-02	-7.98112E-02	-2.54174E-05
49	44 TO 450	3.52609E+03	1.99958E+01	1.00152E-03	8.19589E-02	-3.69555E-02	-4.49988E-02	4.57883E-06
50	45 TO 950	3.52609E+03	1.99958E+01	1.00152E-03	6.61519E-01	-5.17091E-01	-1.44514E-01	-8.55737E-05
51	87 TO 460	1.84297E+02	1.99969E+01	1.00147E-03	6.79686E-01	-9.89208E-02	-5.80685E-01	8.03916E-05
52	46 TO 470	1.84297E+02	1.99976E+01	1.00148E-03	8.18812E-02	-3.69569E-02	-4.49685E-02	-4.40872E-05
53	47 TO 480	1.84297E+02	1.99971E+01	1.00149E-03	1.09300E-01	-4.92756E-02	-6.00143E-02	1.02286E-05
54	48 TO 490	1.84297E+02	1.99965E+01	1.00149E-03	1.09330E-01	-4.92753E-02	-6.00902E-02	-3.53458E-05
55	49 TO 500	1.84297E+02	1.99960E+01	1.00150E-03	1.02068E-01	-3.69564E-02	-6.51281E-02	-1.60835E-05
56	50 TO 510	1.84297E+02	1.99958E+01	1.00150E-03	8.21605E-02	-3.69560E-02	-4.51808E-02	2.36896E-05
57	51 TO 520	1.84297E+02	1.99954E+01	1.00151E-03	1.19580E-01	-4.92746E-02	-7.03136E-02	-7.87875E-06
58	52 TO 530	1.84297E+02	1.99951E+01	1.00151E-03	1.29660E-01	-4.92743E-02	-8.04157E-02	-2.97050E-05
59	53 TO 540	1.84297E+02	1.99950E+01	1.00152E-03	9.23703E-02	-3.69556E-02	-5.53640E-02	5.07416E-05
60	54 TO 960	1.84297E+02	1.99950E+01	1.00152E-03	6.73778E-01	-5.17091E-01	-1.56817E-01	-1.29738E-04
61	88 TO 550	4.98027E+02	1.99966E+01	1.00147E-03	6.81879E-01	-9.89208E-02	-5.82874E-01	8.36727E-05
62	55 TO 560	4.98027E+02	1.99973E+01	1.00148E-03	8.22696E-02	-3.69569E-02	-4.53508E-02	-3.81329E-05
63	56 TO 570	4.98027E+02	1.99967E+01	1.00149E-03	1.09769E-01	-4.92756E-02	-6.05260E-02	-3.27995E-05
64	57 TO 580	4.98027E+02	1.99961E+01	1.00149E-03	1.09878E-01	-4.92753E-02	-6.06052E-02	-2.82879E-06
65	58 TO 590	4.98027E+02	1.99956E+01	1.00150E-03	1.01847E-01	-3.69564E-02	-6.48340E-02	5.68519E-05
66	59 TO 600	4.98027E+02	1.99954E+01	1.00150E-03	8.25021E-02	-3.69561E-02	-4.55718E-02	-2.57300E-05
67	60 TO 610	4.98027E+02	1.99949E+01	1.00151E-03	1.19759E-01	-4.92746E-02	-7.04958E-02	-1.13673E-05
68	61 TO 620	4.98026E+02	1.99945E+01	1.00151E-03	1.29486E-01	-4.92743E-02	-8.02601E-02	-4.89729E-05
69	62 TO 630	4.98026E+02	1.99942E+01	1.00152E-03	9.24029E-02	-3.69556E-02	-5.54204E-02	2.68859E-05
70	63 TO 970	4.98026E+02	1.99941E+01	1.00152E-03	6.76221E-01	-5.17091E-01	-1.59237E-01	-1.06957E-04
71	89 TO 640	2.87384E+03	1.99966E+01	1.00147E-03	6.73891E-01	-9.89208E-02	-5.74885E-01	8.45217E-05
72	64 TO 650	2.87384E+03	1.99974E+01	1.00148E-03	8.24014E-02	-3.69569E-02	-4.54844E-02	-3.98067E-05
73	65 TO 660	2.87384E+03	1.99967E+01	1.00149E-03	1.09957E-01	-4.92756E-02	-6.07024E-02	-2.11950E-05
74	66 TO 670	2.87384E+03	1.99961E+01	1.00149E-03	1.10049E-01	-4.92754E-02	-6.07793E-02	-6.14677E-06
75	67 TO 680	2.87384E+03	1.99956E+01	1.00150E-03	1.02880E-01	-3.69564E-02	-6.59127E-02	1.08536E-05
76	68 TO 690	2.87384E+03	1.99954E+01	1.00150E-03	9.28153E-02	-3.69561E-02	-5.58435E-02	1.57222E-05
77	69 TO 700	2.87384E+03	1.99950E+01	1.00151E-03	1.20386E-01	-4.92746E-02	-7.11464E-02	-3.46557E-05
78	70 TO 710	2.87384E+03	1.99946E+01	1.00151E-03	1.30659E-01	-4.92743E-02	-8.13834E-02	1.55515E-06
79	71 TO 720	2.87384E+03	1.99943E+01	1.00152E-03	8.28355E-02	-3.69556E-02	-4.58822E-02	-2.29421E-06
80	72 TO 980	2.87384E+03	1.99942E+01	1.00152E-03	6.76480E-01	-5.17091E-01	-1.59496E-01	-1.07586E-04
81	90 TO 730	3.52639E+03	1.99973E+01	1.00147E-03	6.83660E-01	-9.89206E-02	-5.84698E-01	4.19955E-05
82	73 TO 740	3.52639E+03	1.99980E+01	1.00148E-03	8.15743E-02	-3.69568E-02	-4.46144E-02	3.13186E-06
83	74 TO 750	3.52639E+03	1.99976E+01	1.00149E-03	1.08777E-01	-4.92755E-02	-5.95412E-02	-3.99338E-05
84	75 TO 760	3.52638E+03	1.99971E+01	1.00149E-03	1.08940E-01	-4.92752E-02	-5.96165E-02	4.78409E-05
85	76 TO 770	3.52638E+03	1.99967E+01	1.00150E-03	1.01552E-01	-3.69563E-02	-6.46448E-02	-4.88902E-05
86	77 TO 780	3.52638E+03	1.99965E+01	1.00150E-03	8.17737E-02	-3.69560E-02	-4.48250E-02	-7.23975E-06
87	78 TO 790	3.52638E+03	1.99962E+01	1.00151E-03	1.29038E-01	-4.92745E-02	-7.97206E-02	4.28191E-05
88	79 TO 800	3.52638E+03	1.99960E+01	1.00151E-03	1.29045E-01	-4.92742E-02	-7.98187E-02	-4.76279E-05

89	80 TO 81□	3.52638E+03	1.99958E+01	1.00152E-03	8.19604E-02	-3.69555E-02	-4.50034E-02	1.40331E-06
90	81 TO 99□	3.52638E+03	1.99957E+01	1.00152E-03	6.61523E-01	-5.17091E-01	-1.44529E-01	-9.66868E-05
91	102 TO 82□	2.24435E+01	1.99987E+01	1.00142E-03	7.39777E-01	-8.66017E-02	-6.53205E-01	-3.00466E-05
92	91 TO 103□	2.24433E+01	2.00215E+01	1.00157E-03	7.38995E-01	-5.94656E-01	-1.44196E-01	1.42758E-04
93	100 TO 83□	1.84283E+02	1.99987E+01	1.00142E-03	7.32329E-01	-8.66018E-02	-6.45743E-01	-1.56786E-05
94	92 TO 101□	1.84281E+02	2.00150E+01	1.00157E-03	7.40114E-01	-5.94657E-01	-1.45313E-01	1.44576E-04
95	100 TO 84□	5.06977E+02	1.99987E+01	1.00142E-03	7.30552E-01	-8.66018E-02	-6.43965E-01	-1.53967E-05
96	93 TO 101□	5.06973E+02	2.00153E+01	1.00157E-03	7.41398E-01	-5.94657E-01	-1.46597E-01	1.43815E-04
97	100 TO 85□	2.88764E+03	1.99987E+01	1.00142E-03	7.03858E-01	-8.66018E-02	-6.17270E-01	-1.38406E-05
98	94 TO 101□	2.88761E+03	2.00141E+01	1.00156E-03	7.42988E-01	-5.94657E-01	-1.48186E-01	1.44420E-04
99	100 TO 86□	3.52610E+03	1.99987E+01	1.00142E-03	7.28548E-01	-8.66017E-02	-6.41965E-01	-1.83352E-05
100	95 TO 101□	3.52607E+03	2.00114E+01	1.00156E-03	7.27907E-01	-5.94657E-01	-1.33097E-01	1.52120E-04
101	102 TO 87□	1.84297E+02	1.99987E+01	1.00142E-03	7.32417E-01	-8.66018E-02	-6.45830E-01	-1.56293E-05
102	96 TO 103□	1.84295E+02	2.00150E+01	1.00157E-03	7.40136E-01	-5.94657E-01	-1.45335E-01	1.44624E-04
103	102 TO 88□	4.98027E+02	1.99987E+01	1.00142E-03	7.22466E-01	-8.66018E-02	-6.35878E-01	-1.38775E-05
104	97 TO 103□	4.98022E+02	2.00136E+01	1.00156E-03	7.43580E-01	-5.94657E-01	-1.48778E-01	1.44481E-04
105	102 TO 89□	2.87384E+03	1.99987E+01	1.00142E-03	7.05221E-01	-8.66018E-02	-6.18633E-01	-1.39648E-05
106	98 TO 103□	2.87382E+03	2.00144E+01	1.00156E-03	7.52844E-01	-5.94657E-01	-1.58043E-01	1.44222E-04
107	102 TO 90□	3.52639E+03	1.99987E+01	1.00142E-03	7.38586E-01	-8.66017E-02	-6.52003E-01	-1.83552E-05
108	99 TO 103□	3.52636E+03	2.00114E+01	1.00156E-03	7.27922E-01	-5.94657E-01	-1.33112E-01	1.52688E-04
109	0 TO 100□	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
110	0 TO 102□	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE

ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-10-17

0 CPU TIME = 213.40

OJUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
1	1.30427E+00	1.30427E+00	2.24435E+01	0.00000E+00	2.00027E+01	0.00000E+00	2.00027E+01
2	1.30431E+00	1.30431E+00	2.24435E+01	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
3	1.30431E+00	1.30431E+00	2.24435E+01	0.00000E+00	2.00006E+01	0.00000E+00	2.00006E+01
4	1.30432E+00	1.30432E+00	2.24435E+01	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
5	1.30433E+00	1.30433E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
6	1.30433E+00	1.30433E+00	2.24435E+01	0.00000E+00	1.99998E+01	0.00000E+00	1.99998E+01
7	1.30434E+00	1.30434E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
8	1.30435E+00	1.30435E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
9	1.30435E+00	1.30435E+00	2.24435E+01	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
10	1.30436E+00	1.30436E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
11	1.33866E+00	1.33866E+00	1.84283E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
12	1.33870E+00	1.33870E+00	1.84283E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
13	1.33871E+00	1.33871E+00	1.84283E+02	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
14	1.33872E+00	1.33872E+00	1.84283E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
15	1.33872E+00	1.33872E+00	1.84283E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
16	1.33873E+00	1.33873E+00	1.84283E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
17	1.33873E+00	1.33873E+00	1.84283E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
18	1.33874E+00	1.33874E+00	1.84283E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
19	1.33875E+00	1.33875E+00	1.84283E+02	0.00000E+00	1.99956E+01	0.00000E+00	1.99956E+01
20	1.33876E+00	1.33876E+00	1.84283E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
21	1.33919E+00	1.33919E+00	5.06977E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
22	1.33923E+00	1.33923E+00	5.06977E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
23	1.33923E+00	1.33923E+00	5.06977E+02	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
24	1.33924E+00	1.33924E+00	5.06977E+02	0.00000E+00	1.99972E+01	0.00000E+00	1.99972E+01
25	1.33925E+00	1.33925E+00	5.06977E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
26	1.33925E+00	1.33925E+00	5.06977E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
27	1.33926E+00	1.33926E+00	5.06977E+02	0.00000E+00	1.99961E+01	0.00000E+00	1.99961E+01
28	1.33927E+00	1.33927E+00	5.06977E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
29	1.33927E+00	1.33927E+00	5.06977E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
30	1.33928E+00	1.33928E+00	5.06977E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
31	1.35331E+00	1.35331E+00	2.88764E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
32	1.35335E+00	1.35335E+00	2.88764E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
33	1.35335E+00	1.35335E+00	2.88764E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
34	1.35336E+00	1.35336E+00	2.88764E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
35	1.35337E+00	1.35337E+00	2.88764E+03	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
36	1.35337E+00	1.35337E+00	2.88764E+03	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
37	1.35338E+00	1.35338E+00	2.88764E+03	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
38	1.35339E+00	1.35339E+00	2.88764E+03	0.00000E+00	1.99954E+01	0.00000E+00	1.99954E+01
39	1.35340E+00	1.35340E+00	2.88764E+03	0.00000E+00	1.99951E+01	0.00000E+00	1.99951E+01
40	1.35340E+00	1.35340E+00	2.88764E+03	0.00000E+00	1.99948E+01	0.00000E+00	1.99948E+01
41	1.33061E+00	1.33061E+00	3.52610E+03	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
42	1.33065E+00	1.33065E+00	3.52610E+03	0.00000E+00	1.99986E+01	0.00000E+00	1.99986E+01
43	1.33065E+00	1.33065E+00	3.52610E+03	0.00000E+00	1.99984E+01	0.00000E+00	1.99984E+01
44	1.33066E+00	1.33066E+00	3.52610E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
45	1.33067E+00	1.33067E+00	3.52610E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
46	1.33067E+00	1.33067E+00	3.52610E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
47	1.33068E+00	1.33068E+00	3.52610E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
48	1.33069E+00	1.33069E+00	3.52610E+03	0.00000E+00	1.99967E+01	0.00000E+00	1.99967E+01
49	1.33070E+00	1.33070E+00	3.52609E+03	0.00000E+00	1.99966E+01	0.00000E+00	1.99966E+01

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE
ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-10-17
0 CPU TIME = 213.40

OJUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
50	1.33070E+00	1.33070E+00	3.52609E+03	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
51	1.33876E+00	1.33876E+00	1.84297E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
52	1.33880E+00	1.33880E+00	1.84297E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
53	1.33881E+00	1.33881E+00	1.84297E+02	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
54	1.33881E+00	1.33881E+00	1.84297E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
55	1.33882E+00	1.33882E+00	1.84297E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
56	1.33883E+00	1.33883E+00	1.84297E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
57	1.33883E+00	1.33883E+00	1.84297E+02	0.00000E+00	1.99962E+01	0.00000E+00	1.99962E+01
58	1.33884E+00	1.33884E+00	1.84297E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
59	1.33885E+00	1.33885E+00	1.84297E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
60	1.33885E+00	1.33885E+00	1.84297E+02	0.00000E+00	1.99955E+01	0.00000E+00	1.99955E+01
61	1.37819E+00	1.37819E+00	4.98027E+02	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
62	1.37823E+00	1.37823E+00	4.98027E+02	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
63	1.37824E+00	1.37824E+00	4.98027E+02	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
64	1.37824E+00	1.37824E+00	4.98027E+02	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
65	1.37825E+00	1.37825E+00	4.98027E+02	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
66	1.37826E+00	1.37826E+00	4.98027E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
67	1.37826E+00	1.37826E+00	4.98027E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
68	1.37827E+00	1.37827E+00	4.98026E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
69	1.37828E+00	1.37828E+00	4.98026E+02	0.00000E+00	1.99950E+01	0.00000E+00	1.99950E+01
70	1.37828E+00	1.37828E+00	4.98026E+02	0.00000E+00	1.99946E+01	0.00000E+00	1.99946E+01
71	1.34684E+00	1.34684E+00	2.87384E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
72	1.34688E+00	1.34688E+00	2.87384E+03	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
73	1.34689E+00	1.34689E+00	2.87384E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
74	1.34690E+00	1.34690E+00	2.87384E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
75	1.34690E+00	1.34690E+00	2.87384E+03	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
76	1.34691E+00	1.34691E+00	2.87384E+03	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
77	1.34691E+00	1.34691E+00	2.87384E+03	0.00000E+00	1.99958E+01	0.00000E+00	1.99958E+01
78	1.34692E+00	1.34692E+00	2.87384E+03	0.00000E+00	1.99954E+01	0.00000E+00	1.99954E+01
79	1.34693E+00	1.34693E+00	2.87384E+03	0.00000E+00	1.99951E+01	0.00000E+00	1.99951E+01
80	1.34694E+00	1.34694E+00	2.87384E+03	0.00000E+00	1.99948E+01	0.00000E+00	1.99948E+01
81	1.33072E+00	1.33072E+00	3.52639E+03	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
82	1.33076E+00	1.33076E+00	3.52639E+03	0.00000E+00	1.99985E+01	0.00000E+00	1.99985E+01
83	1.33076E+00	1.33076E+00	3.52639E+03	0.00000E+00	1.99984E+01	0.00000E+00	1.99984E+01
84	1.33077E+00	1.33077E+00	3.52638E+03	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
85	1.33078E+00	1.33078E+00	3.52638E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
86	1.33078E+00	1.33078E+00	3.52638E+03	0.00000E+00	1.99970E+01	0.00000E+00	1.99970E+01
87	1.33079E+00	1.33079E+00	3.52638E+03	0.00000E+00	1.99970E+01	0.00000E+00	1.99970E+01
88	1.33080E+00	1.33080E+00	3.52638E+03	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
89	1.33080E+00	1.33080E+00	3.52638E+03	0.00000E+00	1.99965E+01	0.00000E+00	1.99965E+01
90	1.33081E+00	1.33081E+00	3.52638E+03	0.00000E+00	1.99962E+01	0.00000E+00	1.99962E+01
91	3.24568E+00	3.24568E+00	2.24435E+01	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
92	1.45641E+00	1.45641E+00	2.24433E+01	0.00000E+00	2.00336E+01	0.00000E+00	2.00336E+01
93	3.33132E+00	3.33132E+00	1.84283E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
94	1.49480E+00	1.49480E+00	1.84281E+02	0.00000E+00	2.00271E+01	0.00000E+00	2.00271E+01
95	3.33257E+00	3.33257E+00	5.06977E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
96	1.49539E+00	1.49539E+00	5.06973E+02	0.00000E+00	2.00274E+01	0.00000E+00	2.00274E+01
97	3.36766E+00	3.36766E+00	2.88764E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
98	1.51117E+00	1.51117E+00	2.88761E+03	0.00000E+00	2.00263E+01	0.00000E+00	2.00263E+01
99	3.31120E+00	3.31120E+00	3.52610E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE
ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-10-17
0 CPU TIME = 213.41

OJUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
100	1.48581E+00	1.48581E+00	3.52607E+03	0.00000E+00	2.00235E+01	0.00000E+00	2.00235E+01
101	3.33157E+00	3.33157E+00	1.84297E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
102	1.49491E+00	1.49491E+00	1.84295E+02	0.00000E+00	2.00271E+01	0.00000E+00	2.00271E+01
103	3.42968E+00	3.42968E+00	4.98027E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
104	1.53895E+00	1.53895E+00	4.98022E+02	0.00000E+00	2.00257E+01	0.00000E+00	2.00257E+01
105	3.35157E+00	3.35157E+00	2.87384E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
106	1.50395E+00	1.50395E+00	2.87382E+03	0.00000E+00	2.00265E+01	0.00000E+00	2.00265E+01
107	3.31147E+00	3.31147E+00	3.52639E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
108	1.48593E+00	1.48593E+00	3.52636E+03	0.00000E+00	2.00235E+01	0.00000E+00	2.00235E+01
109	0.00000E+00	0.00000E+00	7.10500E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
110	0.00000E+00	0.00000E+00	7.10500E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01

```
 IPRTCT =   1

 CHANNEL  RESULTS

          CHANNEL   CONNECTING          C O O L A N T            FUEL
           NUMBER     VOLUMES       TEMPERATURE    VOID FRAC    TEMPERATURE
                                          (C)          (-)          (C)

              1        1 TO   9     1.99099E+01   0.00000E+00   1.99155E+01
              2       10 TO  18     1.99058E+01   0.00000E+00   1.99100E+01
              3       19 TO  27     1.99057E+01   0.00000E+00   1.99099E+01
              4       28 TO  36     1.99051E+01   0.00000E+00   1.99090E+01
              5       37 TO  45     1.99071E+01   0.00000E+00   1.99117E+01
              6       46 TO  54     1.99058E+01   0.00000E+00   1.99101E+01
              7       55 TO  63     1.99052E+01   0.00000E+00   1.99092E+01
              8       64 TO  72     1.99051E+01   0.00000E+00   1.99091E+01
              9       73 TO  81     1.99072E+01   0.00000E+00   1.99117E+01
 IM,JM,KM,KMIN,KMAX
 23 13 4 1 15
 IFT,E1,V1,X1
 1 20.009995 0.00000000E+00 0.00000000E+00
 FSP,PLP1(L),FP,FSG,FSUB,FD,FHL,FI,FAX,QCPR(L),CQQ,X1
 AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
  0.1001E+01 0.2272E-05 0.7189E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00 0.6982E-06 0.0000E+00
  0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1000E+01 0.3044E+03 0.2592E+01 0.8800E+00-0.2528E+00 0.1186E+03
 IM,JM,KM,KMIN,KMAX
 23 13 14 1 15
 IFT,E1,V1,X1
 2 15.949999 0.00000000E+00 0.00000000E+00
 FSP,PLP1(L),FP,FSG,FSUB,FD,FHL,FI,FAX,QCPR(L),CQQ,X1
 AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
  0.8388E+00 0.1494E-05 0.7252E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00 0.3123E-07 0.0000E+00
  0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1000E+01 0.3970E+02 0.3122E+01 0.8800E+00-0.2528E+00 0.1186E+03
1  ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR                                                                    91-10-17


                              ************** SUMMARY  TABLE ***************

                                   MINIMUM CPR ,(I,J,K),L =    0.000, 28, 17, 15,  3

                                   MAXIMUM LHGR,(I,J,K),L =    0.000, 25, 15,  3,  3

                                   CPR (25,15, 3)         =   99.990

                                   LHGR(28,17,15)         =    0.000

 IPRTCT =   1
OPLOT RECORD NUMBER =   26
0### PERIOD SHORT (SCRAM) SIGNAL ON ###  AT 2.64000E+01 (SEC.)
```

(7)ドップラー係数を減少させたBDBE (パス6)1点近似感度解析

EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE
ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-10-26
0 CPU TIME = 211.67
STANDARD TIME STEP NUMBER 250. ACTUAL TIME STEP NUMBER 269. TIME = 0.250000E+02 SEC. LAST DT = 0.100000E+00 SEC.
0

TOTAL SYSTEM QUANTITIES	NORM POWR	POWR (MW)	ENERGY (MWS)	TOT. REAC (¥)	DOP. REAC (¥)	WAT-T REAC (¥)	VOID REAC (¥)	EXP. REAC (¥)	INSTD REAC (¥)
	8.77281E+00	1.66915E-07	1.19808E-06	4.56598E-01	2.83251E-04	-1.65673E-04	0.00000E+00	0.00000E+00	4.56480E-01
0 VOLUME NUMBER	AVG. PRES (KG/CM**2A)	TOT. MASS (KG) H2O	AVG. ENTH (KC/KG)	AVG. DENS (KG/M3)	AVG. TEMP (C)	AVG. QUAL	LIQ. MASS (KG)		
1	3.19550E+00	1.17893E+00	2.00005E+01	9.98518E+02	1.99019E+01	0.00000E+00	1.17893E+00		
2	3.12598E+00	2.35885E+00	2.00004E+01	9.98515E+02	1.99033E+01	0.00000E+00	2.35885E+00		
3	3.01275E+00	2.35884E+00	2.00000E+01	9.98509E+02	1.99054E+01	0.00000E+00	2.35884E+00		
4	2.90823E+00	2.35883E+00	1.99999E+01	9.98504E+02	1.99076E+01	0.00000E+00	2.35883E+00		
5	2.81219E+00	1.17891E+00	1.99996E+01	9.98500E+02	1.99094E+01	0.00000E+00	1.17891E+00		
6	2.72485E+00	2.35881E+00	1.99999E+01	9.98495E+02	1.99117E+01	0.00000E+00	2.35881E+00		
7	2.60255E+00	2.35879E+00	1.99999E+01	9.98489E+02	1.99143E+01	0.00000E+00	2.35879E+00		
8	2.48013E+00	2.35878E+00	2.00000E+01	9.98483E+02	1.99172E+01	0.00000E+00	2.35878E+00		
9	2.40144E+00	1.17889E+00	1.99999E+01	9.98480E+02	1.99188E+01	0.00000E+00	1.17889E+00		
10	3.23125E+00	9.43346E+00	1.99979E+01	9.98520E+02	1.98985E+01	0.00000E+00	9.43346E+00		
11	3.14931E+00	1.88679E+01	1.99977E+01	9.98516E+02	1.99000E+01	0.00000E+00	1.88679E+01		
12	3.04007E+00	1.88678E+01	1.99970E+01	9.98511E+02	1.99018E+01	0.00000E+00	1.88678E+01		
13	2.93068E+00	1.88677E+01	1.99966E+01	9.98506E+02	1.99038E+01	0.00000E+00	1.88677E+01		
14	2.82860E+00	9.43328E+00	1.99961E+01	9.98501E+02	1.99055E+01	0.00000E+00	9.43328E+00		
15	2.74648E+00	1.88675E+01	1.99960E+01	9.98497E+02	1.99073E+01	0.00000E+00	1.88675E+01		
16	2.62692E+00	1.88674E+01	1.99957E+01	9.98491E+02	1.99096E+01	0.00000E+00	1.88674E+01		
17	2.49725E+00	1.88673E+01	1.99954E+01	9.98485E+02	1.99122E+01	0.00000E+00	1.88673E+01		
18	2.40493E+00	9.43309E+00	1.99951E+01	9.98481E+02	1.99139E+01	0.00000E+00	9.43309E+00		
19	3.23423E+00	2.59435E+01	1.99979E+01	9.98520E+02	1.98984E+01	0.00000E+00	2.59435E+01		
20	3.15225E+00	5.18859E+01	1.99976E+01	9.98517E+02	1.98999E+01	0.00000E+00	5.18859E+01		
21	3.04294E+00	5.18856E+01	1.99970E+01	9.98511E+02	1.99017E+01	0.00000E+00	5.18856E+01		
22	2.93352E+00	5.18853E+01	1.99966E+01	9.98506E+02	1.99037E+01	0.00000E+00	5.18853E+01		
23	2.83139E+00	2.59430E+01	1.99961E+01	9.98501E+02	1.99055E+01	0.00000E+00	2.59430E+01		
24	2.74924E+00	5.18849E+01	1.99959E+01	9.98497E+02	1.99071E+01	0.00000E+00	5.18849E+01		
25	2.62961E+00	5.18846E+01	1.99957E+01	9.98492E+02	1.99095E+01	0.00000E+00	5.18846E+01		
26	2.49985E+00	5.18842E+01	1.99955E+01	9.98485E+02	1.99122E+01	0.00000E+00	5.18842E+01		
27	2.40749E+00	2.59425E+01	1.99951E+01	9.98481E+02	1.99138E+01	0.00000E+00	2.59425E+01		
28	3.25230E+00	1.46225E+02	1.99975E+01	9.98521E+02	1.98976E+01	0.00000E+00	1.46225E+02		
29	3.16979E+00	2.92449E+02	1.99973E+01	9.98517E+02	1.98992E+01	0.00000E+00	2.92449E+02		
30	3.05978E+00	2.92447E+02	1.99967E+01	9.98512E+02	1.99010E+01	0.00000E+00	2.92447E+02		
31	2.94969E+00	2.92445E+02	1.99962E+01	9.98507E+02	1.99030E+01	0.00000E+00	2.92445E+02		
32	2.84696E+00	1.46222E+02	1.99957E+01	9.98502E+02	1.99047E+01	0.00000E+00	1.46222E+02		
33	2.75422E+00	2.92443E+02	1.99955E+01	9.98498E+02	1.99066E+01	0.00000E+00	2.92443E+02		
34	2.63381E+00	2.92441E+02	1.99952E+01	9.98492E+02	1.99090E+01	0.00000E+00	2.92441E+02		
35	2.50330E+00	2.92439E+02	1.99949E+01	9.98486E+02	1.99115E+01	0.00000E+00	2.92439E+02		
36	2.42041E+00	1.46219E+02	1.99946E+01	9.98482E+02	1.99131E+01	0.00000E+00	1.46219E+02		
37	3.20316E+00	1.81601E+02	1.99984E+01	9.98519E+02	1.98995E+01	0.00000E+00	1.81601E+02		
38	3.12157E+00	3.63201E+02	1.99981E+01	9.98515E+02	1.99011E+01	0.00000E+00	3.63201E+02		
39	3.01278E+00	3.63199E+02	1.99976E+01	9.98510E+02	1.99030E+01	0.00000E+00	3.63199E+02		
40	2.90388E+00	3.63198E+02	1.99973E+01	9.98505E+02	1.99050E+01	0.00000E+00	3.63198E+02		
41	2.80228E+00	1.81598E+02	1.99967E+01	9.98500E+02	1.99067E+01	0.00000E+00	1.81598E+02		
42	2.72053E+00	3.63194E+02	1.99967E+01	9.98496E+02	1.99085E+01	0.00000E+00	3.63194E+02		
43	2.59155E+00	3.63192E+02	1.99964E+01	9.98490E+02	1.99111E+01	0.00000E+00	3.63192E+02		
44	2.46247E+00	3.63190E+02	1.99964E+01	9.98483E+02	1.99139E+01	0.00000E+00	3.63190E+02		
45	2.38051E+00	1.81594E+02	1.99961E+01	9.98479E+02	1.99155E+01	0.00000E+00	1.81594E+02		
46	3.23136E+00	9.43346E+00	1.99979E+01	9.98520E+02	1.98985E+01	0.00000E+00	9.43346E+00		
47	3.14942E+00	1.88679E+01	1.99976E+01	9.98516E+02	1.99000E+01	0.00000E+00	1.88679E+01		
48	3.04014E+00	1.88678E+01	1.99971E+01	9.98511E+02	1.99019E+01	0.00000E+00	1.88678E+01		
49	2.93079E+00	1.88677E+01	1.99965E+01	9.98506E+02	1.99037E+01	0.00000E+00	1.88677E+01		
50	2.82872E+00	9.43328E+00	1.99961E+01	9.98501E+02	1.99055E+01	0.00000E+00	9.43328E+00		
51	2.74658E+00	1.88675E+01	1.99960E+01	9.98497E+02	1.99073E+01	0.00000E+00	1.88675E+01		
52	2.62698E+00	1.88674E+01	1.99957E+01	9.98491E+02	1.99096E+01	0.00000E+00	1.88674E+01		
53	2.49729E+00	1.88673E+01	1.99955E+01	9.98485E+02	1.99123E+01	0.00000E+00	1.88673E+01		
54	2.40496E+00	9.43309E+00	1.99953E+01	9.98481E+02	1.99140E+01	0.00000E+00	9.43309E+00		
55	3.23827E+00	2.47636E+01	1.99976E+01	9.98521E+02	1.98980E+01	0.00000E+00	2.47636E+01		
56	3.15594E+00	4.95270E+01	1.99973E+01	9.98517E+02	1.98995E+01	0.00000E+00	4.95270E+01		
57	3.04617E+00	4.95267E+01	1.99967E+01	9.98512E+02	1.99013E+01	0.00000E+00	4.95267E+01		
58	2.93628E+00	4.95265E+01	1.99962E+01	9.98506E+02	1.99032E+01	0.00000E+00	4.95265E+01		
59	2.83449E+00	2.47631E+01	1.99957E+01	9.98501E+02	1.99050E+01	0.00000E+00	2.47631E+01		
60	2.75194E+00	4.95261E+01	1.99955E+01	9.98498E+02	1.99066E+01	0.00000E+00	4.95261E+01		
61	2.63217E+00	4.95258E+01	1.99951E+01	9.98492E+02	1.99089E+01	0.00000E+00	4.95258E+01		
62	2.50266E+00	4.95255E+01	1.99948E+01	9.98486E+02	1.99114E+01	0.00000E+00	4.95255E+01		
63	2.41031E+00	2.47626E+01	1.99944E+01	9.98481E+02	1.99130E+01	0.00000E+00	2.47626E+01		
64	3.25226E+00	1.46225E+02	1.99976E+01	9.98521E+02	1.98977E+01	0.00000E+00	1.46225E+02		
65	3.16981E+00	2.92449E+02	1.99973E+01	9.98517E+02	1.98992E+01	0.00000E+00	2.92449E+02		
66	3.05987E+00	2.92447E+02	1.99967E+01	9.98512E+02	1.99010E+01	0.00000E+00	2.92447E+02		
67	2.94981E+00	2.92445E+02	1.99962E+01	9.98507E+02	1.99030E+01	0.00000E+00	2.92445E+02		
68	2.84695E+00	1.46222E+02	1.99957E+01	9.98502E+02	1.99047E+01	0.00000E+00	1.46222E+02		
69	2.75410E+00	2.92443E+02	1.99956E+01	9.98498E+02	1.99067E+01	0.00000E+00	2.92443E+02		
70	2.63373E+00	2.92441E+02	1.99952E+01	9.98492E+02	1.99089E+01	0.00000E+00	2.92441E+02		
71	2.50308E+00	2.92439E+02	1.99949E+01	9.98486E+02	1.99115E+01	0.00000E+00	2.92439E+02		
72	2.42024E+00	1.46219E+02	1.99945E+01	9.98482E+02	1.99130E+01	0.00000E+00	1.46219E+02		
73	3.20325E+00	1.81601E+02	1.99983E+01	9.98519E+02	1.98995E+01	0.00000E+00	1.81601E+02		
74	3.12163E+00	3.63201E+02	1.99982E+01	9.98515E+02	1.99011E+01	0.00000E+00	3.63201E+02		
75	3.01284E+00	3.63199E+02	1.99977E+01	9.98510E+02	1.99030E+01	0.00000E+00	3.63199E+02		
76	2.90394E+00	3.63198E+02	1.99973E+01	9.98505E+02	1.99051E+01	0.00000E+00	3.63198E+02		
77	2.80233E+00	1.81598E+02	1.99967E+01	9.98500E+02	1.99068E+01	0.00000E+00	1.81598E+02		
78	2.72058E+00	3.63194E+02	1.99967E+01	9.98496E+02	1.99086E+01	0.00000E+00	3.63194E+02		
79	2.59155E+00	3.63192E+02	1.99966E+01	9.98490E+02	1.99112E+01	0.00000E+00	3.63192E+02		
80	2.46250E+00	3.63190E+02	1.99963E+01	9.98483E+02	1.99139E+01	0.00000E+00	3.63190E+02		
81	2.38054E+00	1.81594E+02	1.99960E+01	9.98479E+02	1.99153E+01	0.00000E+00	1.81594E+02		
82	3.85907E+00	3.34274E+01	2.00014E+01	9.98550E+02	1.98881E+01	0.00000E+00	3.34274E+01		
83	3.86333E+00	2.01174E+02	1.99989E+01	9.98551E+02	1.98855E+01	0.00000E+00	2.01174E+02		
84	3.86474E+00	5.49014E+02	1.99989E+01	9.98551E+02	1.98854E+01	0.00000E+00	5.49014E+02		
85	3.87846E+00	2.97059E+03	1.99986E+01	9.98552E+02	1.98849E+01	0.00000E+00	2.97059E+03		
86	3.84973E+00	4.15374E+03	1.99994E+01	9.98550E+02	1.98863E+01	0.00000E+00	4.15374E+03		

87	3.86351E+00	2.01174E+02	1.99989E+01	9.98551E+02	1.98855E+01	0.00000E+00	2.01174E+02	
88	3.86977E+00	5.15582E+02	1.99986E+01	9.98551E+02	1.98850E+01	0.00000E+00	5.15582E+02	
89	3.87804E+00	2.97059E+03	1.99986E+01	9.98552E+02	1.98849E+01	0.00000E+00	2.97059E+03	
90	3.83996E+00	4.15374E+03	1.99994E+01	9.98550E+02	1.98865E+01	0.00000E+00	4.15374E+03	
91	1.72829E+00	9.84715E+01	2.00333E+01	9.98441E+02	1.99671E+01	0.00000E+00	9.84715E+01	
92	1.72883E+00	7.70978E+02	2.00268E+01	9.98442E+02	1.99606E+01	0.00000E+00	7.70978E+02	
93	1.73010E+00	2.15602E+03	2.00272E+01	9.98442E+02	1.99609E+01	0.00000E+00	2.15602E+03	
94	1.73142E+00	1.20937E+04	2.00260E+01	9.98442E+02	1.99597E+01	0.00000E+00	1.20937E+04	
95	1.71671E+00	1.24350E+04	2.00232E+01	9.98442E+02	1.99572E+01	0.00000E+00	1.24350E+04	
96	1.72885E+00	7.70998E+02	2.00268E+01	9.98442E+02	1.99606E+01	0.00000E+00	7.70998E+02	
97	1.73161E+00	2.05801E+03	2.00254E+01	9.98442E+02	1.99591E+01	0.00000E+00	2.05801E+03	
98	1.74139E+00	1.20937E+04	2.00262E+01	9.98443E+02	1.99597E+01	0.00000E+00	1.20937E+04	
99	1.71672E+00	1.24350E+04	2.00232E+01	9.98442E+02	1.99572E+01	0.00000E+00	1.24350E+04	
100	4.50517E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98712E+01	0.00000E+00	8.86301E+03	
101	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05	
102	4.50545E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98712E+01	0.00000E+00	8.86301E+03	
103	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05	

0 HEAT SLAB NUMBER	VOL NUM	H.T. MODE	SURF FLUX (KC/HR/M2)	CRIT FLUX (KC/HR/M2)	H.T. COEF (KC/H/M2/C)	SURF TEMP (C)	LOCAL ENGY (CAL/G-UO2)	VOID FRAC	LOCAL MASS FLUX	LOCAL FLUID TEMP.
1	1	1	6.05638E+00	5.86344E+06	1.05395E+04	1.99026E+01	1.07897E+00	0.00000E+00	4.68643E+06	1.99019E+01
2	2	1	6.23687E+00	5.83946E+06	1.05131E+04	1.99041E+01	1.07907E+00	0.00000E+00	4.68643E+06	1.99033E+01
3	3	1	8.43139E-01	5.82862E+06	1.04696E+04	1.99057E+01	1.07921E+00	0.00000E+00	4.68643E+06	1.99054E+01
4	4	1	2.43338E+00	6.76024E+06	1.04289E+04	1.99081E+01	1.07936E+00	0.00000E+00	4.68643E+06	1.99076E+01
5	5	1	1.95160E+00	6.95275E+06	1.03909E+04	1.99098E+01	1.07947E+00	0.00000E+00	4.68643E+06	1.99094E+01
6	6	1	1.24254E+01	6.94269E+06	1.03558E+04	1.99130E+01	1.07961E+00	0.00000E+00	4.68643E+06	1.99117E+01
7	7	1	4.81324E+00	6.92857E+06	1.03058E+04	1.99151E+01	1.07979E+00	0.00000E+00	4.68643E+06	1.99143E+01
8	8	1	4.82570E+00	6.36700E+06	1.02546E+04	1.99180E+01	1.07998E+00	0.00000E+00	4.68643E+06	1.99172E+01
9	9	1	1.19791E+01	6.35860E+06	1.02212E+04	1.99202E+01	1.08008E+00	0.00000E+00	4.68643E+06	1.99188E+01
10	10	1	0.00000E+00	5.86684E+06	0.00000E+00	1.98986E+01	1.07872E+00	0.00000E+00	4.81002E+06	1.98985E+01
11	11	1	2.67235E+00	5.84168E+06	1.07434E+04	1.99004E+01	1.07882E+00	0.00000E+00	4.81002E+06	1.99000E+01
12	12	1	-4.88309E+00	5.83122E+06	1.07007E+04	1.99016E+01	1.07894E+00	0.00000E+00	4.81002E+06	1.99018E+01
13	13	1	2.62059E+00	6.76273E+06	1.06573E+04	1.99042E+01	1.07907E+00	0.00000E+00	4.81002E+06	1.99038E+01
14	14	1	3.84205E+00	6.95463E+06	1.06162E+04	1.99060E+01	1.07918E+00	0.00000E+00	4.81002E+06	1.99055E+01
15	15	1	7.24347E+00	6.94517E+06	1.05826E+04	1.99081E+01	1.07930E+00	0.00000E+00	4.81002E+06	1.99073E+01
16	16	1	2.67743E+00	6.93137E+06	1.05329E+04	1.99100E+01	1.07945E+00	0.00000E+00	4.81002E+06	1.99096E+01
17	17	1	1.91972E+00	6.36882E+06	1.04777E+04	1.99126E+01	1.07962E+00	0.00000E+00	4.81002E+06	1.99122E+01
18	18	1	8.00886E+00	6.35897E+06	1.04378E+04	1.99149E+01	1.07974E+00	0.00000E+00	4.81002E+06	1.99139E+01
19	19	1	0.00000E+00	5.86713E+06	0.00000E+00	1.98985E+01	1.07871E+00	0.00000E+00	4.81191E+06	1.98984E+01
20	20	1	2.77303E+00	5.84196E+06	1.07479E+04	1.99003E+01	1.07882E+00	0.00000E+00	4.81191E+06	1.98999E+01
21	21	1	2.23673E+00	5.83150E+06	1.07052E+04	1.99021E+01	1.07894E+00	0.00000E+00	4.81191E+06	1.99017E+01
22	22	1	6.29923E+00	6.76305E+06	1.06618E+04	1.99045E+01	1.07907E+00	0.00000E+00	4.81191E+06	1.99037E+01
23	23	1	3.75277E+00	6.95495E+06	1.06207E+04	1.99060E+01	1.07917E+00	0.00000E+00	4.81191E+06	1.99055E+01
24	24	1	7.65035E-01	6.94549E+06	1.05871E+04	1.99073E+01	1.07929E+00	0.00000E+00	4.81191E+06	1.99071E+01
25	25	1	5.76407E+00	6.93169E+06	1.05373E+04	1.99102E+01	1.07945E+00	0.00000E+00	4.81191E+06	1.99095E+01
26	26	1	9.38967E+00	6.36909E+06	1.04821E+04	1.99133E+01	1.07962E+00	0.00000E+00	4.81191E+06	1.99122E+01
27	27	1	6.39683E+00	6.35924E+06	1.04422E+04	1.99146E+01	1.07973E+00	0.00000E+00	4.81190E+06	1.99138E+01
28	28	1	-7.35040E+00	5.86886E+06	1.08774E+04	1.98972E+01	1.07867E+00	0.00000E+00	4.86265E+06	1.98976E+01
29	29	1	0.00000E+00	5.84363E+06	0.00000E+00	1.98993E+01	1.07877E+00	0.00000E+00	4.86265E+06	1.98992E+01
30	30	1	4.64691E-01	5.83311E+06	1.08020E+04	1.99012E+01	1.07889E+00	0.00000E+00	4.86265E+06	1.99010E+01
31	31	1	4.49520E+00	6.76485E+06	1.07582E+04	1.99035E+01	1.07901E+00	0.00000E+00	4.86264E+06	1.99030E+01
32	32	1	2.90047E+00	6.95674E+06	1.07165E+04	1.99051E+01	1.07912E+00	0.00000E+00	4.86264E+06	1.99047E+01
33	33	1	-4.35437E-01	6.94606E+06	1.06784E+04	1.99067E+01	1.07925E+00	0.00000E+00	4.86264E+06	1.99066E+01
34	34	1	8.97264E+00	6.93217E+06	1.06279E+04	1.99100E+01	1.07941E+00	0.00000E+00	4.86264E+06	1.99090E+01
35	35	1	3.23763E+00	6.36946E+06	1.05719E+04	1.99121E+01	1.07958E+00	0.00000E+00	4.86264E+06	1.99115E+01
36	36	1	1.11890E+01	6.36061E+06	1.05359E+04	1.99143E+01	1.07967E+00	0.00000E+00	4.86264E+06	1.99131E+01
37	37	1	0.00000E+00	5.86415E+06	0.00000E+00	1.98997E+01	1.07879E+00	0.00000E+00	4.78108E+06	1.98995E+01
38	38	1	2.04982E+00	5.83902E+06	1.06809E+04	1.99014E+01	1.07890E+00	0.00000E+00	4.78107E+06	1.99011E+01
39	39	1	-1.18549E+00	5.82861E+06	1.06384E+04	1.99031E+01	1.07903E+00	0.00000E+00	4.78107E+06	1.99030E+01
40	40	1	4.74531E+00	6.75974E+06	1.05953E+04	1.99056E+01	1.07915E+00	0.00000E+00	4.78107E+06	1.99050E+01
41	41	1	-3.32946E-01	6.95160E+06	1.05544E+04	1.99068E+01	1.07926E+00	0.00000E+00	4.78107E+06	1.99067E+01
42	42	1	3.29932E+00	6.94218E+06	1.05210E+04	1.99090E+01	1.07939E+00	0.00000E+00	4.78107E+06	1.99085E+01
43	43	1	2.05729E+00	6.92728E+06	1.04673E+04	1.99115E+01	1.07956E+00	0.00000E+00	4.78107E+06	1.99111E+01
44	44	1	6.46132E+00	6.36511E+06	1.04124E+04	1.99148E+01	1.07974E+00	0.00000E+00	4.78107E+06	1.99139E+01
45	45	1	8.69891E+00	6.35635E+06	1.03769E+04	1.99165E+01	1.07984E+00	0.00000E+00	4.78107E+06	1.99155E+01
46	46	1	0.00000E+00	5.86686E+06	0.00000E+00	1.98986E+01	1.07873E+00	0.00000E+00	4.81038E+06	1.98985E+01
47	47	1	1.98162E+00	5.84170E+06	1.07441E+04	1.99003E+01	1.07882E+00	0.00000E+00	4.81038E+06	1.99000E+01
48	48	1	1.66745E+00	5.83124E+06	1.07013E+04	1.99022E+01	1.07895E+00	0.00000E+00	4.81038E+06	1.99019E+01
49	49	1	-3.18691E+00	6.76276E+06	1.06580E+04	1.99036E+01	1.07907E+00	0.00000E+00	4.81038E+06	1.99037E+01
50	50	1	-9.14500E-01	6.95465E+06	1.06169E+04	1.99057E+01	1.07918E+00	0.00000E+00	4.81038E+06	1.99055E+01
51	51	1	-3.07222E-01	6.94519E+06	1.05833E+04	1.99074E+01	1.07929E+00	0.00000E+00	4.81038E+06	1.99073E+01
52	52	1	1.64421E+00	6.93139E+06	1.05335E+04	1.99099E+01	1.07945E+00	0.00000E+00	4.81038E+06	1.99096E+01
53	53	1	6.66977E+00	6.36883E+06	1.04784E+04	1.99131E+01	1.07963E+00	0.00000E+00	4.81038E+06	1.99123E+01
54	54	1	1.26703E+01	6.35897E+06	1.04384E+04	1.99154E+01	1.07974E+00	0.00000E+00	4.81038E+06	1.99140E+01
55	55	1	0.00000E+00	5.86752E+06	0.00000E+00	1.98982E+01	1.07869E+00	0.00000E+00	4.95205E+06	1.98980E+01
56	56	1	0.00000E+00	5.84232E+06	0.00000E+00	1.98996E+01	1.07879E+00	0.00000E+00	4.95205E+06	1.98995E+01
57	57	1	-3.99293E+00	5.83182E+06	1.09552E+04	1.99011E+01	1.07890E+00	0.00000E+00	4.95205E+06	1.99013E+01
58	58	1	-2.58270E-01	6.76337E+06	1.09106E+04	1.99034E+01	1.07903E+00	0.00000E+00	4.95205E+06	1.99032E+01
59	59	1	2.01921E+00	6.95531E+06	1.08687E+04	1.99054E+01	1.07913E+00	0.00000E+00	4.95205E+06	1.99050E+01
60	60	1	4.79836E+00	6.94581E+06	1.08342E+04	1.99072E+01	1.07925E+00	0.00000E+00	4.95205E+06	1.99066E+01
61	61	1	8.38987E+00	6.93199E+06	1.07832E+04	1.99098E+01	1.07940E+00	0.00000E+00	4.95205E+06	1.99089E+01
62	62	1	6.46642E+00	6.36941E+06	1.07269E+04	1.99122E+01	1.07957E+00	0.00000E+00	4.95205E+06	1.99114E+01
63	63	1	2.86152E+00	6.35954E+06	1.06861E+04	1.99136E+01	1.07967E+00	0.00000E+00	4.95205E+06	1.99130E+01
64	64	1	0.00000E+00	5.86886E+06	0.00000E+00	1.98979E+01	1.07867E+00	0.00000E+00	4.83942E+06	1.98977E+01
65	65	1	0.00000E+00	5.84364E+06	0.00000E+00	1.98994E+01	1.07877E+00	0.00000E+00	4.83942E+06	1.98992E+01
66	66	1	-6.36756E+00	5.83313E+06	1.07608E+04	1.99007E+01	1.07889E+00	0.00000E+00	4.83942E+06	1.99010E+01
67	67	1	-2.96203E+00	6.76487E+06	1.07171E+04	1.99029E+01	1.07902E+00	0.00000E+00	4.83942E+06	1.99030E+01
68	68	1	-5.06608E+00	6.95675E+06	1.06756E+04	1.99045E+01	1.07912E+00	0.00000E+00	4.83941E+06	1.99047E+01
69	69	1	5.67135E+00	6.94606E+06	1.06375E+04	1.99074E+01	1.07925E+00	0.00000E+00	4.83941E+06	1.99067E+01
70	70	1	-1.77661E+00	6.93217E+06	1.05872E+04	1.99090E+01	1.07940E+00	0.00000E+00	4.83941E+06	1.99089E+01
71	71	1	-1.52392E+00	6.36945E+06	1.05314E+04	1.99117E+01	1.07958E+00	0.00000E+00	4.83941E+06	1.99115E+01
72	72	1	-9.34006E-02	6.36060E+06	1.04955E+04	1.99132E+01	1.07967E+00	0.00000E+00	4.83941E+06	1.99130E+01
73	73	1	-5.71787E+00	5.86418E+06	1.07131E+04	1.98992E+01	1.07879E+00	0.00000E+00	4.78147E+06	1.98995E+01
74	74	1	3.38087E+00	5.83904E+06	1.06816E+04	1.99016E+01	1.07890E+00	0.00000E+00	4.78146E+06	1.99011E+01
75	75	1	2.83490E-01	5.82863E+06	1.06392E+04	1.99032E+01	1.07903E+00	0.00000E+00	4.78146E+06	1.99030E+01
76	76	1	4.02288E+00	6.75976E+06	1.05960E+04	1.99056E+01	1.07916E+00	0.00000E+00	4.78146E+06	1.99051E+01
77	77	1	9.01883E-02	6.95162E+06	1.05551E+04	1.99069E+01	1.07926E+00	0.00000E+00	4.78146E+06	1.99068E+01

78	78	1	3.10024E+00	6.94219E+06	1.05217E+04	1.99091E+01	1.07939E+00	0.00000E+00	4.78146E+06	1.99086E+01
79	79	1	9.98540E+00	6.92729E+06	1.04680E+04	1.99123E+01	1.07956E+00	0.00000E+00	4.78146E+06	1.99112E+01
80	80	1	4.24416E+00	6.36512E+06	1.04131E+04	1.99145E+01	1.07974E+00	0.00000E+00	4.78146E+06	1.99139E+01
81	81	1	4.78872E+00	6.35637E+06	1.03776E+04	1.99160E+01	1.07983E+00	0.00000E+00	4.78146E+06	1.99153E+01

0 HEAT SLAB NUMBER	VOL NUM	GAP CONDUCTANCE (KCAL/M2/HR/C)	GAP DISTANCE (M)	CENT TEMP (C)	AVG. TEMP (C)	FUEL POWER (MW)
1	1	3.20000E+02	0.00000E+00	1.99079E+01	1.99058E+01	9.09704E-12
2	2	3.20000E+02	0.00000E+00	1.99100E+01	1.99076E+01	4.18611E-11
3	3	3.20000E+02	0.00000E+00	1.99129E+01	1.99101E+01	5.18860E-11
4	4	3.20000E+02	0.00000E+00	1.99158E+01	1.99129E+01	5.63787E-11
5	5	3.20000E+02	0.00000E+00	1.99179E+01	1.99149E+01	2.85943E-11
6	6	3.20000E+02	0.00000E+00	1.99208E+01	1.99175E+01	6.10138E-11
7	7	3.20000E+02	0.00000E+00	1.99244E+01	1.99208E+01	6.43065E-11
8	8	3.20000E+02	0.00000E+00	1.99280E+01	1.99241E+01	6.54211E-11
9	9	3.20000E+02	0.00000E+00	1.99301E+01	1.99260E+01	2.33625E-11
10	10	1.90000E+03	0.00000E+00	1.99027E+01	1.99012E+01	3.59858E-11
11	11	1.90000E+03	0.00000E+00	1.99047E+01	1.99031E+01	1.54785E-10
12	12	1.90000E+03	0.00000E+00	1.99071E+01	1.99052E+01	1.91140E-10
13	13	1.90000E+03	0.00000E+00	1.99099E+01	1.99076E+01	2.08227E-10
14	14	1.90000E+03	0.00000E+00	1.99119E+01	1.99096E+01	1.06591E-10
15	15	1.90000E+03	0.00000E+00	1.99144E+01	1.99119E+01	2.26778E-10
16	16	1.90000E+03	0.00000E+00	1.99174E+01	1.99144E+01	2.40192E-10
17	17	1.90000E+03	0.00000E+00	1.99209E+01	1.99177E+01	2.48880E-10
18	18	1.90000E+03	0.00000E+00	1.99231E+01	1.99197E+01	9.64809E-11
19	19	1.90000E+03	0.00000E+00	1.99025E+01	1.99011E+01	1.16794E-10
20	20	1.90000E+03	0.00000E+00	1.99046E+01	1.99029E+01	4.99568E-10
21	21	1.90000E+03	0.00000E+00	1.99070E+01	1.99051E+01	6.14202E-10
22	22	1.90000E+03	0.00000E+00	1.99096E+01	1.99075E+01	6.71991E-10
23	23	1.90000E+03	0.00000E+00	1.99117E+01	1.99094E+01	3.42431E-10
24	24	1.90000E+03	0.00000E+00	1.99141E+01	1.99115E+01	7.30436E-10
25	25	1.90000E+03	0.00000E+00	1.99173E+01	1.99145E+01	7.73383E-10
26	26	1.90000E+03	0.00000E+00	1.99208E+01	1.99176E+01	7.98414E-10
27	27	1.90000E+03	0.00000E+00	1.99229E+01	1.99196E+01	3.05939E-10
28	28	1.90000E+03	0.00000E+00	1.99017E+01	1.99003E+01	7.48916E-10
29	29	1.90000E+03	0.00000E+00	1.99037E+01	1.99021E+01	3.22809E-09
30	30	1.90000E+03	0.00000E+00	1.99060E+01	1.99042E+01	3.97648E-09
31	31	1.90000E+03	0.00000E+00	1.99085E+01	1.99065E+01	4.33717E-09
32	32	1.90000E+03	0.00000E+00	1.99107E+01	1.99085E+01	2.20505E-09
33	33	1.90000E+03	0.00000E+00	1.99133E+01	1.99108E+01	4.69015E-09
34	34	1.90000E+03	0.00000E+00	1.99164E+01	1.99137E+01	4.96168E-09
35	35	1.90000E+03	0.00000E+00	1.99199E+01	1.99168E+01	5.12528E-09
36	36	1.90000E+03	0.00000E+00	1.99217E+01	1.99185E+01	1.95201E-09
37	37	1.90000E+03	0.00000E+00	1.99042E+01	1.99026E+01	1.34110E-09
38	38	1.90000E+03	0.00000E+00	1.99063E+01	1.99045E+01	5.55423E-09
39	39	1.90000E+03	0.00000E+00	1.99089E+01	1.99068E+01	6.47337E-09
40	40	1.90000E+03	0.00000E+00	1.99115E+01	1.99091E+01	6.63208E-09
41	41	1.90000E+03	0.00000E+00	1.99136E+01	1.99110E+01	3.15777E-09
42	42	1.90000E+03	0.00000E+00	1.99161E+01	1.99134E+01	6.32124E-09
43	43	1.90000E+03	0.00000E+00	1.99196E+01	1.99165E+01	6.40372E-09
44	44	1.90000E+03	0.00000E+00	1.99231E+01	1.99198E+01	6.57116E-09
45	45	1.90000E+03	0.00000E+00	1.99251E+01	1.99216E+01	2.53279E-09
46	46	1.90000E+03	0.00000E+00	1.99028E+01	1.99013E+01	4.11963E-11
47	47	1.90000E+03	0.00000E+00	1.99048E+01	1.99031E+01	1.77012E-10
48	48	1.90000E+03	0.00000E+00	1.99072E+01	1.99053E+01	2.17821E-10
49	49	1.90000E+03	0.00000E+00	1.99098E+01	1.99076E+01	2.37275E-10
50	50	1.90000E+03	0.00000E+00	1.99119E+01	1.99096E+01	1.20665E-10
51	51	1.90000E+03	0.00000E+00	1.99143E+01	1.99117E+01	2.58203E-10
52	52	1.90000E+03	0.00000E+00	1.99174E+01	1.99146E+01	2.73041E-10
53	53	1.90000E+03	0.00000E+00	1.99210E+01	1.99178E+01	2.80477E-10
54	54	1.90000E+03	0.00000E+00	1.99232E+01	1.99198E+01	1.05680E-10
55	55	1.90000E+03	0.00000E+00	1.99020E+01	1.99006E+01	1.23593E-10
56	56	1.90000E+03	0.00000E+00	1.99040E+01	1.99024E+01	5.28903E-10
57	57	1.90000E+03	0.00000E+00	1.99063E+01	1.99046E+01	6.48690E-10
58	58	1.90000E+03	0.00000E+00	1.99089E+01	1.99069E+01	7.06131E-10
59	59	1.90000E+03	0.00000E+00	1.99109E+01	1.99087E+01	3.58639E-10
60	60	1.90000E+03	0.00000E+00	1.99132E+01	1.99108E+01	7.64758E-10
61	61	1.90000E+03	0.00000E+00	1.99163E+01	1.99135E+01	8.08215E-10
62	62	1.90000E+03	0.00000E+00	1.99197E+01	1.99167E+01	8.33239E-10
63	63	1.90000E+03	0.00000E+00	1.99217E+01	1.99186E+01	3.17154E-10
64	64	1.90000E+03	0.00000E+00	1.99018E+01	1.99003E+01	7.29024E-10
65	65	1.90000E+03	0.00000E+00	1.99038E+01	1.99022E+01	3.13790E-09
66	66	1.90000E+03	0.00000E+00	1.99062E+01	1.99043E+01	3.85795E-09
67	67	1.90000E+03	0.00000E+00	1.99086E+01	1.99066E+01	4.18705E-09
68	68	1.90000E+03	0.00000E+00	1.99107E+01	1.99086E+01	2.11632E-09
69	69	1.90000E+03	0.00000E+00	1.99134E+01	1.99109E+01	4.47283E-09
70	70	1.90000E+03	0.00000E+00	1.99164E+01	1.99137E+01	4.73736E-09
71	71	1.90000E+03	0.00000E+00	1.99199E+01	1.99168E+01	4.91429E-09
72	72	1.90000E+03	0.00000E+00	1.99217E+01	1.99185E+01	1.88377E-09
73	73	1.90000E+03	0.00000E+00	1.99042E+01	1.99025E+01	1.35288E-09
74	74	1.90000E+03	0.00000E+00	1.99064E+01	1.99045E+01	5.63012E-09
75	75	1.90000E+03	0.00000E+00	1.99088E+01	1.99068E+01	6.56763E-09
76	76	1.90000E+03	0.00000E+00	1.99114E+01	1.99091E+01	6.69522E-09
77	77	1.90000E+03	0.00000E+00	1.99136E+01	1.99111E+01	3.17350E-09
78	78	1.90000E+03	0.00000E+00	1.99161E+01	1.99134E+01	6.34145E-09
79	79	1.90000E+03	0.00000E+00	1.99195E+01	1.99164E+01	6.42390E-09
80	80	1.90000E+03	0.00000E+00	1.99231E+01	1.99198E+01	6.62703E-09
81	81	1.90000E+03	0.00000E+00	1.99250E+01	1.99214E+01	2.55446E-09

O SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	1	1.99079E+01	2	1.99078E+01	3	1.99077E+01	4	1.99075E+01	5	1.99072E+01	6	1.99068E+01	7	1.99063E+01
2	1	1.99100E+01	2	1.99099E+01	3	1.99098E+01	4	1.99095E+01	5	1.99092E+01	6	1.99088E+01	7	1.99082E+01
3	1	1.99129E+01	2	1.99128E+01	3	1.99126E+01	4	1.99124E+01	5	1.99120E+01	6	1.99115E+01	7	1.99109E+01
4	1	1.99158E+01	2	1.99157E+01	3	1.99155E+01	4	1.99152E+01	5	1.99148E+01	6	1.99143E+01	7	1.99137E+01
5	1	1.99179E+01	2	1.99178E+01	3	1.99177E+01	4	1.99173E+01	5	1.99169E+01	6	1.99164E+01	7	1.99157E+01
6	1	1.99208E+01	2	1.99207E+01	3	1.99205E+01	4	1.99202E+01	5	1.99197E+01	6	1.99191E+01	7	1.99184E+01
7	1	1.99244E+01	2	1.99243E+01	3	1.99241E+01	4	1.99237E+01	5	1.99232E+01	6	1.99225E+01	7	1.99218E+01
8	1	1.99280E+01	2	1.99280E+01	3	1.99277E+01	4	1.99273E+01	5	1.99268E+01	6	1.99261E+01	7	1.99253E+01
9	1	1.99301E+01	2	1.99300E+01	3	1.99298E+01	4	1.99294E+01	5	1.99288E+01	6	1.99281E+01	7	1.99272E+01
10	1	1.99027E+01	2	1.99027E+01	3	1.99026E+01	4	1.99024E+01	5	1.99022E+01	6	1.99020E+01	7	1.99016E+01
11	1	1.99047E+01	2	1.99047E+01	3	1.99046E+01	4	1.99044E+01	5	1.99042E+01	6	1.99039E+01	7	1.99035E+01
12	1	1.99071E+01	2	1.99071E+01	3	1.99070E+01	4	1.99068E+01	5	1.99065E+01	6	1.99062E+01	7	1.99058E+01
13	1	1.99099E+01	2	1.99098E+01	3	1.99097E+01	4	1.99094E+01	5	1.99091E+01	6	1.99087E+01	7	1.99082E+01
14	1	1.99119E+01	2	1.99118E+01	3	1.99117E+01	4	1.99114E+01	5	1.99111E+01	6	1.99107E+01	7	1.99102E+01
15	1	1.99144E+01	2	1.99143E+01	3	1.99142E+01	4	1.99139E+01	5	1.99135E+01	6	1.99131E+01	7	1.99125E+01
16	1	1.99174E+01	2	1.99173E+01	3	1.99171E+01	4	1.99168E+01	5	1.99164E+01	6	1.99159E+01	7	1.99152E+01
17	1	1.99209E+01	2	1.99209E+01	3	1.99207E+01	4	1.99203E+01	5	1.99199E+01	6	1.99193E+01	7	1.99186E+01
18	1	1.99231E+01	2	1.99230E+01	3	1.99228E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99206E+01
19	1	1.99025E+01	2	1.99025E+01	3	1.99024E+01	4	1.99023E+01	5	1.99021E+01	6	1.99018E+01	7	1.99015E+01
20	1	1.99046E+01	2	1.99046E+01	3	1.99045E+01	4	1.99043E+01	5	1.99041E+01	6	1.99038E+01	7	1.99034E+01
21	1	1.99070E+01	2	1.99069E+01	3	1.99068E+01	4	1.99066E+01	5	1.99064E+01	6	1.99060E+01	7	1.99056E+01
22	1	1.99096E+01	2	1.99096E+01	3	1.99094E+01	4	1.99092E+01	5	1.99089E+01	6	1.99085E+01	7	1.99081E+01
23	1	1.99117E+01	2	1.99116E+01	3	1.99115E+01	4	1.99113E+01	5	1.99109E+01	6	1.99105E+01	7	1.99100E+01
24	1	1.99141E+01	2	1.99141E+01	3	1.99139E+01	4	1.99137E+01	5	1.99133E+01	6	1.99129E+01	7	1.99123E+01
25	1	1.99173E+01	2	1.99173E+01	3	1.99171E+01	4	1.99168E+01	5	1.99164E+01	6	1.99159E+01	7	1.99153E+01
26	1	1.99208E+01	2	1.99208E+01	3	1.99206E+01	4	1.99202E+01	5	1.99198E+01	6	1.99192E+01	7	1.99185E+01
27	1	1.99229E+01	2	1.99228E+01	3	1.99226E+01	4	1.99223E+01	5	1.99218E+01	6	1.99212E+01	7	1.99205E+01
28	1	1.99017E+01	2	1.99016E+01	3	1.99015E+01	4	1.99014E+01	5	1.99012E+01	6	1.99010E+01	7	1.99007E+01
29	1	1.99037E+01	2	1.99037E+01	3	1.99036E+01	4	1.99034E+01	5	1.99032E+01	6	1.99029E+01	7	1.99025E+01
30	1	1.99060E+01	2	1.99060E+01	3	1.99058E+01	4	1.99057E+01	5	1.99054E+01	6	1.99051E+01	7	1.99047E+01
31	1	1.99085E+01	2	1.99085E+01	3	1.99084E+01	4	1.99081E+01	5	1.99078E+01	6	1.99075E+01	7	1.99070E+01
32	1	1.99107E+01	2	1.99106E+01	3	1.99105E+01	4	1.99103E+01	5	1.99100E+01	6	1.99096E+01	7	1.99091E+01
33	1	1.99133E+01	2	1.99132E+01	3	1.99131E+01	4	1.99128E+01	5	1.99125E+01	6	1.99120E+01	7	1.99115E+01
34	1	1.99164E+01	2	1.99164E+01	3	1.99162E+01	4	1.99159E+01	5	1.99155E+01	6	1.99151E+01	7	1.99145E+01
35	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99177E+01
36	1	1.99217E+01	2	1.99216E+01	3	1.99214E+01	4	1.99211E+01	5	1.99206E+01	6	1.99201E+01	7	1.99193E+01
37	1	1.99042E+01	2	1.99042E+01	3	1.99041E+01	4	1.99039E+01	5	1.99037E+01	6	1.99034E+01	7	1.99030E+01
38	1	1.99063E+01	2	1.99063E+01	3	1.99061E+01	4	1.99060E+01	5	1.99057E+01	6	1.99054E+01	7	1.99050E+01
39	1	1.99089E+01	2	1.99089E+01	3	1.99088E+01	4	1.99085E+01	5	1.99082E+01	6	1.99079E+01	7	1.99074E+01
40	1	1.99115E+01	2	1.99114E+01	3	1.99113E+01	4	1.99110E+01	5	1.99107E+01	6	1.99102E+01	7	1.99097E+01
41	1	1.99136E+01	2	1.99135E+01	3	1.99134E+01	4	1.99131E+01	5	1.99128E+01	6	1.99123E+01	7	1.99118E+01
42	1	1.99161E+01	2	1.99161E+01	3	1.99159E+01	4	1.99156E+01	5	1.99152E+01	6	1.99147E+01	7	1.99142E+01
43	1	1.99196E+01	2	1.99195E+01	3	1.99193E+01	4	1.99190E+01	5	1.99186E+01	6	1.99181E+01	7	1.99174E+01
44	1	1.99231E+01	2	1.99231E+01	3	1.99229E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99207E+01
45	1	1.99251E+01	2	1.99250E+01	3	1.99248E+01	4	1.99245E+01	5	1.99240E+01	6	1.99233E+01	7	1.99226E+01
46	1	1.99028E+01	2	1.99028E+01	3	1.99027E+01	4	1.99025E+01	5	1.99023E+01	6	1.99020E+01	7	1.99017E+01
47	1	1.99048E+01	2	1.99047E+01	3	1.99046E+01	4	1.99044E+01	5	1.99042E+01	6	1.99039E+01	7	1.99035E+01
48	1	1.99072E+01	2	1.99072E+01	3	1.99070E+01	4	1.99068E+01	5	1.99066E+01	6	1.99062E+01	7	1.99058E+01
49	1	1.99098E+01	2	1.99098E+01	3	1.99096E+01	4	1.99094E+01	5	1.99091E+01	6	1.99087E+01	7	1.99082E+01
50	1	1.99119E+01	2	1.99118E+01	3	1.99117E+01	4	1.99114E+01	5	1.99111E+01	6	1.99107E+01	7	1.99102E+01
51	1	1.99143E+01	2	1.99143E+01	3	1.99141E+01	4	1.99138E+01	5	1.99134E+01	6	1.99130E+01	7	1.99124E+01
52	1	1.99174E+01	2	1.99174E+01	3	1.99172E+01	4	1.99169E+01	5	1.99165E+01	6	1.99160E+01	7	1.99154E+01
53	1	1.99210E+01	2	1.99209E+01	3	1.99207E+01	4	1.99204E+01	5	1.99199E+01	6	1.99194E+01	7	1.99187E+01
54	1	1.99232E+01	2	1.99231E+01	3	1.99229E+01	4	1.99225E+01	5	1.99221E+01	6	1.99215E+01	7	1.99207E+01
55	1	1.99020E+01	2	1.99020E+01	3	1.99019E+01	4	1.99017E+01	5	1.99015E+01	6	1.99013E+01	7	1.99010E+01
56	1	1.99040E+01	2	1.99040E+01	3	1.99039E+01	4	1.99037E+01	5	1.99035E+01	6	1.99032E+01	7	1.99028E+01
57	1	1.99063E+01	2	1.99063E+01	3	1.99062E+01	4	1.99060E+01	5	1.99057E+01	6	1.99054E+01	7	1.99050E+01
58	1	1.99089E+01	2	1.99088E+01	3	1.99087E+01	4	1.99085E+01	5	1.99082E+01	6	1.99078E+01	7	1.99074E+01
59	1	1.99109E+01	2	1.99108E+01	3	1.99107E+01	4	1.99105E+01	5	1.99101E+01	6	1.99097E+01	7	1.99093E+01
60	1	1.99132E+01	2	1.99132E+01	3	1.99130E+01	4	1.99128E+01	5	1.99124E+01	6	1.99120E+01	7	1.99114E+01
61	1	1.99163E+01	2	1.99162E+01	3	1.99160E+01	4	1.99157E+01	5	1.99154E+01	6	1.99149E+01	7	1.99143E+01
62	1	1.99197E+01	2	1.99196E+01	3	1.99194E+01	4	1.99191E+01	5	1.99187E+01	6	1.99182E+01	7	1.99175E+01
63	1	1.99217E+01	2	1.99217E+01	3	1.99215E+01	4	1.99212E+01	5	1.99207E+01	6	1.99202E+01	7	1.99195E+01
64	1	1.99018E+01	2	1.99017E+01	3	1.99016E+01	4	1.99015E+01	5	1.99013E+01	6	1.99010E+01	7	1.99007E+01
65	1	1.99038E+01	2	1.99037E+01	3	1.99036E+01	4	1.99035E+01	5	1.99032E+01	6	1.99030E+01	7	1.99026E+01
66	1	1.99062E+01	2	1.99061E+01	3	1.99060E+01	4	1.99058E+01	5	1.99056E+01	6	1.99052E+01	7	1.99048E+01
67	1	1.99086E+01	2	1.99086E+01	3	1.99084E+01	4	1.99082E+01	5	1.99079E+01	6	1.99076E+01	7	1.99072E+01
68	1	1.99107E+01	2	1.99107E+01	3	1.99105E+01	4	1.99103E+01	5	1.99100E+01	6	1.99096E+01	7	1.99092E+01
69	1	1.99134E+01	2	1.99133E+01	3	1.99132E+01	4	1.99129E+01	5	1.99126E+01	6	1.99121E+01	7	1.99116E+01
70	1	1.99164E+01	2	1.99163E+01	3	1.99162E+01	4	1.99159E+01	5	1.99155E+01	6	1.99150E+01	7	1.99144E+01
71	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99176E+01
72	1	1.99217E+01	2	1.99216E+01	3	1.99214E+01	4	1.99211E+01	5	1.99206E+01	6	1.99201E+01	7	1.99194E+01
73	1	1.99042E+01	2	1.99041E+01	3	1.99040E+01	4	1.99039E+01	5	1.99036E+01	6	1.99033E+01	7	1.99030E+01
74	1	1.99064E+01	2	1.99063E+01	3	1.99062E+01	4	1.99060E+01	5	1.99058E+01	6	1.99054E+01	7	1.99050E+01
75	1	1.99088E+01	2	1.99088E+01	3	1.99087E+01	4	1.99085E+01	5	1.99082E+01	6	1.99078E+01	7	1.99074E+01
76	1	1.99114E+01	2	1.99114E+01	3	1.99112E+01	4	1.99110E+01	5	1.99106E+01	6	1.99102E+01	7	1.99097E+01
77	1	1.99136E+01	2	1.99136E+01	3	1.99134E+01	4	1.99132E+01	5	1.99128E+01	6	1.99124E+01	7	1.99118E+01
78	1	1.99161E+01	2	1.99161E+01	3	1.99159E+01	4	1.99156E+01	5	1.99152E+01	6	1.99147E+01	7	1.99141E+01
79	1	1.99195E+01	2	1.9919AE+01	3	1.99193E+01	4	1.99189E+01	5	1.99185E+01	6	1.99179E+01	7	1.99173E+01
80	1	1.99231E+01	2	1.99230E+01	3	1.99228E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99207E+01
81	1	1.99250E+01	2	1.99250E+01	3	1.99248E+01	4	1.99244E+01	5	1.99239E+01	6	1.99233E+01	7	1.99225E+01

O SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	8	1.99058E+01	9	1.99052E+01	10	1.99046E+01	11	1.99040E+01	12	1.99040E+01	13	1.99037E+01	14	1.99026E+01
2	8	1.99076E+01	9	1.99069E+01	10	1.99062E+01	11	1.99055E+01	12	1.99055E+01	13	1.99052E+01	14	1.99041E+01
3	8	1.99103E+01	9	1.99095E+01	10	1.99086E+01	11	1.99076E+01	12	1.99076E+01	13	1.99071E+01	14	1.99057E+01
4	8	1.99130E+01	9	1.99121E+01	10	1.99112E+01	11	1.99102E+01	12	1.99102E+01	13	1.99095E+01	14	1.99081E+01
5	8	1.99150E+01	9	1.99141E+01	10	1.99131E+01	11	1.99121E+01	12	1.99120E+01	13	1.99114E+01	14	1.99098E+01
6	8	1.99176E+01	9	1.99166E+01	10	1.99157E+01	11	1.99148E+01	12	1.99147E+01	13	1.99143E+01	14	1.99130E+01
7	8	1.99209E+01	9	1.99199E+01	10	1.99187E+01	11	1.99175E+01	12	1.99174E+01	13	1.99167E+01	14	1.99151E+01
8	8	1.99243E+01	9	1.99232E+01	10	1.99220E+01	11	1.99206E+01	12	1.99206E+01	13	1.99197E+01	14	1.99180E+01
9	8	1.99262E+01	9	1.99250E+01	10	1.99237E+01	11	1.99223E+01	12	1.99223E+01	13	1.99215E+01	14	1.99202E+01
10	8	1.99013E+01	9	1.99008E+01	10	1.99004E+01	11	1.99000E+01	12	1.99000E+01	13	1.98998E+01	14	1.98986E+01
11	8	1.99031E+01	9	1.99027E+01	10	1.99022E+01	11	1.99017E+01	12	1.99017E+01	13	1.99015E+01	14	1.99004E+01
12	8	1.99053E+01	9	1.99048E+01	10	1.99042E+01	11	1.99035E+01	12	1.99035E+01	13	1.99031E+01	14	1.99016E+01
13	8	1.99077E+01	9	1.99070E+01	10	1.99064E+01	11	1.99058E+01	12	1.99058E+01	13	1.99055E+01	14	1.99042E+01
14	8	1.99096E+01	9	1.99090E+01	10	1.99083E+01	11	1.99077E+01	12	1.99077E+01	13	1.99074E+01	14	1.99060E+01
15	8	1.99119E+01	9	1.99112E+01	10	1.99104E+01	11	1.99097E+01	12	1.99097E+01	13	1.99094E+01	14	1.99081E+01
16	8	1.99145E+01	9	1.99137E+01	10	1.99129E+01	11	1.99119E+01	12	1.99119E+01	13	1.99113E+01	14	1.99100E+01
17	8	1.99178E+01	9	1.99169E+01	10	1.99158E+01	11	1.99147E+01	12	1.99147E+01	13	1.99141E+01	14	1.99126E+01
18	8	1.99198E+01	9	1.99189E+01	10	1.99179E+01	11	1.99167E+01	12	1.99167E+01	13	1.99161E+01	14	1.99149E+01
19	8	1.99011E+01	9	1.99007E+01	10	1.99002E+01	11	1.98999E+01	12	1.98999E+01	13	1.98997E+01	14	1.98985E+01
20	8	1.99030E+01	9	1.99025E+01	10	1.99020E+01	11	1.99015E+01	12	1.99015E+01	13	1.99013E+01	14	1.99003E+01
21	8	1.99052E+01	9	1.99046E+01	10	1.99041E+01	11	1.99036E+01	12	1.99036E+01	13	1.99033E+01	14	1.99021E+01
22	8	1.99076E+01	9	1.99070E+01	10	1.99064E+01	11	1.99058E+01	12	1.99058E+01	13	1.99056E+01	14	1.99045E+01
23	8	1.99094E+01	9	1.99087E+01	10	1.99081E+01	11	1.99074E+01	12	1.99074E+01	13	1.99072E+01	14	1.99060E+01
24	8	1.99117E+01	9	1.99109E+01	10	1.99101E+01	11	1.99091E+01	12	1.99091E+01	13	1.99086E+01	14	1.99073E+01
25	8	1.99146E+01	9	1.99138E+01	10	1.99129E+01	11	1.99119E+01	12	1.99119E+01	13	1.99114E+01	14	1.99102E+01
26	8	1.99177E+01	9	1.99168E+01	10	1.99158E+01	11	1.99150E+01	12	1.99150E+01	13	1.99146E+01	14	1.99133E+01
27	8	1.99197E+01	9	1.99188E+01	10	1.99178E+01	11	1.99166E+01	12	1.99166E+01	13	1.99160E+01	14	1.99146E+01
28	8	1.99003E+01	9	1.99000E+01	10	1.98995E+01	11	1.98990E+01	12	1.98990E+01	13	1.98986E+01	14	1.98972E+01
29	8	1.99021E+01	9	1.99017E+01	10	1.99012E+01	11	1.99008E+01	12	1.99008E+01	13	1.99006E+01	14	1.98993E+01
30	8	1.99043E+01	9	1.99038E+01	10	1.99032E+01	11	1.99027E+01	12	1.99027E+01	13	1.99025E+01	14	1.99012E+01
31	8	1.99065E+01	9	1.99060E+01	10	1.99054E+01	11	1.99048E+01	12	1.99048E+01	13	1.99046E+01	14	1.99035E+01
32	8	1.99086E+01	9	1.99080E+01	10	1.99073E+01	11	1.99067E+01	12	1.99067E+01	13	1.99064E+01	14	1.99051E+01
33	8	1.99109E+01	9	1.99102E+01	10	1.99095E+01	11	1.99086E+01	12	1.99086E+01	13	1.99081E+01	14	1.99067E+01
34	8	1.99138E+01	9	1.99130E+01	10	1.99122E+01	11	1.99115E+01	12	1.99115E+01	13	1.99111E+01	14	1.99100E+01
35	8	1.99169E+01	9	1.99161E+01	10	1.99152E+01	11	1.99141E+01	12	1.99141E+01	13	1.99135E+01	14	1.99121E+01
36	8	1.99185E+01	9	1.99176E+01	10	1.99167E+01	11	1.99158E+01	12	1.99158E+01	13	1.99154E+01	14	1.99143E+01
37	8	1.99026E+01	9	1.99021E+01	10	1.99016E+01	11	1.99012E+01	12	1.99012E+01	13	1.99010E+01	14	1.98997E+01
38	8	1.99045E+01	9	1.99040E+01	10	1.99034E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99014E+01
39	8	1.99069E+01	9	1.99063E+01	10	1.99057E+01	11	1.99049E+01	12	1.99049E+01	13	1.99044E+01	14	1.99031E+01
40	8	1.99091E+01	9	1.99085E+01	10	1.99078E+01	11	1.99072E+01	12	1.99072E+01	13	1.99069E+01	14	1.99056E+01
41	8	1.99112E+01	9	1.99104E+01	10	1.99096E+01	11	1.99086E+01	12	1.99086E+01	13	1.99081E+01	14	1.99068E+01
42	8	1.99135E+01	9	1.99127E+01	10	1.99119E+01	11	1.99109E+01	12	1.99109E+01	13	1.99104E+01	14	1.99090E+01
43	8	1.99166E+01	9	1.99157E+01	10	1.99147E+01	11	1.99136E+01	12	1.99136E+01	13	1.99130E+01	14	1.99115E+01
44	8	1.99199E+01	9	1.99190E+01	10	1.99180E+01	11	1.99168E+01	12	1.99168E+01	13	1.99162E+01	14	1.99148E+01
45	8	1.99217E+01	9	1.99207E+01	10	1.99197E+01	11	1.99184E+01	12	1.99184E+01	13	1.99178E+01	14	1.99165E+01
46	8	1.99013E+01	9	1.99009E+01	10	1.99004E+01	11	1.99000E+01	12	1.99000E+01	13	1.98998E+01	14	1.98986E+01
47	8	1.99031E+01	9	1.99026E+01	10	1.99021E+01	11	1.99017E+01	12	1.99017E+01	13	1.99014E+01	14	1.99003E+01
48	8	1.99054E+01	9	1.99048E+01	10	1.99043E+01	11	1.99037E+01	12	1.99037E+01	13	1.99035E+01	14	1.99022E+01
49	8	1.99077E+01	9	1.99070E+01	10	1.99063E+01	11	1.99054E+01	12	1.99054E+01	13	1.99050E+01	14	1.99036E+01
50	8	1.99097E+01	9	1.99091E+01	10	1.99084E+01	11	1.99075E+01	12	1.99075E+01	13	1.99070E+01	14	1.99057E+01
51	8	1.99117E+01	9	1.99110E+01	10	1.99102E+01	11	1.99093E+01	12	1.99093E+01	13	1.99088E+01	14	1.99074E+01
52	8	1.99147E+01	9	1.99139E+01	10	1.99130E+01	11	1.99120E+01	12	1.99120E+01	13	1.99113E+01	14	1.99099E+01
53	8	1.99179E+01	9	1.99171E+01	10	1.99161E+01	11	1.99150E+01	12	1.99150E+01	13	1.99144E+01	14	1.99131E+01
54	8	1.99199E+01	9	1.99189E+01	10	1.99179E+01	11	1.99170E+01	12	1.99170E+01	13	1.99166E+01	14	1.99154E+01
55	8	1.99006E+01	9	1.99002E+01	10	1.98998E+01	11	1.98995E+01	12	1.98995E+01	13	1.98993E+01	14	1.98982E+01
56	8	1.99024E+01	9	1.99020E+01	10	1.99015E+01	11	1.99011E+01	12	1.99011E+01	13	1.99009E+01	14	1.98996E+01
57	8	1.99046E+01	9	1.99041E+01	10	1.99036E+01	11	1.99029E+01	12	1.99029E+01	13	1.99025E+01	14	1.99011E+01
58	8	1.99069E+01	9	1.99064E+01	10	1.99057E+01	11	1.99050E+01	12	1.99050E+01	13	1.99046E+01	14	1.99034E+01
59	8	1.99087E+01	9	1.99081E+01	10	1.99075E+01	11	1.99069E+01	12	1.99069E+01	13	1.99067E+01	14	1.99054E+01
60	8	1.99108E+01	9	1.99101E+01	10	1.99094E+01	11	1.99088E+01	12	1.99088E+01	13	1.99085E+01	14	1.99072E+01
61	8	1.99136E+01	9	1.99128E+01	10	1.99120E+01	11	1.99113E+01	12	1.99113E+01	13	1.99109E+01	14	1.99098E+01
62	8	1.99168E+01	9	1.99160E+01	10	1.99151E+01	11	1.99140E+01	12	1.99140E+01	13	1.99134E+01	14	1.99122E+01
63	8	1.99187E+01	9	1.99178E+01	10	1.99168E+01	11	1.99157E+01	12	1.99157E+01	13	1.99150E+01	14	1.99136E+01
64	8	1.99004E+01	9	1.99000E+01	10	1.98995E+01	11	1.98992E+01	12	1.98992E+01	13	1.98991E+01	14	1.98979E+01
65	8	1.99022E+01	9	1.99017E+01	10	1.99013E+01	11	1.99008E+01	12	1.99008E+01	13	1.99006E+01	14	1.98994E+01
66	8	1.99044E+01	9	1.99039E+01	10	1.99033E+01	11	1.99026E+01	12	1.99026E+01	13	1.99022E+01	14	1.99007E+01
67	8	1.99067E+01	9	1.99061E+01	10	1.99055E+01	11	1.99048E+01	12	1.99048E+01	13	1.99043E+01	14	1.99029E+01
68	8	1.99086E+01	9	1.99081E+01	10	1.99074E+01	11	1.99066E+01	12	1.99066E+01	13	1.99061E+01	14	1.99045E+01
69	8	1.99109E+01	9	1.99102E+01	10	1.99095E+01	11	1.99088E+01	12	1.99088E+01	13	1.99085E+01	14	1.99074E+01
70	8	1.99137E+01	9	1.99130E+01	10	1.99121E+01	11	1.99112E+01	12	1.99112E+01	13	1.99105E+01	14	1.99090E+01
71	8	1.99169E+01	9	1.99160E+01	10	1.99151E+01	11	1.99140E+01	12	1.99140E+01	13	1.99134E+01	14	1.99117E+01
72	8	1.99186E+01	9	1.99177E+01	10	1.99167E+01	11	1.99156E+01	12	1.99156E+01	13	1.99149E+01	14	1.99132E+01
73	8	1.99026E+01	9	1.99022E+01	10	1.99017E+01	11	1.99010E+01	12	1.99010E+01	13	1.99006E+01	14	1.98992E+01
74	8	1.99045E+01	9	1.99040E+01	10	1.99035E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99016E+01
75	8	1.99069E+01	9	1.99063E+01	10	1.99057E+01	11	1.99049E+01	12	1.99049E+01	13	1.99045E+01	14	1.99032E+01
76	8	1.99092E+01	9	1.99085E+01	10	1.99079E+01	11	1.99072E+01	12	1.99072E+01	13	1.99070E+01	14	1.99056E+01
77	8	1.99112E+01	9	1.99105E+01	10	1.99096E+01	11	1.99087E+01	12	1.99087E+01	13	1.99082E+01	14	1.99069E+01
78	8	1.99135E+01	9	1.99127E+01	10	1.99119E+01	11	1.99109E+01	12	1.99109E+01	13	1.99104E+01	14	1.99091E+01
79	8	1.99165E+01	9	1.99156E+01	10	1.99147E+01	11	1.99139E+01	12	1.99139E+01	13	1.99135E+01	14	1.99123E+01
80	8	1.99199E+01	9	1.99189E+01	10	1.99179E+01	11	1.99167E+01	12	1.99167E+01	13	1.99160E+01	14	1.99145E+01
81	8	1.99216E+01	9	1.99205E+01	10	1.99193E+01	11	1.99181E+01	12	1.99181E+01	13	1.99175E+01	14	1.99160E+01

PNC TN9410 92-138

EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE

ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-10-26

0 CPU TIME = 211.75

JUNCTION NUMBER	CONNECTING VOLUMES	JCT. FLOW (TON/HR)	JCT. ENTH (KC/KG)	JCT. SPVL (M**3/KG)	PRESSURE DIFFERENTIALS STAG ATA	ELEV ATA	FRIC ATA	ACCL ATA
1	82 TO 10	2.24435E+01	1.99994E+01	1.00147E-03	7.08665E-01	-9.89207E-02	-6.09683E-01	6.13949E-05
2	1 TO 20	2.24435E+01	2.00002E+01	1.00148E-03	6.94871E-02	-3.69568E-02	-3.25457E-02	-1.54360E-05
3	2 TO 30	2.24435E+01	1.99999E+01	1.00149E-03	1.13230E-01	-4.92755E-02	-6.39906E-02	-3.65594E-05
4	3 TO 40	2.24435E+01	1.99995E+01	1.00149E-03	1.04528E-01	-4.92752E-02	-5.52584E-02	-5.19372E-06
5	4 TO 50	2.24435E+01	1.99993E+01	1.00150E-03	9.60550E-02	-3.69563E-02	-5.90895E-02	9.21467E-06
6	5 TO 60	2.24435E+01	1.99993E+01	1.00150E-03	8.73245E-02	-3.69560E-02	-5.03483E-02	2.01376E-05
7	6 TO 70	2.24435E+01	1.99994E+01	1.00151E-03	1.22306E-01	-4.92745E-02	-7.30671E-02	-3.59458E-05
8	7 TO 80	2.24435E+01	1.99993E+01	1.00151E-03	1.22432E-01	-4.92742E-02	-7.31548E-02	2.86422E-06
9	8 TO 90	2.24435E+01	1.99995E+01	1.00152E-03	7.86305E-02	-3.69555E-02	-4.17064E-02	-3.14447E-05
10	9 TO 910	2.24435E+01	1.99996E+01	1.00152E-03	6.70988E-01	-5.17090E-01	-1.53949E-01	-5.04603E-05
11	83 TO 100	1.84283E+02	1.99969E+01	1.00147E-03	6.79607E-01	-9.89208E-02	-5.80604E-01	8.25692E-05
12	10 TO 110	1.84283E+02	1.99976E+01	1.00148E-03	8.18697E-02	-3.69569E-02	-4.49624E-02	-4.95301E-05
13	11 TO 120	1.84283E+02	1.99971E+01	1.00149E-03	1.09274E-01	-4.92756E-02	-6.00062E-02	-7.79445E-06
14	12 TO 130	1.84283E+02	1.99965E+01	1.00149E-03	1.09389E-01	-4.92753E-02	-6.00821E-02	3.11351E-05
15	13 TO 140	1.84283E+02	1.99960E+01	1.00150E-03	1.02066E-01	-3.69564E-02	-6.51191E-02	-9.73268E-06
16	14 TO 150	1.84283E+02	1.99958E+01	1.00150E-03	8.21168E-02	-3.69560E-02	-4.51747E-02	-1.39273E-05
17	15 TO 160	1.84283E+02	1.99955E+01	1.00151E-03	1.19541E-01	-4.92746E-02	-7.03040E-02	-3.75197E-05
18	16 TO 170	1.84283E+02	1.99951E+01	1.00151E-03	1.29689E-01	-4.92743E-02	-8.04046E-02	1.02999E-05
19	17 TO 180	1.84283E+02	1.99948E+01	1.00152E-03	9.22652E-02	-3.69556E-02	-5.53564E-02	-4.67657E-05
20	18 TO 920	1.84283E+02	1.99948E+01	1.00152E-03	6.73828E-01	-5.17091E-01	-1.56794E-01	-5.63594E-05
21	84 TO 190	5.06977E+02	1.99968E+01	1.00147E-03	6.78070E-01	-9.89208E-02	-5.79069E-01	8.10820E-05
22	19 TO 200	5.06977E+02	1.99976E+01	1.00148E-03	8.19069E-02	-3.69569E-02	-4.49995E-02	-4.95180E-05
23	20 TO 210	5.06977E+02	1.99970E+01	1.00149E-03	1.09344E-01	-4.92756E-02	-6.00551E-02	1.30713E-05
24	21 TO 220	5.06977E+02	1.99965E+01	1.00149E-03	1.09388E-01	-4.92753E-02	-6.01310E-02	-1.86640E-05
25	22 TO 230	5.06977E+02	1.99960E+01	1.00150E-03	1.02163E-01	-3.69564E-02	-6.51777E-02	2.88389E-05
26	23 TO 240	5.06977E+02	1.99958E+01	1.00150E-03	8.21126E-02	-3.69560E-02	-4.52120E-02	-5.54166E-05
27	24 TO 250	5.06977E+02	1.99953E+01	1.00151E-03	1.19620E-01	-4.92746E-02	-7.03637E-02	-1.81794E-05
28	25 TO 260	5.06977E+02	1.99951E+01	1.00151E-03	1.29812E-01	-4.92743E-02	-8.04751E-02	6.21310E-05
29	26 TO 270	5.06977E+02	1.99949E+01	1.00152E-03	9.22883E-02	-3.69556E-02	-5.54044E-02	-7.17144E-05
30	27 TO 930	5.06977E+02	1.99948E+01	1.00152E-03	6.75112E-01	-5.17091E-01	-1.58090E-01	-6.87606E-05
31	85 TO 280	2.88764E+03	1.99966E+01	1.00147E-03	6.74727E-01	-9.89209E-02	-5.75762E-01	4.38441E-05
32	28 TO 290	2.88764E+03	1.99973E+01	1.00148E-03	8.24792E-02	-3.69569E-02	-4.55081E-02	1.41725E-05
33	29 TO 300	2.88764E+03	1.99967E+01	1.00149E-03	1.09999E-01	-4.92756E-02	-6.07345E-02	-1.14348E-05
34	30 TO 310	2.88764E+03	1.99961E+01	1.00149E-03	1.10071E-01	-4.92754E-02	-6.08120E-02	-1.62307E-05
35	31 TO 320	2.88764E+03	1.99956E+01	1.00150E-03	1.02767E-01	-3.69564E-02	-6.57913E-02	1.97105E-05
36	32 TO 330	2.88764E+03	1.99954E+01	1.00150E-03	9.27058E-02	-3.69561E-02	-5.57955E-02	-4.57480E-05
37	33 TO 340	2.88764E+03	1.99949E+01	1.00151E-03	1.20411E-01	-4.92746E-02	-7.11071E-02	2.90229E-05
38	34 TO 350	2.88764E+03	1.99946E+01	1.00151E-03	1.30504E-01	-4.92743E-02	-8.12716E-02	-4.23211E-05
39	35 TO 360	2.88764E+03	1.99943E+01	1.00152E-03	8.29078E-02	-3.69556E-02	-4.59083E-02	4.39082E-05
40	36 TO 940	2.88764E+03	1.99943E+01	1.00152E-03	6.86607E-01	-5.17091E-01	-1.69650E-01	-1.34237E-04
41	86 TO 370	3.52610E+03	1.99973E+01	1.00147E-03	6.93541E-01	-9.89207E-02	-5.94535E-01	8.55844E-05
42	37 TO 380	3.52610E+03	1.99981E+01	1.00148E-03	8.15219E-02	-3.69568E-02	-4.46098E-02	-4.47292E-05
43	38 TO 390	3.52610E+03	1.99976E+01	1.00149E-03	1.08782E-01	-4.92755E-02	-5.95351E-02	-2.89270E-05
44	39 TO 400	3.52610E+03	1.99970E+01	1.00149E-03	1.08925E-01	-4.92752E-02	-5.96104E-02	3.93892E-05
45	40 TO 410	3.52610E+03	1.99967E+01	1.00150E-03	1.01557E-01	-3.69563E-02	-6.46389E-02	-3.84665E-05
46	41 TO 420	3.52610E+03	1.99964E+01	1.00150E-03	8.17577E-02	-3.69560E-02	-4.48204E-02	-1.86844E-05
47	42 TO 430	3.52610E+03	1.99961E+01	1.00151E-03	1.28997E-01	-4.92745E-02	-7.97132E-02	9.63653E-06
48	43 TO 440	3.52610E+03	1.99959E+01	1.00151E-03	1.29060E-01	-4.92742E-02	-7.98112E-02	-2.54175E-05
49	44 TO 450	3.52609E+03	1.99958E+01	1.00152E-03	8.19589E-02	-3.69555E-02	-4.49988E-02	4.57895E-06
50	45 TO 950	3.52609E+03	1.99958E+01	1.00152E-03	6.61519E-01	-5.17091E-01	-1.44514E-01	-8.55738E-05
51	87 TO 460	1.84297E+02	1.99969E+01	1.00147E-03	6.79686E-01	-9.89208E-02	-5.80685E-01	8.03933E-05
52	46 TO 470	1.84297E+02	1.99976E+01	1.00148E-03	8.18812E-02	-3.69569E-02	-4.49685E-02	-4.40902E-05
53	47 TO 480	1.84297E+02	1.99971E+01	1.00149E-03	1.09300E-01	-4.92756E-02	-6.00143E-02	1.02307E-05
54	48 TO 490	1.84297E+02	1.99965E+01	1.00149E-03	1.09330E-01	-4.92753E-02	-6.00902E-02	-3.53468E-05
55	49 TO 500	1.84297E+02	1.99960E+01	1.00150E-03	1.02068E-01	-3.69564E-02	-6.51281E-02	-1.60828E-05
56	50 TO 510	1.84297E+02	1.99958E+01	1.00150E-03	8.21605E-02	-3.69560E-02	-4.51808E-02	2.36891E-05
57	51 TO 520	1.84297E+02	1.99954E+01	1.00151E-03	1.19580E-01	-4.92746E-02	-7.03136E-02	-7.87859E-06
58	52 TO 530	1.84297E+02	1.99951E+01	1.00151E-03	1.29660E-01	-4.92743E-02	-8.04157E-02	-2.97051E-05
59	53 TO 540	1.84297E+02	1.99950E+01	1.00152E-03	9.23703E-02	-3.69556E-02	-5.53640E-02	5.07420E-05
60	54 TO 960	1.84297E+02	1.99950E+01	1.00152E-03	6.73778E-01	-5.17091E-01	-1.56817E-01	-1.29738E-04
61	88 TO 550	4.98027E+02	1.99966E+01	1.00147E-03	6.81879E-01	-9.89208E-02	-5.82874E-01	8.36727E-05
62	55 TO 560	4.98027E+02	1.99973E+01	1.00148E-03	8.22696E-02	-3.69569E-02	-4.53508E-02	-3.81305E-05
63	56 TO 570	4.98027E+02	1.99967E+01	1.00149E-03	1.09769E-01	-4.92756E-02	-6.05260E-02	-3.28027E-05
64	57 TO 580	4.98027E+02	1.99961E+01	1.00149E-03	1.09878E-01	-4.92753E-02	-6.06052E-02	-2.82764E-06
65	58 TO 590	4.98027E+02	1.99956E+01	1.00150E-03	1.01847E-01	-3.69564E-02	-6.48340E-02	5.68512E-05
66	59 TO 600	4.98027E+02	1.99954E+01	1.00150E-03	8.25021E-02	-3.69561E-02	-4.55718E-02	-2.57293E-05
67	60 TO 610	4.98027E+02	1.99949E+01	1.00151E-03	1.19759E-01	-4.92746E-02	-7.04958E-02	-1.13677E-05
68	61 TO 620	4.98026E+02	1.99945E+01	1.00151E-03	1.29486E-01	-4.92743E-02	-8.02601E-02	-4.89729E-05
69	62 TO 630	4.98026E+02	1.99942E+01	1.00152E-03	9.24029E-02	-3.69556E-02	-5.54204E-02	2.68901E-05
70	63 TO 970	4.98026E+02	1.99941E+01	1.00152E-03	6.76221E-01	-5.17091E-01	-1.59237E-01	-1.06962E-04
71	89 TO 640	2.87384E+03	1.99966E+01	1.00147E-03	6.73891E-01	-9.89208E-02	-5.74885E-01	8.45220E-05
72	64 TO 650	2.87384E+03	1.99974E+01	1.00148E-03	8.24014E-02	-3.69569E-02	-4.54844E-02	-3.98082E-05
73	65 TO 660	2.87384E+03	1.99967E+01	1.00149E-03	1.09957E-01	-4.92756E-02	-6.07024E-02	-2.11930E-05
74	66 TO 670	2.87384E+03	1.99961E+01	1.00149E-03	1.10049E-01	-4.92754E-02	-6.07793E-02	-6.14774E-06
75	67 TO 680	2.87384E+03	1.99956E+01	1.00150E-03	1.02880E-01	-3.69564E-02	-6.59127E-02	1.08540E-05
76	68 TO 690	2.87384E+03	1.99954E+01	1.00150E-03	9.28153E-02	-3.69561E-02	-5.58435E-02	1.57219E-05
77	69 TO 700	2.87384E+03	1.99950E+01	1.00151E-03	1.20386E-01	-4.92746E-02	-7.11464E-02	-3.46556E-05
78	70 TO 710	2.87384E+03	1.99946E+01	1.00151E-03	1.30659E-01	-4.92743E-02	-8.13834E-02	1.55506E-06
79	71 TO 720	2.87384E+03	1.99943E+01	1.00152E-03	8.28355E-02	-3.69556E-02	-4.58822E-02	-2.29419E-06
80	72 TO 980	2.87384E+03	1.99942E+01	1.00152E-03	6.76480E-01	-5.17091E-01	-1.59496E-01	-1.07586E-04
81	90 TO 730	3.52639E+03	1.99973E+01	1.00147E-03	6.83660E-01	-9.89206E-02	-5.84698E-01	4.19954E-05
82	73 TO 740	3.52639E+03	1.99980E+01	1.00148E-03	8.15743E-02	-3.69568E-02	-4.46144E-02	3.13217E-06
83	74 TO 750	3.52639E+03	1.99976E+01	1.00149E-03	1.08777E-01	-4.92755E-02	-5.95412E-02	-3.99339E-05
84	75 TO 760	3.52638E+03	1.99971E+01	1.00149E-03	1.08940E-01	-4.92752E-02	-5.96165E-02	4.78409E-05
85	76 TO 770	3.52638E+03	1.99967E+01	1.00150E-03	1.01552E-01	-3.69563E-02	-6.46448E-02	-4.88907E-05
86	77 TO 780	3.52638E+03	1.99965E+01	1.00150E-03	8.17737E-02	-3.69560E-02	-4.48250E-02	-7.23921E-06
87	78 TO 790	3.52638E+03	1.99962E+01	1.00151E-03	1.29038E-01	-4.92745E-02	-7.97206E-02	4.28189E-05
88	79 TO 800	3.52638E+03	1.99960E+01	1.00151E-03	1.29045E-01	-4.92742E-02	-7.98187E-02	-4.76279E-05
89	80 TO 810	3.52638E+03	1.99958E+01	1.00152E-03	8.19604E-02	-3.69555E-02	-4.50034E-02	1.40330E-06
90	81 TO 990	3.52638E+03	1.99957E+01	1.00152E-03	6.61523E-01	-5.17091E-01	-1.44529E-01	-9.66868E-05

91	102 TO 82□	2.24435E+01	1.99987E+01	1.00142E-03	7.39777E-01	-8.66017E-02	-6.53205E-01	-3.00466E-05
92	91 TO 103□	2.24433E+01	2.00215E+01	1.00157E-03	7.38995E-01	-5.94656E-01	-1.44196E-01	1.42758E-04
93	100 TO 83□	1.84283E+02	1.99987E+01	1.00142E-03	7.32329E-01	-8.66018E-02	-6.45743E-01	-1.56785E-05
94	92 TO 101□	1.84281E+02	2.00150E+01	1.00157E-03	7.40114E-01	-5.94657E-01	-1.45313E-01	1.44576E-04
95	100 TO 84□	5.06977E+02	1.99987E+01	1.00142E-03	7.30552E-01	-8.66018E-02	-6.43965E-01	-1.53967E-05
96	93 TO 101□	5.06973E+02	2.00153E+01	1.00157E-03	7.41398E-01	-5.94657E-01	-1.46597E-01	1.43815E-04
97	100 TO 85□	2.88764E+03	1.99987E+01	1.00142E-03	7.03858E-01	-8.66018E-02	-6.17270E-01	-1.38406E-05
98	94 TO 101□	2.88761E+03	2.00141E+01	1.00156E-03	7.42988E-01	-5.94657E-01	-1.48186E-01	1.44420E-04
99	100 TO 86□	3.52610E+03	1.99987E+01	1.00142E-03	7.28548E-01	-8.66017E-02	-6.41965E-01	-1.83352E-05
100	95 TO 101□	3.52607E+03	2.00114E+01	1.00156E-03	7.27907E-01	-5.94657E-01	-1.33097E-01	1.52120E-04
101	102 TO 87□	1.84297E+02	1.99987E+01	1.00142E-03	7.32417E-01	-8.66018E-02	-6.45830E-01	-1.56293E-05
102	96 TO 103□	1.84295E+02	2.00150E+01	1.00157E-03	7.40136E-01	-5.94657E-01	-1.45335E-01	1.44624E-04
103	102 TO 88□	4.98027E+02	1.99987E+01	1.00142E-03	7.22466E-01	-8.66018E-02	-6.35878E-01	-1.38775E-05
104	97 TO 103□	4.98022E+02	2.00136E+01	1.00156E-03	7.43580E-01	-5.94657E-01	-1.48778E-01	1.44481E-04
105	102 TO 89□	2.87384E+03	1.99987E+01	1.00142E-03	7.05221E-01	-8.66018E-02	-6.18633E-01	-1.39648E-05
106	98 TO 103□	2.87382E+03	2.00144E+01	1.00156E-03	7.52844E-01	-5.94657E-01	-1.58043E-01	1.44222E-04
107	102 TO 90□	3.52639E+03	1.99987E+01	1.00142E-03	7.38586E-01	-8.66017E-02	-6.52003E-01	-1.83552E-05
108	99 TO 103□	3.52636E+03	2.00114E+01	1.00156E-03	7.27922E-01	-5.94657E-01	-1.33112E-01	1.52688E-04
109	0 TO 100□	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
110	0 TO 102□	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE

ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-10-26

0 CPU TIME = 211.76

OJUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
1	1.30427E+00	1.30427E+00	2.24435E+01	0.00000E+00	2.00027E+01	0.00000E+00	2.00027E+01
2	1.30431E+00	1.30431E+00	2.24435E+01	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
3	1.30431E+00	1.30431E+00	2.24435E+01	0.00000E+00	2.00006E+01	0.00000E+00	2.00006E+01
4	1.30432E+00	1.30432E+00	2.24435E+01	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
5	1.30433E+00	1.30433E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
6	1.30433E+00	1.30433E+00	2.24435E+01	0.00000E+00	1.99998E+01	0.00000E+00	1.99998E+01
7	1.30434E+00	1.30434E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
8	1.30435E+00	1.30435E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
9	1.30435E+00	1.30435E+00	2.24435E+01	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
10	1.30436E+00	1.30436E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
11	1.33866E+00	1.33866E+00	1.84283E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
12	1.33870E+00	1.33870E+00	1.84283E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
13	1.33871E+00	1.33871E+00	1.84283E+02	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
14	1.33872E+00	1.33872E+00	1.84283E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
15	1.33872E+00	1.33872E+00	1.84283E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
16	1.33873E+00	1.33873E+00	1.84283E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
17	1.33873E+00	1.33873E+00	1.84283E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
18	1.33874E+00	1.33874E+00	1.84283E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
19	1.33875E+00	1.33875E+00	1.84283E+02	0.00000E+00	1.99956E+01	0.00000E+00	1.99956E+01
20	1.33876E+00	1.33876E+00	1.84283E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
21	1.33919E+00	1.33919E+00	5.06977E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
22	1.33923E+00	1.33923E+00	5.06977E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
23	1.33923E+00	1.33923E+00	5.06977E+02	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
24	1.33924E+00	1.33924E+00	5.06977E+02	0.00000E+00	1.99972E+01	0.00000E+00	1.99972E+01
25	1.33925E+00	1.33925E+00	5.06977E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
26	1.33925E+00	1.33925E+00	5.06977E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
27	1.33926E+00	1.33926E+00	5.06977E+02	0.00000E+00	1.99961E+01	0.00000E+00	1.99961E+01
28	1.33927E+00	1.33927E+00	5.06977E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
29	1.33927E+00	1.33927E+00	5.06977E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
30	1.33928E+00	1.33928E+00	5.06977E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
31	1.35331E+00	1.35331E+00	2.88764E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
32	1.35335E+00	1.35335E+00	2.88764E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
33	1.35335E+00	1.35335E+00	2.88764E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
34	1.35336E+00	1.35336E+00	2.88764E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
35	1.35337E+00	1.35337E+00	2.88764E+03	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
36	1.35337E+00	1.35337E+00	2.88764E+03	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
37	1.35338E+00	1.35338E+00	2.88764E+03	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
38	1.35339E+00	1.35339E+00	2.88764E+03	0.00000E+00	1.99954E+01	0.00000E+00	1.99954E+01
39	1.35340E+00	1.35340E+00	2.88764E+03	0.00000E+00	1.99951E+01	0.00000E+00	1.99951E+01
40	1.35340E+00	1.35340E+00	2.88764E+03	0.00000E+00	1.99948E+01	0.00000E+00	1.99948E+01
41	1.33061E+00	1.33061E+00	3.52610E+03	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
42	1.33065E+00	1.33065E+00	3.52610E+03	0.00000E+00	1.99986E+01	0.00000E+00	1.99986E+01
43	1.33065E+00	1.33065E+00	3.52610E+03	0.00000E+00	1.99984E+01	0.00000E+00	1.99984E+01
44	1.33066E+00	1.33066E+00	3.52610E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
45	1.33067E+00	1.33067E+00	3.52610E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
46	1.33067E+00	1.33067E+00	3.52610E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
47	1.33068E+00	1.33068E+00	3.52610E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
48	1.33069E+00	1.33069E+00	3.52610E+03	0.00000E+00	1.99967E+01	0.00000E+00	1.99967E+01
49	1.33070E+00	1.33070E+00	3.52609E+03	0.00000E+00	1.99966E+01	0.00000E+00	1.99966E+01
50	1.33070E+00	1.33070E+00	3.52609E+03	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
51	1.33876E+00	1.33876E+00	1.84297E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
52	1.33880E+00	1.33880E+00	1.84297E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
53	1.33881E+00	1.33881E+00	1.84297E+02	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
54	1.33881E+00	1.33881E+00	1.84297E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
55	1.33882E+00	1.33882E+00	1.84297E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
56	1.33883E+00	1.33883E+00	1.84297E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
57	1.33883E+00	1.33883E+00	1.84297E+02	0.00000E+00	1.99962E+01	0.00000E+00	1.99962E+01
58	1.33884E+00	1.33884E+00	1.84297E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
59	1.33885E+00	1.33885E+00	1.84297E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
60	1.33885E+00	1.33885E+00	1.84297E+02	0.00000E+00	1.99955E+01	0.00000E+00	1.99955E+01

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   61          1.37819E+00  1.37819E+00  4.98027E+02  0.00000E+00  2.00000E+01  0.00000E+00  2.00000E+01
   62          1.37823E+00  1.37823E+00  4.98027E+02  0.00000E+00  1.99979E+01  0.00000E+00  1.99979E+01
   63          1.37824E+00  1.37824E+00  4.98027E+02  0.00000E+00  1.99975E+01  0.00000E+00  1.99975E+01
   64          1.37824E+00  1.37824E+00  4.98027E+02  0.00000E+00  1.99969E+01  0.00000E+00  1.99969E+01
   65          1.37825E+00  1.37825E+00  4.98027E+02  0.00000E+00  1.99964E+01  0.00000E+00  1.99964E+01
   66          1.37826E+00  1.37826E+00  4.98027E+02  0.00000E+00  1.99959E+01  0.00000E+00  1.99959E+01
   67          1.37826E+00  1.37826E+00  4.98027E+02  0.00000E+00  1.99957E+01  0.00000E+00  1.99957E+01
   68          1.37827E+00  1.37827E+00  4.98026E+02  0.00000E+00  1.99953E+01  0.00000E+00  1.99953E+01
   69          1.37828E+00  1.37828E+00  4.98026E+02  0.00000E+00  1.99950E+01  0.00000E+00  1.99950E+01
   70          1.37828E+00  1.37828E+00  4.98026E+02  0.00000E+00  1.99946E+01  0.00000E+00  1.99946E+01
   71          1.34684E+00  1.34684E+00  2.87384E+03  0.00000E+00  2.00000E+01  0.00000E+00  2.00000E+01
   72          1.34688E+00  1.34688E+00  2.87384E+03  0.00000E+00  1.99979E+01  0.00000E+00  1.99979E+01
   73          1.34689E+00  1.34689E+00  2.87384E+03  0.00000E+00  1.99975E+01  0.00000E+00  1.99975E+01
   74          1.34690E+00  1.34690E+00  2.87384E+03  0.00000E+00  1.99969E+01  0.00000E+00  1.99969E+01
   75          1.34690E+00  1.34690E+00  2.87384E+03  0.00000E+00  1.99964E+01  0.00000E+00  1.99964E+01
   76          1.34691E+00  1.34691E+00  2.87384E+03  0.00000E+00  1.99959E+01  0.00000E+00  1.99959E+01
   77          1.34691E+00  1.34691E+00  2.87384E+03  0.00000E+00  1.99958E+01  0.00000E+00  1.99958E+01
   78          1.34692E+00  1.34692E+00  2.87384E+03  0.00000E+00  1.99954E+01  0.00000E+00  1.99954E+01
   79          1.34693E+00  1.34693E+00  2.87384E+03  0.00000E+00  1.99951E+01  0.00000E+00  1.99951E+01
   80          1.34694E+00  1.34694E+00  2.87384E+03  0.00000E+00  1.99948E+01  0.00000E+00  1.99948E+01
   81          1.33072E+00  1.33072E+00  3.52639E+03  0.00000E+00  2.00007E+01  0.00000E+00  2.00007E+01
   82          1.33076E+00  1.33076E+00  3.52639E+03  0.00000E+00  1.99985E+01  0.00000E+00  1.99985E+01
   83          1.33076E+00  1.33076E+00  3.52639E+03  0.00000E+00  1.99984E+01  0.00000E+00  1.99984E+01
   84          1.33077E+00  1.33077E+00  3.52638E+03  0.00000E+00  1.99979E+01  0.00000E+00  1.99979E+01
   85          1.33078E+00  1.33078E+00  3.52638E+03  0.00000E+00  1.99975E+01  0.00000E+00  1.99975E+01
   86          1.33078E+00  1.33078E+00  3.52638E+03  0.00000E+00  1.99970E+01  0.00000E+00  1.99970E+01
   87          1.33079E+00  1.33079E+00  3.52638E+03  0.00000E+00  1.99970E+01  0.00000E+00  1.99970E+01
   88          1.33080E+00  1.33080E+00  3.52638E+03  0.00000E+00  1.99968E+01  0.00000E+00  1.99968E+01
   89          1.33080E+00  1.33080E+00  3.52638E+03  0.00000E+00  1.99965E+01  0.00000E+00  1.99965E+01
   90          1.33081E+00  1.33081E+00  3.52638E+03  0.00000E+00  1.99962E+01  0.00000E+00  1.99962E+01
   91          3.24568E+00  3.24568E+00  2.24435E+01  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
   92          1.45641E+00  1.45641E+00  2.24433E+01  0.00000E+00  2.00336E+01  0.00000E+00  2.00336E+01
   93          3.33132E+00  3.33132E+00  1.84283E+02  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
   94          1.49480E+00  1.49480E+00  1.84281E+02  0.00000E+00  2.00271E+01  0.00000E+00  2.00271E+01
   95          3.33257E+00  3.33257E+00  5.06977E+02  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
   96          1.49539E+00  1.49539E+00  5.06973E+02  0.00000E+00  2.00274E+01  0.00000E+00  2.00274E+01
   97          3.36766E+00  3.36766E+00  2.88764E+03  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
   98          1.51117E+00  1.51117E+00  2.88761E+03  0.00000E+00  2.00263E+01  0.00000E+00  2.00263E+01
   99          3.31120E+00  3.31120E+00  3.52610E+03  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
  100          1.48581E+00  1.48581E+00  3.52607E+03  0.00000E+00  2.00235E+01  0.00000E+00  2.00235E+01
  101          3.33157E+00  3.33157E+00  1.84297E+02  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
  102          1.49491E+00  1.49491E+00  1.84295E+02  0.00000E+00  2.00271E+01  0.00000E+00  2.00271E+01
  103          3.42968E+00  3.42968E+00  4.98027E+02  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
  104          1.53895E+00  1.53895E+00  4.98022E+02  0.00000E+00  2.00257E+01  0.00000E+00  2.00257E+01
  105          3.35157E+00  3.35157E+00  2.87384E+03  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
  106          1.50395E+00  1.50395E+00  2.87382E+03  0.00000E+00  2.00265E+01  0.00000E+00  2.00265E+01
  107          3.31147E+00  3.31147E+00  3.52639E+03  0.00000E+00  2.00005E+01  0.00000E+00  2.00005E+01
  108          1.48593E+00  1.48593E+00  3.52636E+03  0.00000E+00  2.00235E+01  0.00000E+00  2.00235E+01
  109          0.00000E+00  0.00000E+00  7.10500E+03  0.00000E+00  2.00000E+01  0.00000E+00  2.00000E+01
  110          0.00000E+00  0.00000E+00  7.10500E+03  0.00000E+00  2.00000E+01  0.00000E+00  2.00000E+01
IPRTCT =   1

CHANNEL  RESULTS

        CHANNEL   CONNECTING          C O O L A N T            FUEL
         NUMBER     VOLUMES       TEMPERATURE    VOID FRAC    TEMPERATURE
                                        (C)          (-)          (C)

            1        1 TO  9     1.99099E+01   0.00000E+00   1.99155E+01
            2       10 TO 18     1.99058E+01   0.00000E+00   1.99100E+01
            3       19 TO 27     1.99057E+01   0.00000E+00   1.99099E+01
            4       28 TO 36     1.99051E+01   0.00000E+00   1.99090E+01
            5       37 TO 45     1.99071E+01   0.00000E+00   1.99117E+01
            6       46 TO 54     1.99058E+01   0.00000E+00   1.99101E+01
            7       55 TO 63     1.99052E+01   0.00000E+00   1.99092E+01
            8       64 TO 72     1.99051E+01   0.00000E+00   1.99091E+01
            9       73 TO 81     1.99072E+01   0.00000E+00   1.99117E+01
IM,JM,KM,KMIN,KMAX
23 13 4 1 15
IFT,E1,V1,X1
1 20.009995 0.00000000E+00 0.00000000E+00
FSP,PLP1(L),FP,FSG,FSUB,FD,FHL,FI,FAX,QCPR(L),CQQ,X1
AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
 0.1001E+01 0.2272E-05 0.7189E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00 0.6981E-06 0.0000E+00
 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1000E+01 0.3044E+03 0.2592E+01 0.8800E+00-0.2528E+00 0.1186E+03
IM,JM,KM,KMIN,KMAX
23 13 14 1 15
IFT,E1,V1,X1
2 15.949999 0.00000000E+00 0.00000000E+00
FSP,PLP1(L),FP,FSG,FSUB,FD,FHL,FI,FAX,QCPR(L),CQQ,X1
AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
 0.8388E+00 0.1494E-05 0.7252E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00 0.3124E-07 0.0000E+00
 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1000E+01 0.3970E+02 0.3122E+01 0.8800E+00-0.2528E+00 0.1186E+03
                          ********** SUMMARY  TABLE **********

                                MINIMUM CPR ,(I,J,K),L =    0.000, 28, 17, 15,  3

                                MAXIMUM LHGR,(I,J,K),L =    0.000, 25, 15,  3,  3

                                CPR (25,15, 3)         =   99.990

                                LHGR(28,17,15)         =    0.000

 IPRTCT =   1
OPLOT RECORD NUMBER =    26
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(8)総合反応度を使用したBDBE参考ケース(パス8)1点近似感度解析

```
 EUREKA-ATR/MOD1          ( 1)                    THERMAL REACTOR CORE KINETICS CODE
       ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR                                          91-11-23
0 CPU TIME =   62.32
 STANDARD TIME STEP NUMBER   250.  ACTUAL TIME STEP NUMBER   269.  TIME = 0.250000E+02 SEC.  LAST DT =  0.100000E+00 SEC.
0
 TOTAL SYSTEM    NORM POWR    POWR          ENERGY        TOT. REAC     DOP. REAC    WAT-T REAC    VOID REAC     EXP. REAC     INSTD REAC
 QUANTITIES                   (MW)          (MWS)         (¥)           (¥)          (¥)           (¥)           (¥)           (¥)
                 6.46849E+02  1.10687E-05   1.28340E-05   8.20444E-01   5.63877E-04  -1.65673E-04  0.00000E+00   0.00000E+00   8.20046E-01
0 VOLUME         AVG. PRES    TOT. MASS     AVG. ENTH     AVG. DENS     AVG. TEMP    AVG. QUAL     LIQ. MASS
  NUMBER         (KG/CM**2A)  (KG) H2O      (KC/KG)       (KG/M3)       (C)                        (KG)
       1         3.19550E+00  1.17893E+00   2.00005E+01   9.98518E+02   1.99019E+01  0.00000E+00   1.17893E+00
       2         3.12598E+00  2.35885E+00   2.00004E+01   9.98515E+02   1.99033E+01  0.00000E+00   2.35885E+00
       3         3.01275E+00  2.35884E+00   2.00000E+01   9.98509E+02   1.99054E+01  0.00000E+00   2.35884E+00
       4         2.90823E+00  2.35883E+00   1.99999E+01   9.98504E+02   1.99076E+01  0.00000E+00   2.35883E+00
       5         2.81219E+00  1.17891E+00   1.99996E+01   9.98500E+02   1.99094E+01  0.00000E+00   1.17891E+00
       6         2.72485E+00  2.35881E+00   1.99999E+01   9.98495E+02   1.99117E+01  0.00000E+00   2.35881E+00
       7         2.60255E+00  2.35879E+00   1.99999E+01   9.98489E+02   1.99143E+01  0.00000E+00   2.35879E+00
       8         2.48013E+00  2.35878E+00   2.00000E+01   9.98483E+02   1.99172E+01  0.00000E+00   2.35878E+00
       9         2.40144E+00  1.17889E+00   1.99999E+01   9.98480E+02   1.99188E+01  0.00000E+00   1.17889E+00
      10         3.23125E+00  9.43346E+00   1.99979E+01   9.98520E+02   1.98985E+01  0.00000E+00   9.43346E+00
      11         3.14931E+00  1.88679E+01   1.99977E+01   9.98516E+02   1.99000E+01  0.00000E+00   1.88679E+01
      12         3.04007E+00  1.88678E+01   1.99970E+01   9.98511E+02   1.99018E+01  0.00000E+00   1.88678E+01
      13         2.93068E+00  1.88677E+01   1.99966E+01   9.98506E+02   1.99038E+01  0.00000E+00   1.88677E+01
      14         2.82860E+00  9.43328E+00   1.99961E+01   9.98501E+02   1.99055E+01  0.00000E+00   9.43328E+00
      15         2.74648E+00  1.88675E+01   1.99960E+01   9.98497E+02   1.99073E+01  0.00000E+00   1.88675E+01
      16         2.62692E+00  1.88674E+01   1.99957E+01   9.98491E+02   1.99096E+01  0.00000E+00   1.88674E+01
      17         2.49725E+00  1.88673E+01   1.99954E+01   9.98485E+02   1.99122E+01  0.00000E+00   1.88673E+01
      18         2.40493E+00  9.43309E+00   1.99951E+01   9.98481E+02   1.99139E+01  0.00000E+00   9.43309E+00
      19         3.23423E+00  2.59435E+01   1.99979E+01   9.98520E+02   1.98984E+01  0.00000E+00   2.59435E+01
      20         3.15226E+00  5.18859E+01   1.99976E+01   9.98517E+02   1.98999E+01  0.00000E+00   5.18859E+01
      21         3.04293E+00  5.18856E+01   1.99970E+01   9.98511E+02   1.99017E+01  0.00000E+00   5.18856E+01
      22         2.93352E+00  5.18853E+01   1.99966E+01   9.98506E+02   1.99037E+01  0.00000E+00   5.18853E+01
      23         2.83140E+00  2.59430E+01   1.99961E+01   9.98501E+02   1.99054E+01  0.00000E+00   2.59430E+01
      24         2.74924E+00  5.18849E+01   1.99959E+01   9.98497E+02   1.99071E+01  0.00000E+00   5.18849E+01
      25         2.62961E+00  5.18846E+01   1.99957E+01   9.98492E+02   1.99095E+01  0.00000E+00   5.18846E+01
      26         2.49985E+00  5.18842E+01   1.99955E+01   9.98485E+02   1.99122E+01  0.00000E+00   5.18842E+01
      27         2.40749E+00  2.59425E+01   1.99951E+01   9.98481E+02   1.99138E+01  0.00000E+00   2.59425E+01
      28         3.25230E+00  1.46225E+02   1.99975E+01   9.98521E+02   1.98976E+01  0.00000E+00   1.46225E+02
      29         3.16979E+00  2.92449E+02   1.99973E+01   9.98517E+02   1.98992E+01  0.00000E+00   2.92449E+02
      30         3.05978E+00  2.92447E+02   1.99967E+01   9.98512E+02   1.99010E+01  0.00000E+00   2.92447E+02
      31         2.94969E+00  2.92445E+02   1.99962E+01   9.98507E+02   1.99030E+01  0.00000E+00   2.92445E+02
      32         2.84696E+00  1.46222E+02   1.99957E+01   9.98502E+02   1.99047E+01  0.00000E+00   1.46222E+02
      33         2.75422E+00  2.92443E+02   1.99955E+01   9.98498E+02   1.99066E+01  0.00000E+00   2.92443E+02
      34         2.63381E+00  2.92441E+02   1.99952E+01   9.98492E+02   1.99090E+01  0.00000E+00   2.92441E+02
      35         2.50330E+00  2.92439E+02   1.99949E+01   9.98486E+02   1.99115E+01  0.00000E+00   2.92439E+02
      36         2.42041E+00  1.46219E+02   1.99946E+01   9.98482E+02   1.99131E+01  0.00000E+00   1.46219E+02
      37         3.20316E+00  1.81601E+02   1.99984E+01   9.98519E+02   1.98995E+01  0.00000E+00   1.81601E+02
      38         3.12157E+00  3.63201E+02   1.99981E+01   9.98515E+02   1.99011E+01  0.00000E+00   3.63201E+02
      39         3.01278E+00  3.63199E+02   1.99976E+01   9.98510E+02   1.99030E+01  0.00000E+00   3.63199E+02
      40         2.90388E+00  3.63198E+02   1.99973E+01   9.98505E+02   1.99050E+01  0.00000E+00   3.63198E+02
      41         2.80228E+00  1.81598E+02   1.99967E+01   9.98500E+02   1.99067E+01  0.00000E+00   1.81598E+02
      42         2.72053E+00  3.63194E+02   1.99967E+01   9.98496E+02   1.99085E+01  0.00000E+00   3.63194E+02
      43         2.59155E+00  3.63192E+02   1.99964E+01   9.98490E+02   1.99111E+01  0.00000E+00   3.63192E+02
      44         2.46247E+00  3.63190E+02   1.99964E+01   9.98483E+02   1.99139E+01  0.00000E+00   3.63190E+02
      45         2.38051E+00  1.81594E+02   1.99961E+01   9.98479E+02   1.99155E+01  0.00000E+00   1.81594E+02
      46         3.23136E+00  9.43346E+00   1.99979E+01   9.98520E+02   1.98985E+01  0.00000E+00   9.43346E+00
      47         3.14942E+00  1.88679E+01   1.99976E+01   9.98516E+02   1.99000E+01  0.00000E+00   1.88679E+01
      48         3.04014E+00  1.88678E+01   1.99971E+01   9.98511E+02   1.99019E+01  0.00000E+00   1.88678E+01
      49         2.93079E+00  1.88677E+01   1.99965E+01   9.98506E+02   1.99037E+01  0.00000E+00   1.88677E+01
      50         2.82872E+00  9.43328E+00   1.99961E+01   9.98501E+02   1.99055E+01  0.00000E+00   9.43328E+00
      51         2.74658E+00  1.88675E+01   1.99960E+01   9.98497E+02   1.99073E+01  0.00000E+00   1.88675E+01
      52         2.62698E+00  1.88674E+01   1.99957E+01   9.98491E+02   1.99096E+01  0.00000E+00   1.88674E+01
      53         2.49729E+00  1.88673E+01   1.99955E+01   9.98485E+02   1.99123E+01  0.00000E+00   1.88673E+01
      54         2.40496E+00  9.43309E+00   1.99953E+01   9.98481E+02   1.99140E+01  0.00000E+00   9.43309E+00
      55         3.23827E+00  2.47636E+01   1.99976E+01   9.98521E+02   1.98980E+01  0.00000E+00   2.47636E+01
      56         3.15594E+00  4.95270E+01   1.99973E+01   9.98517E+02   1.98995E+01  0.00000E+00   4.95270E+01
      57         3.04617E+00  4.95267E+01   1.99967E+01   9.98512E+02   1.99013E+01  0.00000E+00   4.95267E+01
      58         2.93628E+00  4.95265E+01   1.99962E+01   9.98506E+02   1.99032E+01  0.00000E+00   4.95265E+01
      59         2.83449E+00  2.47631E+01   1.99957E+01   9.98501E+02   1.99050E+01  0.00000E+00   2.47631E+01
      60         2.75194E+00  4.95261E+01   1.99955E+01   9.98498E+02   1.99066E+01  0.00000E+00   4.95261E+01
      61         2.63217E+00  4.95258E+01   1.99951E+01   9.98492E+02   1.99089E+01  0.00000E+00   4.95258E+01
      62         2.50266E+00  4.95255E+01   1.99948E+01   9.98486E+02   1.99114E+01  0.00000E+00   4.95255E+01
      63         2.41031E+00  2.47626E+01   1.99944E+01   9.98481E+02   1.99130E+01  0.00000E+00   2.47626E+01
      64         3.25226E+00  1.46225E+02   1.99976E+01   9.98521E+02   1.98977E+01  0.00000E+00   1.46225E+02
      65         3.16981E+00  2.92449E+02   1.99973E+01   9.98517E+02   1.98992E+01  0.00000E+00   2.92449E+02
      66         3.05987E+00  2.92447E+02   1.99967E+01   9.98512E+02   1.99010E+01  0.00000E+00   2.92447E+02
      67         2.94981E+00  2.92445E+02   1.99962E+01   9.98507E+02   1.99030E+01  0.00000E+00   2.92445E+02
      68         2.84695E+00  1.46222E+02   1.99957E+01   9.98502E+02   1.99047E+01  0.00000E+00   1.46222E+02
      69         2.75410E+00  2.92443E+02   1.99956E+01   9.98498E+02   1.99067E+01  0.00000E+00   2.92443E+02
      70         2.63373E+00  2.92441E+02   1.99952E+01   9.98492E+02   1.99089E+01  0.00000E+00   2.92441E+02
      71         2.50308E+00  2.92439E+02   1.99949E+01   9.98486E+02   1.99115E+01  0.00000E+00   2.92439E+02
      72         2.42024E+00  1.46219E+02   1.99945E+01   9.98482E+02   1.99130E+01  0.00000E+00   1.46219E+02
      73         3.20325E+00  1.81601E+02   1.99983E+01   9.98519E+02   1.98995E+01  0.00000E+00   1.81601E+02
      74         3.12163E+00  3.63201E+02   1.99982E+01   9.98515E+02   1.99011E+01  0.00000E+00   3.63201E+02
      75         3.01284E+00  3.63199E+02   1.99977E+01   9.98510E+02   1.99030E+01  0.00000E+00   3.63199E+02
      76         2.90394E+00  3.63198E+02   1.99973E+01   9.98505E+02   1.99051E+01  0.00000E+00   3.63198E+02
      77         2.80233E+00  1.81598E+02   1.99967E+01   9.98500E+02   1.99068E+01  0.00000E+00   1.81598E+02
      78         2.72058E+00  3.63194E+02   1.99967E+01   9.98496E+02   1.99086E+01  0.00000E+00   3.63194E+02
      79         2.59155E+00  3.63192E+02   1.99966E+01   9.98490E+02   1.99112E+01  0.00000E+00   3.63192E+02
      80         2.46250E+00  3.63190E+02   1.99963E+01   9.98483E+02   1.99139E+01  0.00000E+00   3.63190E+02
      81         2.38054E+00  1.81594E+02   1.99960E+01   9.98479E+02   1.99153E+01  0.00000E+00   1.81594E+02
      82         3.85907E+00  3.34274E+01   2.00014E+01   9.98550E+02   1.98881E+01  0.00000E+00   3.34274E+01
      83         3.86333E+00  2.01174E+02   1.99989E+01   9.98551E+02   1.98855E+01  0.00000E+00   2.01174E+02
      84         3.86474E+00  5.49014E+02   1.99989E+01   9.98551E+02   1.98854E+01  0.00000E+00   5.49014E+02
      85         3.87846E+00  2.97059E+03   1.99986E+01   9.98552E+02   1.98849E+01  0.00000E+00   2.97059E+03
      86         3.84973E+00  4.15374E+03   1.99994E+01   9.98550E+02   1.98863E+01  0.00000E+00   4.15374E+03
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87	3.86351E+00	2.01174E+02	1.99989E+01	9.98551E+02	1.98855E+01	0.00000E+00	2.01174E+02	
88	3.86977E+00	5.15582E+02	1.99986E+01	9.98551E+02	1.98850E+01	0.00000E+00	5.15582E+02	
89	3.87804E+00	2.97059E+03	1.99986E+01	9.98552E+02	1.98849E+01	0.00000E+00	2.97059E+03	
90	3.83996E+00	4.15374E+03	1.99994E+01	9.98550E+02	1.98865E+01	0.00000E+00	4.15374E+03	
91	1.72829E+00	9.84715E+01	2.00333E+01	9.98441E+02	1.99671E+01	0.00000E+00	9.84715E+01	
92	1.72883E+00	7.70978E+02	2.00268E+01	9.98442E+02	1.99606E+01	0.00000E+00	7.70978E+02	
93	1.73010E+00	2.15602E+03	2.00272E+01	9.98442E+02	1.99609E+01	0.00000E+00	2.15602E+03	
94	1.73142E+00	1.20937E+04	2.00260E+01	9.98442E+02	1.99597E+01	0.00000E+00	1.20937E+04	
95	1.71671E+00	1.24350E+04	2.00232E+01	9.98442E+02	1.99572E+01	0.00000E+00	1.24350E+04	
96	1.72885E+00	7.70998E+02	2.00268E+01	9.98442E+02	1.99606E+01	0.00000E+00	7.70998E+02	
97	1.73161E+00	2.05801E+03	2.00254E+01	9.98442E+02	1.99591E+01	0.00000E+00	2.05801E+03	
98	1.74139E+00	1.20937E+04	2.00262E+01	9.98443E+02	1.99597E+01	0.00000E+00	1.20937E+04	
99	1.71672E+00	1.24350E+04	2.00232E+01	9.98442E+02	1.99572E+01	0.00000E+00	1.24350E+04	
100	4.50517E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98712E+01	0.00000E+00	8.86301E+03	
101	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05	
102	4.50545E+00	8.86301E+03	1.99987E+01	9.98582E+02	1.98712E+01	0.00000E+00	8.86301E+03	
103	1.00000E+00	1.86940E+05	2.00501E+01	9.98402E+02	2.00000E+01	0.00000E+00	1.86940E+05	

0 HEAT SLAB NUMBER	VOL NUM	H.T. MODE	SURF FLUX (KC/HR/M2)	CRIT FLUX (KC/HR/M2)	H.T. COEF (KC/H/M2/C)	SURF TEMP (C)	LOCAL ENGY (CAL/G-UO2)	VOID FRAC	LOCAL MASS FLUX	LOCAL FLUID TEMP.
1	1	1	6.07437E+00	5.86344E+06	1.05395E+04	1.99026E+01	1.07897E+00	0.00000E+00	4.68643E+06	1.99019E+01
2	2	1	6.30877E+00	5.83946E+06	1.05131E+04	1.99041E+01	1.07907E+00	0.00000E+00	4.68643E+06	1.99033E+01
3	3	1	8.87266E-01	5.82862E+06	1.04696E+04	1.99057E+01	1.07921E+00	0.00000E+00	4.68643E+06	1.99054E+01
4	4	1	2.45922E+00	6.76024E+06	1.04289E+04	1.99081E+01	1.07936E+00	0.00000E+00	4.68643E+06	1.99076E+01
5	5	1	2.00832E+00	6.95275E+06	1.03909E+04	1.99098E+01	1.07947E+00	0.00000E+00	4.68643E+06	1.99094E+01
6	6	1	1.24321E+01	6.94269E+06	1.03558E+04	1.99130E+01	1.07961E+00	0.00000E+00	4.68643E+06	1.99117E+01
7	7	1	4.83214E+00	6.92857E+06	1.03058E+04	1.99151E+01	1.07979E+00	0.00000E+00	4.68643E+06	1.99143E+01
8	8	1	4.83661E+00	6.36700E+06	1.02546E+04	1.99180E+01	1.07998E+00	0.00000E+00	4.68643E+06	1.99172E+01
9	9	1	1.19826E+01	6.35860E+06	1.02212E+04	1.99202E+01	1.08008E+00	0.00000E+00	4.68643E+06	1.99188E+01
10	10	1	0.00000E+00	5.86684E+06	0.00000E+00	1.98986E+01	1.07872E+00	0.00000E+00	4.81002E+06	1.98985E+01
11	11	1	2.71666E+00	5.84168E+06	1.07434E+04	1.99004E+01	1.07882E+00	0.00000E+00	4.81002E+06	1.99000E+01
12	12	1	-4.85114E+00	5.83122E+06	1.07007E+04	1.99016E+01	1.07894E+00	0.00000E+00	4.81002E+06	1.99018E+01
13	13	1	2.64031E+00	6.76273E+06	1.06573E+04	1.99042E+01	1.07907E+00	0.00000E+00	4.81002E+06	1.99038E+01
14	14	1	3.88085E+00	6.95463E+06	1.06162E+04	1.99060E+01	1.07918E+00	0.00000E+00	4.81002E+06	1.99055E+01
15	15	1	7.26630E+00	6.94517E+06	1.05826E+04	1.99081E+01	1.07930E+00	0.00000E+00	4.81002E+06	1.99073E+01
16	16	1	2.68146E+00	6.93137E+06	1.05329E+04	1.99100E+01	1.07945E+00	0.00000E+00	4.81002E+06	1.99096E+01
17	17	1	1.92466E+00	6.36882E+06	1.04777E+04	1.99126E+01	1.07962E+00	0.00000E+00	4.81002E+06	1.99122E+01
18	18	1	8.01612E+00	6.35897E+06	1.04378E+04	1.99149E+01	1.07974E+00	0.00000E+00	4.81002E+06	1.99139E+01
19	19	1	0.00000E+00	5.86713E+06	0.00000E+00	1.98985E+01	1.07871E+00	0.00000E+00	4.81191E+06	1.98984E+01
20	20	1	2.35619E+00	5.84196E+06	1.07479E+04	1.99002E+01	1.07882E+00	0.00000E+00	4.81191E+06	1.98999E+01
21	21	1	2.28425E+00	5.83150E+06	1.07052E+04	1.99021E+01	1.07894E+00	0.00000E+00	4.81191E+06	1.99017E+01
22	22	1	6.38164E+00	6.76305E+06	1.06618E+04	1.99045E+01	1.07907E+00	0.00000E+00	4.81191E+06	1.99037E+01
23	23	1	3.80848E+00	6.95495E+06	1.06207E+04	1.99060E+01	1.07917E+00	0.00000E+00	4.81191E+06	1.99054E+01
24	24	1	7.88506E-01	6.94549E+06	1.05871E+04	1.99073E+01	1.07929E+00	0.00000E+00	4.81191E+06	1.99071E+01
25	25	1	5.81968E+00	6.93169E+06	1.05373E+04	1.99102E+01	1.07945E+00	0.00000E+00	4.81191E+06	1.99095E+01
26	26	1	9.39320E+00	6.36909E+06	1.04821E+04	1.99133E+01	1.07962E+00	0.00000E+00	4.81191E+06	1.99122E+01
27	27	1	6.40297E+00	6.35924E+06	1.04422E+04	1.99146E+01	1.07973E+00	0.00000E+00	4.81190E+06	1.99138E+01
28	28	1	-7.34824E+00	5.86886E+06	1.08774E+04	1.98972E+01	1.07867E+00	0.00000E+00	4.86265E+06	1.98976E+01
29	29	1	0.00000E+00	5.84363E+06	0.00000E+00	1.98993E+01	1.07877E+00	0.00000E+00	4.86265E+06	1.98992E+01
30	30	1	4.93284E-01	5.83311E+06	1.08020E+04	1.99012E+01	1.07889E+00	0.00000E+00	4.86265E+06	1.99010E+01
31	31	1	4.50865E+00	6.76485E+06	1.07582E+04	1.99035E+01	1.07901E+00	0.00000E+00	4.86264E+06	1.99030E+01
32	32	1	3.01351E+00	6.95674E+06	1.07165E+04	1.99051E+01	1.07912E+00	0.00000E+00	4.86264E+06	1.99047E+01
33	33	1	-3.26546E-01	6.94606E+06	1.06784E+04	1.99067E+01	1.07925E+00	0.00000E+00	4.86264E+06	1.99066E+01
34	34	1	8.97282E+00	6.93217E+06	1.06279E+04	1.99100E+01	1.07941E+00	0.00000E+00	4.86264E+06	1.99090E+01
35	35	1	3.27143E+00	6.36946E+06	1.05719E+04	1.99121E+01	1.07958E+00	0.00000E+00	4.86264E+06	1.99115E+01
36	36	1	1.11886E+01	6.36061E+06	1.05359E+04	1.99143E+01	1.07967E+00	0.00000E+00	4.86264E+06	1.99131E+01
37	37	1	0.00000E+00	5.86415E+06	0.00000E+00	1.98997E+01	1.07879E+00	0.00000E+00	4.78108E+06	1.98995E+01
38	38	1	2.17561E+00	5.83902E+06	1.06809E+04	1.99015E+01	1.07890E+00	0.00000E+00	4.78107E+06	1.99011E+01
39	39	1	-1.12112E+00	5.82861E+06	1.06384E+04	1.99031E+01	1.07903E+00	0.00000E+00	4.78107E+06	1.99030E+01
40	40	1	4.77233E+00	6.75974E+06	1.05953E+04	1.99056E+01	1.07915E+00	0.00000E+00	4.78107E+06	1.99050E+01
41	41	1	-3.44874E-01	6.95160E+06	1.05544E+04	1.99068E+01	1.07926E+00	0.00000E+00	4.78107E+06	1.99067E+01
42	42	1	3.32217E+00	6.94218E+06	1.05210E+04	1.99090E+01	1.07939E+00	0.00000E+00	4.78107E+06	1.99085E+01
43	43	1	2.06383E+00	6.92728E+06	1.04673E+04	1.99116E+01	1.07956E+00	0.00000E+00	4.78107E+06	1.99111E+01
44	44	1	6.46743E+00	6.36511E+06	1.04124E+04	1.99148E+01	1.07974E+00	0.00000E+00	4.78107E+06	1.99139E+01
45	45	1	8.70556E+00	6.35635E+06	1.03769E+04	1.99165E+01	1.07984E+00	0.00000E+00	4.78107E+06	1.99155E+01
46	46	1	0.00000E+00	5.86686E+06	0.00000E+00	1.98986E+01	1.07873E+00	0.00000E+00	4.81038E+06	1.98985E+01
47	47	1	2.04075E+00	5.84170E+06	1.07441E+04	1.99003E+01	1.07882E+00	0.00000E+00	4.81038E+06	1.99000E+01
48	48	1	1.67996E+00	5.83124E+06	1.07013E+04	1.99022E+01	1.07895E+00	0.00000E+00	4.81038E+06	1.99019E+01
49	49	1	-3.14973E+00	6.76276E+06	1.06580E+04	1.99036E+01	1.07907E+00	0.00000E+00	4.81038E+06	1.99037E+01
50	50	1	-8.82506E-01	6.95465E+06	1.06169E+04	1.99057E+01	1.07918E+00	0.00000E+00	4.81038E+06	1.99055E+01
51	51	1	-2.77982E-01	6.94519E+06	1.05833E+04	1.99074E+01	1.07929E+00	0.00000E+00	4.81038E+06	1.99073E+01
52	52	1	1.66008E+00	6.93139E+06	1.05335E+04	1.99099E+01	1.07945E+00	0.00000E+00	4.81038E+06	1.99096E+01
53	53	1	6.67693E+00	6.36883E+06	1.04784E+04	1.99131E+01	1.07963E+00	0.00000E+00	4.81038E+06	1.99123E+01
54	54	1	1.26793E+01	6.35897E+06	1.04384E+04	1.99154E+01	1.07974E+00	0.00000E+00	4.81038E+06	1.99140E+01
55	55	1	0.00000E+00	5.86752E+06	0.00000E+00	1.98982E+01	1.07869E+00	0.00000E+00	4.95205E+06	1.98980E+01
56	56	1	0.00000E+00	5.84232E+06	0.00000E+00	1.98996E+01	1.07879E+00	0.00000E+00	4.95205E+06	1.98995E+01
57	57	1	-3.92047E+00	5.83182E+06	1.09552E+04	1.99011E+01	1.07890E+00	0.00000E+00	4.95205E+06	1.99013E+01
58	58	1	-3.71631E-02	6.76337E+06	1.09106E+04	1.99034E+01	1.07903E+00	0.00000E+00	4.95205E+06	1.99032E+01
59	59	1	1.98175E+00	6.95531E+06	1.08687E+04	1.99054E+01	1.07913E+00	0.00000E+00	4.95205E+06	1.99050E+01
60	60	1	4.84717E+00	6.94581E+06	1.08342E+04	1.99072E+01	1.07925E+00	0.00000E+00	4.95205E+06	1.99066E+01
61	61	1	8.39307E+00	6.93199E+06	1.07832E+04	1.99098E+01	1.07940E+00	0.00000E+00	4.95205E+06	1.99089E+01
62	62	1	6.49482E+00	6.36941E+06	1.07269E+04	1.99122E+01	1.07957E+00	0.00000E+00	4.95205E+06	1.99114E+01
63	63	1	2.91992E+00	6.35954E+06	1.06861E+04	1.99136E+01	1.07967E+00	0.00000E+00	4.95205E+06	1.99130E+01
64	64	1	0.00000E+00	5.86886E+06	0.00000E+00	1.98979E+01	1.07867E+00	0.00000E+00	4.83942E+06	1.98977E+01
65	65	1	0.00000E+00	5.84364E+06	0.00000E+00	1.98994E+01	1.07877E+00	0.00000E+00	4.83942E+06	1.98992E+01
66	66	1	-6.28589E+00	5.83313E+06	1.07608E+04	1.99007E+01	1.07889E+00	0.00000E+00	4.83942E+06	1.99010E+01
67	67	1	-2.96158E+00	6.76487E+06	1.07171E+04	1.99029E+01	1.07902E+00	0.00000E+00	4.83942E+06	1.99030E+01
68	68	1	-4.96868E+00	6.95675E+06	1.06756E+04	1.99045E+01	1.07912E+00	0.00000E+00	4.83941E+06	1.99047E+01
69	69	1	5.67357E+00	6.94606E+06	1.06375E+04	1.99074E+01	1.07925E+00	0.00000E+00	4.83941E+06	1.99067E+01

70	70	1	-1.74760E+00	6.93217E+06	1.05872E+04	1.99090E+01	1.07940E+00	0.00000E+00	4.83941E+06	1.99089E+01
71	71	1	-1.51775E+00	6.36945E+06	1.05314E+04	1.99117E+01	1.07958E+00	0.00000E+00	4.83941E+06	1.99115E+01
72	72	1	-8.82777E-02	6.36060E+06	1.04955E+04	1.99132E+01	1.07967E+00	0.00000E+00	4.83941E+06	1.99130E+01
73	73	1	-5.69291E+00	5.86418E+06	1.07131E+04	1.98992E+01	1.07879E+00	0.00000E+00	4.78147E+06	1.98995E+01
74	74	1	3.66787E+00	5.83904E+06	1.06816E+04	1.99016E+01	1.07890E+00	0.00000E+00	4.78146E+06	1.99011E+01
75	75	1	3.76989E-01	5.82863E+06	1.06392E+04	1.99032E+01	1.07903E+00	0.00000E+00	4.78146E+06	1.99030E+01
76	76	1	4.03276E+00	6.75976E+06	1.05960E+04	1.99056E+01	1.07916E+00	0.00000E+00	4.78146E+06	1.99051E+01
77	77	1	1.57054E-01	6.95162E+06	1.05551E+04	1.99069E+01	1.07926E+00	0.00000E+00	4.78146E+06	1.99068E+01
78	78	1	3.11065E+00	6.94219E+06	1.05217E+04	1.99091E+01	1.07939E+00	0.00000E+00	4.78146E+06	1.99086E+01
79	79	1	9.99062E+00	6.92729E+06	1.04680E+04	1.99123E+01	1.07956E+00	0.00000E+00	4.78146E+06	1.99112E+01
80	80	1	4.25534E+00	6.36512E+06	1.04131E+04	1.99145E+01	1.07974E+00	0.00000E+00	4.78146E+06	1.99139E+01
81	81	1	4.79013E+00	6.35637E+06	1.03776E+04	1.99160E+01	1.07983E+00	0.00000E+00	4.78146E+06	1.99153E+01

0 HEAT SLAB NUMBER	VOL NUM	GAP CONDUCTANCE (KCAL/M2/HR/C)	GAP DISTANCE (M)	CENT TEMP (C)	AVG. TEMP (C)	FUEL POWER (MW)
1	1	3.20000E+02	0.00000E+00	1.99079E+01	1.99058E+01	6.03257E-10
2	2	3.20000E+02	0.00000E+00	1.99100E+01	1.99076E+01	2.77596E-09
3	3	3.20000E+02	0.00000E+00	1.99129E+01	1.99101E+01	3.44075E-09
4	4	3.20000E+02	0.00000E+00	1.99158E+01	1.99129E+01	3.73867E-09
5	5	3.20000E+02	0.00000E+00	1.99179E+01	1.99149E+01	1.89619E-09
6	6	3.20000E+02	0.00000E+00	1.99208E+01	1.99175E+01	4.04605E-09
7	7	3.20000E+02	0.00000E+00	1.99244E+01	1.99208E+01	4.26439E-09
8	8	3.20000E+02	0.00000E+00	1.99280E+01	1.99242E+01	4.33830E-09
9	9	3.20000E+02	0.00000E+00	1.99301E+01	1.99260E+01	1.54925E-09
10	10	1.90000E+03	0.00000E+00	1.99027E+01	1.99012E+01	2.38635E-09
11	11	1.90000E+03	0.00000E+00	1.99047E+01	1.99031E+01	1.02644E-08
12	12	1.90000E+03	0.00000E+00	1.99071E+01	1.99052E+01	1.26752E-08
13	13	1.90000E+03	0.00000E+00	1.99099E+01	1.99076E+01	1.38083E-08
14	14	1.90000E+03	0.00000E+00	1.99119E+01	1.99096E+01	7.06846E-09
15	15	1.90000E+03	0.00000E+00	1.99144E+01	1.99119E+01	1.50385E-08
16	16	1.90000E+03	0.00000E+00	1.99174E+01	1.99144E+01	1.59280E-08
17	17	1.90000E+03	0.00000E+00	1.99209E+01	1.99177E+01	1.65041E-08
18	18	1.90000E+03	0.00000E+00	1.99231E+01	1.99197E+01	6.39799E-09
19	19	1.90000E+03	0.00000E+00	1.99025E+01	1.99011E+01	7.74500E-09
20	20	1.90000E+03	0.00000E+00	1.99046E+01	1.99029E+01	3.31281E-08
21	21	1.90000E+03	0.00000E+00	1.99070E+01	1.99051E+01	4.07299E-08
22	22	1.90000E+03	0.00000E+00	1.99096E+01	1.99075E+01	4.45621E-08
23	23	1.90000E+03	0.00000E+00	1.99117E+01	1.99094E+01	2.27078E-08
24	24	1.90000E+03	0.00000E+00	1.99141E+01	1.99115E+01	4.84379E-08
25	25	1.90000E+03	0.00000E+00	1.99173E+01	1.99145E+01	5.12858E-08
26	26	1.90000E+03	0.00000E+00	1.99208E+01	1.99176E+01	5.29457E-08
27	27	1.90000E+03	0.00000E+00	1.99229E+01	1.99196E+01	2.02879E-08
28	28	1.90000E+03	0.00000E+00	1.99017E+01	1.99003E+01	4.96633E-08
29	29	1.90000E+03	0.00000E+00	1.99037E+01	1.99021E+01	2.14066E-07
30	30	1.90000E+03	0.00000E+00	1.99060E+01	1.99042E+01	2.63694E-07
31	31	1.90000E+03	0.00000E+00	1.99085E+01	1.99065E+01	2.87613E-07
32	32	1.90000E+03	0.00000E+00	1.99107E+01	1.99085E+01	1.46225E-07
33	33	1.90000E+03	0.00000E+00	1.99133E+01	1.99108E+01	3.11021E-07
34	34	1.90000E+03	0.00000E+00	1.99164E+01	1.99137E+01	3.29027E-07
35	35	1.90000E+03	0.00000E+00	1.99199E+01	1.99168E+01	3.39876E-07
36	36	1.90000E+03	0.00000E+00	1.99217E+01	1.99185E+01	1.29445E-07
37	37	1.90000E+03	0.00000E+00	1.99042E+01	1.99026E+01	8.89334E-08
38	38	1.90000E+03	0.00000E+00	1.99063E+01	1.99045E+01	3.68321E-07
39	39	1.90000E+03	0.00000E+00	1.99089E+01	1.99068E+01	4.29273E-07
40	40	1.90000E+03	0.00000E+00	1.99115E+01	1.99091E+01	4.39797E-07
41	41	1.90000E+03	0.00000E+00	1.99136E+01	1.99110E+01	2.09403E-07
42	42	1.90000E+03	0.00000E+00	1.99161E+01	1.99134E+01	4.19184E-07
43	43	1.90000E+03	0.00000E+00	1.99196E+01	1.99165E+01	4.24654E-07
44	44	1.90000E+03	0.00000E+00	1.99231E+01	1.99198E+01	4.35757E-07
45	45	1.90000E+03	0.00000E+00	1.99251E+01	1.99216E+01	1.67959E-07
46	46	1.90000E+03	0.00000E+00	1.99028E+01	1.99013E+01	2.73187E-09
47	47	1.90000E+03	0.00000E+00	1.99048E+01	1.99031E+01	1.17383E-08
48	48	1.90000E+03	0.00000E+00	1.99072E+01	1.99053E+01	1.44445E-08
49	49	1.90000E+03	0.00000E+00	1.99098E+01	1.99076E+01	1.57345E-08
50	50	1.90000E+03	0.00000E+00	1.99119E+01	1.99096E+01	8.00176E-09
51	51	1.90000E+03	0.00000E+00	1.99143E+01	1.99117E+01	1.71224E-08
52	52	1.90000E+03	0.00000E+00	1.99174E+01	1.99146E+01	1.81064E-08
53	53	1.90000E+03	0.00000E+00	1.99210E+01	1.99178E+01	1.85994E-08
54	54	1.90000E+03	0.00000E+00	1.99232E+01	1.99198E+01	7.00804E-09
55	55	1.90000E+03	0.00000E+00	1.99020E+01	1.99006E+01	8.19586E-09
56	56	1.90000E+03	0.00000E+00	1.99040E+01	1.99024E+01	3.50734E-08
57	57	1.90000E+03	0.00000E+00	1.99063E+01	1.99046E+01	4.30170E-08
58	58	1.90000E+03	0.00000E+00	1.99089E+01	1.99069E+01	4.68261E-08
59	59	1.90000E+03	0.00000E+00	1.99109E+01	1.99087E+01	2.37826E-08
60	60	1.90000E+03	0.00000E+00	1.99132E+01	1.99108E+01	5.07139E-08
61	61	1.90000E+03	0.00000E+00	1.99163E+01	1.99135E+01	5.35957E-08
62	62	1.90000E+03	0.00000E+00	1.99197E+01	1.99167E+01	5.52551E-08
63	63	1.90000E+03	0.00000E+00	1.99217E+01	1.99186E+01	2.10316E-08
64	64	1.90000E+03	0.00000E+00	1.99018E+01	1.99003E+01	4.83442E-08
65	65	1.90000E+03	0.00000E+00	1.99038E+01	1.99022E+01	2.08086E-07
66	66	1.90000E+03	0.00000E+00	1.99062E+01	1.99043E+01	2.55835E-07
67	67	1.90000E+03	0.00000E+00	1.99086E+01	1.99066E+01	2.77658E-07
68	68	1.90000E+03	0.00000E+00	1.99107E+01	1.99086E+01	1.40341E-07
69	69	1.90000E+03	0.00000E+00	1.99134E+01	1.99109E+01	2.96609E-07
70	70	1.90000E+03	0.00000E+00	1.99164E+01	1.99137E+01	3.14152E-07
71	71	1.90000E+03	0.00000E+00	1.99199E+01	1.99168E+01	3.25884E-07
72	72	1.90000E+03	0.00000E+00	1.99217E+01	1.99185E+01	1.24919E-07
73	73	1.90000E+03	0.00000E+00	1.99042E+01	1.99025E+01	8.97146E-08
74	74	1.90000E+03	0.00000E+00	1.99064E+01	1.99045E+01	3.73354E-07
75	75	1.90000E+03	0.00000E+00	1.99088E+01	1.99068E+01	4.35523E-07
76	76	1.90000E+03	0.00000E+00	1.99114E+01	1.99091E+01	4.43984E-07
77	77	1.90000E+03	0.00000E+00	1.99136E+01	1.99111E+01	2.10446E-07
78	78	1.90000E+03	0.00000E+00	1.99162E+01	1.99134E+01	4.20525E-07
79	79	1.90000E+03	0.00000E+00	1.99195E+01	1.99164E+01	4.25992E-07
80	80	1.90000E+03	0.00000E+00	1.99231E+01	1.99198E+01	4.39462E-07
81	81	1.90000E+03	0.00000E+00	1.99250E+01	1.99214E+01	1.69396E-07

O SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	1	1.99079E+01	2	1.99078E+01	3	1.99077E+01	4	1.99075E+01	5	1.99072E+01	6	1.99068E+01	7	1.99063E+01
2	1	1.99100E+01	2	1.99099E+01	3	1.99098E+01	4	1.99095E+01	5	1.99092E+01	6	1.99088E+01	7	1.99082E+01
3	1	1.99129E+01	2	1.99128E+01	3	1.99126E+01	4	1.99124E+01	5	1.99120E+01	6	1.99115E+01	7	1.99109E+01
4	1	1.99158E+01	2	1.99157E+01	3	1.99155E+01	4	1.99152E+01	5	1.99148E+01	6	1.99143E+01	7	1.99137E+01
5	1	1.99179E+01	2	1.99178E+01	3	1.99177E+01	4	1.99173E+01	5	1.99169E+01	6	1.99164E+01	7	1.99157E+01
6	1	1.99208E+01	2	1.99207E+01	3	1.99205E+01	4	1.99202E+01	5	1.99197E+01	6	1.99191E+01	7	1.99184E+01
7	1	1.99244E+01	2	1.99243E+01	3	1.99241E+01	4	1.99237E+01	5	1.99232E+01	6	1.99225E+01	7	1.99218E+01
8	1	1.99280E+01	2	1.99280E+01	3	1.99277E+01	4	1.99273E+01	5	1.99268E+01	6	1.99261E+01	7	1.99253E+01
9	1	1.99301E+01	2	1.99300E+01	3	1.99298E+01	4	1.99294E+01	5	1.99288E+01	6	1.99281E+01	7	1.99272E+01
10	1	1.99027E+01	2	1.99027E+01	3	1.99026E+01	4	1.99024E+01	5	1.99022E+01	6	1.99020E+01	7	1.99016E+01
11	1	1.99047E+01	2	1.99047E+01	3	1.99046E+01	4	1.99044E+01	5	1.99042E+01	6	1.99039E+01	7	1.99035E+01
12	1	1.99071E+01	2	1.99071E+01	3	1.99070E+01	4	1.99068E+01	5	1.99065E+01	6	1.99062E+01	7	1.99058E+01
13	1	1.99099E+01	2	1.99098E+01	3	1.99097E+01	4	1.99094E+01	5	1.99091E+01	6	1.99087E+01	7	1.99082E+01
14	1	1.99119E+01	2	1.99118E+01	3	1.99117E+01	4	1.99114E+01	5	1.99111E+01	6	1.99107E+01	7	1.99102E+01
15	1	1.99144E+01	2	1.99143E+01	3	1.99142E+01	4	1.99139E+01	5	1.99135E+01	6	1.99131E+01	7	1.99125E+01
16	1	1.99174E+01	2	1.99173E+01	3	1.99171E+01	4	1.99168E+01	5	1.99164E+01	6	1.99159E+01	7	1.99152E+01
17	1	1.99209E+01	2	1.99209E+01	3	1.99207E+01	4	1.99203E+01	5	1.99199E+01	6	1.99193E+01	7	1.99186E+01
18	1	1.99231E+01	2	1.99230E+01	3	1.99228E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99206E+01
19	1	1.99025E+01	2	1.99025E+01	3	1.99024E+01	4	1.99023E+01	5	1.99021E+01	6	1.99018E+01	7	1.99015E+01
20	1	1.99046E+01	2	1.99046E+01	3	1.99045E+01	4	1.99043E+01	5	1.99040E+01	6	1.99037E+01	7	1.99034E+01
21	1	1.99070E+01	2	1.99069E+01	3	1.99068E+01	4	1.99066E+01	5	1.99064E+01	6	1.99060E+01	7	1.99056E+01
22	1	1.99096E+01	2	1.99096E+01	3	1.99094E+01	4	1.99092E+01	5	1.99089E+01	6	1.99085E+01	7	1.99081E+01
23	1	1.99117E+01	2	1.99116E+01	3	1.99115E+01	4	1.99113E+01	5	1.99109E+01	6	1.99105E+01	7	1.99100E+01
24	1	1.99141E+01	2	1.99141E+01	3	1.99139E+01	4	1.99137E+01	5	1.99133E+01	6	1.99129E+01	7	1.99123E+01
25	1	1.99173E+01	2	1.99173E+01	3	1.99171E+01	4	1.99168E+01	5	1.99164E+01	6	1.99159E+01	7	1.99153E+01
26	1	1.99208E+01	2	1.99208E+01	3	1.99206E+01	4	1.99202E+01	5	1.99198E+01	6	1.99192E+01	7	1.99185E+01
27	1	1.99229E+01	2	1.99228E+01	3	1.99226E+01	4	1.99223E+01	5	1.99218E+01	6	1.99212E+01	7	1.99205E+01
28	1	1.99017E+01	2	1.99016E+01	3	1.99015E+01	4	1.99014E+01	5	1.99012E+01	6	1.99010E+01	7	1.99007E+01
29	1	1.99037E+01	2	1.99037E+01	3	1.99036E+01	4	1.99034E+01	5	1.99032E+01	6	1.99029E+01	7	1.99025E+01
30	1	1.99060E+01	2	1.99060E+01	3	1.99058E+01	4	1.99057E+01	5	1.99054E+01	6	1.99051E+01	7	1.99047E+01
31	1	1.99085E+01	2	1.99085E+01	3	1.99084E+01	4	1.99081E+01	5	1.99078E+01	6	1.99075E+01	7	1.99070E+01
32	1	1.99107E+01	2	1.99106E+01	3	1.99105E+01	4	1.99103E+01	5	1.99100E+01	6	1.99096E+01	7	1.99091E+01
33	1	1.99133E+01	2	1.99132E+01	3	1.99131E+01	4	1.99128E+01	5	1.99125E+01	6	1.99120E+01	7	1.99115E+01
34	1	1.99164E+01	2	1.99164E+01	3	1.99162E+01	4	1.99159E+01	5	1.99155E+01	6	1.99151E+01	7	1.99145E+01
35	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99177E+01
36	1	1.99217E+01	2	1.99216E+01	3	1.99214E+01	4	1.99211E+01	5	1.99206E+01	6	1.99201E+01	7	1.99193E+01
37	1	1.99042E+01	2	1.99042E+01	3	1.99041E+01	4	1.99039E+01	5	1.99037E+01	6	1.99034E+01	7	1.99030E+01
38	1	1.99063E+01	2	1.99063E+01	3	1.99061E+01	4	1.99060E+01	5	1.99057E+01	6	1.99054E+01	7	1.99050E+01
39	1	1.99089E+01	2	1.99089E+01	3	1.99088E+01	4	1.99085E+01	5	1.99082E+01	6	1.99079E+01	7	1.99074E+01
40	1	1.99115E+01	2	1.99114E+01	3	1.99113E+01	4	1.99110E+01	5	1.99107E+01	6	1.99102E+01	7	1.99097E+01
41	1	1.99136E+01	2	1.99135E+01	3	1.99134E+01	4	1.99131E+01	5	1.99128E+01	6	1.99123E+01	7	1.99118E+01
42	1	1.99161E+01	2	1.99161E+01	3	1.99159E+01	4	1.99156E+01	5	1.99152E+01	6	1.99147E+01	7	1.99142E+01
43	1	1.99196E+01	2	1.99195E+01	3	1.99193E+01	4	1.99190E+01	5	1.99186E+01	6	1.99181E+01	7	1.99174E+01
44	1	1.99231E+01	2	1.99231E+01	3	1.99229E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99207E+01
45	1	1.99251E+01	2	1.99250E+01	3	1.99248E+01	4	1.99245E+01	5	1.99240E+01	6	1.99233E+01	7	1.99226E+01
46	1	1.99028E+01	2	1.99028E+01	3	1.99027E+01	4	1.99025E+01	5	1.99023E+01	6	1.99020E+01	7	1.99017E+01
47	1	1.99048E+01	2	1.99047E+01	3	1.99046E+01	4	1.99044E+01	5	1.99042E+01	6	1.99039E+01	7	1.99035E+01
48	1	1.99072E+01	2	1.99072E+01	3	1.99070E+01	4	1.99068E+01	5	1.99066E+01	6	1.99062E+01	7	1.99058E+01
49	1	1.99098E+01	2	1.99098E+01	3	1.99096E+01	4	1.99094E+01	5	1.99091E+01	6	1.99087E+01	7	1.99082E+01
50	1	1.99119E+01	2	1.99118E+01	3	1.99117E+01	4	1.99114E+01	5	1.99111E+01	6	1.99107E+01	7	1.99102E+01
51	1	1.99143E+01	2	1.99143E+01	3	1.99141E+01	4	1.99138E+01	5	1.99134E+01	6	1.99130E+01	7	1.99124E+01
52	1	1.99174E+01	2	1.99174E+01	3	1.99172E+01	4	1.99169E+01	5	1.99165E+01	6	1.99160E+01	7	1.99154E+01
53	1	1.99210E+01	2	1.99209E+01	3	1.99207E+01	4	1.99204E+01	5	1.99199E+01	6	1.99194E+01	7	1.99187E+01
54	1	1.99232E+01	2	1.99231E+01	3	1.99229E+01	4	1.99225E+01	5	1.99221E+01	6	1.99215E+01	7	1.99207E+01
55	1	1.99020E+01	2	1.99020E+01	3	1.99019E+01	4	1.99017E+01	5	1.99015E+01	6	1.99013E+01	7	1.99010E+01
56	1	1.99040E+01	2	1.99040E+01	3	1.99039E+01	4	1.99037E+01	5	1.99035E+01	6	1.99032E+01	7	1.99028E+01
57	1	1.99063E+01	2	1.99063E+01	3	1.99062E+01	4	1.99060E+01	5	1.99057E+01	6	1.99054E+01	7	1.99050E+01
58	1	1.99089E+01	2	1.99088E+01	3	1.99087E+01	4	1.99085E+01	5	1.99082E+01	6	1.99078E+01	7	1.99074E+01
59	1	1.99109E+01	2	1.99108E+01	3	1.99107E+01	4	1.99105E+01	5	1.99101E+01	6	1.99097E+01	7	1.99093E+01
60	1	1.99132E+01	2	1.99132E+01	3	1.99130E+01	4	1.99128E+01	5	1.99124E+01	6	1.99120E+01	7	1.99114E+01
61	1	1.99163E+01	2	1.99162E+01	3	1.99160E+01	4	1.99158E+01	5	1.99154E+01	6	1.99149E+01	7	1.99143E+01
62	1	1.99197E+01	2	1.99196E+01	3	1.99194E+01	4	1.99191E+01	5	1.99187E+01	6	1.99182E+01	7	1.99175E+01
63	1	1.99217E+01	2	1.99217E+01	3	1.99215E+01	4	1.99212E+01	5	1.99207E+01	6	1.99202E+01	7	1.99195E+01
64	1	1.99018E+01	2	1.99017E+01	3	1.99016E+01	4	1.99015E+01	5	1.99013E+01	6	1.99010E+01	7	1.99007E+01
65	1	1.99038E+01	2	1.99037E+01	3	1.99036E+01	4	1.99035E+01	5	1.99032E+01	6	1.99030E+01	7	1.99026E+01
66	1	1.99062E+01	2	1.99061E+01	3	1.99060E+01	4	1.99058E+01	5	1.99056E+01	6	1.99052E+01	7	1.99048E+01
67	1	1.99086E+01	2	1.99086E+01	3	1.99084E+01	4	1.99082E+01	5	1.99079E+01	6	1.99076E+01	7	1.99072E+01
68	1	1.99107E+01	2	1.99107E+01	3	1.99105E+01	4	1.99103E+01	5	1.99100E+01	6	1.99096E+01	7	1.99092E+01
69	1	1.99134E+01	2	1.99133E+01	3	1.99132E+01	4	1.99129E+01	5	1.99126E+01	6	1.99121E+01	7	1.99116E+01
70	1	1.99164E+01	2	1.99163E+01	3	1.99162E+01	4	1.99159E+01	5	1.99155E+01	6	1.99150E+01	7	1.99144E+01
71	1	1.99199E+01	2	1.99198E+01	3	1.99196E+01	4	1.99193E+01	5	1.99189E+01	6	1.99183E+01	7	1.99176E+01
72	1	1.99217E+01	2	1.99216E+01	3	1.99214E+01	4	1.99211E+01	5	1.99206E+01	6	1.99201E+01	7	1.99194E+01
73	1	1.99042E+01	2	1.99041E+01	3	1.99040E+01	4	1.99039E+01	5	1.99036E+01	6	1.99033E+01	7	1.99030E+01
74	1	1.99064E+01	2	1.99063E+01	3	1.99062E+01	4	1.99060E+01	5	1.99058E+01	6	1.99054E+01	7	1.99050E+01
75	1	1.99088E+01	2	1.99088E+01	3	1.99087E+01	4	1.99085E+01	5	1.99082E+01	6	1.99078E+01	7	1.99074E+01
76	1	1.99114E+01	2	1.99114E+01	3	1.99112E+01	4	1.99110E+01	5	1.99106E+01	6	1.99102E+01	7	1.99097E+01
77	1	1.99136E+01	2	1.99136E+01	3	1.99134E+01	4	1.99132E+01	5	1.99128E+01	6	1.99124E+01	7	1.99118E+01
78	1	1.99162E+01	2	1.99161E+01	3	1.99159E+01	4	1.99156E+01	5	1.99152E+01	6	1.99147E+01	7	1.99141E+01
79	1	1.99195E+01	2	1.99194E+01	3	1.99193E+01	4	1.99189E+01	5	1.99185E+01	6	1.99179E+01	7	1.99173E+01
80	1	1.99231E+01	2	1.99230E+01	3	1.99228E+01	4	1.99225E+01	5	1.99220E+01	6	1.99214E+01	7	1.99207E+01
81	1	1.99250E+01	2	1.99250E+01	3	1.99248E+01	4	1.99244E+01	5	1.99239E+01	6	1.99233E+01	7	1.99225E+01

0 SLAB NUM	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	8	1.99058E+01	9	1.99052E+01	10	1.99046E+01	11	1.99040E+01	12	1.99040E+01	13	1.99037E+01	14	1.99026E+01
2	8	1.99076E+01	9	1.99069E+01	10	1.99062E+01	11	1.99055E+01	12	1.99055E+01	13	1.99052E+01	14	1.99041E+01
3	8	1.99103E+01	9	1.99095E+01	10	1.99086E+01	11	1.99076E+01	12	1.99076E+01	13	1.99071E+01	14	1.99057E+01
4	8	1.99130E+01	9	1.99121E+01	10	1.99112E+01	11	1.99102E+01	12	1.99102E+01	13	1.99095E+01	14	1.99081E+01
5	8	1.99150E+01	9	1.99141E+01	10	1.99131E+01	11	1.99121E+01	12	1.99120E+01	13	1.99114E+01	14	1.99098E+01
6	8	1.99176E+01	9	1.99166E+01	10	1.99157E+01	11	1.99148E+01	12	1.99147E+01	13	1.99143E+01	14	1.99130E+01
7	8	1.99209E+01	9	1.99199E+01	10	1.99187E+01	11	1.99175E+01	12	1.99174E+01	13	1.99167E+01	14	1.99151E+01
8	8	1.99243E+01	9	1.99232E+01	10	1.99220E+01	11	1.99206E+01	12	1.99206E+01	13	1.99197E+01	14	1.99180E+01
9	8	1.99262E+01	9	1.99250E+01	10	1.99237E+01	11	1.99223E+01	12	1.99223E+01	13	1.99215E+01	14	1.99202E+01
10	8	1.99013E+01	9	1.99008E+01	10	1.99004E+01	11	1.99000E+01	12	1.99000E+01	13	1.98998E+01	14	1.98986E+01
11	8	1.99031E+01	9	1.99027E+01	10	1.99022E+01	11	1.99017E+01	12	1.99017E+01	13	1.99015E+01	14	1.99004E+01
12	8	1.99053E+01	9	1.99048E+01	10	1.99042E+01	11	1.99035E+01	12	1.99035E+01	13	1.99031E+01	14	1.99016E+01
13	8	1.99077E+01	9	1.99070E+01	10	1.99064E+01	11	1.99058E+01	12	1.99058E+01	13	1.99055E+01	14	1.99042E+01
14	8	1.99096E+01	9	1.99090E+01	10	1.99083E+01	11	1.99077E+01	12	1.99077E+01	13	1.99074E+01	14	1.99060E+01
15	8	1.99119E+01	9	1.99112E+01	10	1.99104E+01	11	1.99097E+01	12	1.99097E+01	13	1.99094E+01	14	1.99081E+01
16	8	1.99145E+01	9	1.99137E+01	10	1.99129E+01	11	1.99119E+01	12	1.99119E+01	13	1.99113E+01	14	1.99100E+01
17	8	1.99178E+01	9	1.99169E+01	10	1.99158E+01	11	1.99147E+01	12	1.99147E+01	13	1.99141E+01	14	1.99126E+01
18	8	1.99198E+01	9	1.99189E+01	10	1.99179E+01	11	1.99167E+01	12	1.99167E+01	13	1.99161E+01	14	1.99149E+01
19	8	1.99011E+01	9	1.99007E+01	10	1.99002E+01	11	1.98999E+01	12	1.98999E+01	13	1.98997E+01	14	1.98985E+01
20	8	1.99030E+01	9	1.99025E+01	10	1.99020E+01	11	1.99016E+01	12	1.99016E+01	13	1.99014E+01	14	1.99002E+01
21	8	1.99052E+01	9	1.99046E+01	10	1.99041E+01	11	1.99036E+01	12	1.99036E+01	13	1.99033E+01	14	1.99021E+01
22	8	1.99076E+01	9	1.99070E+01	10	1.99064E+01	11	1.99058E+01	12	1.99058E+01	13	1.99056E+01	14	1.99045E+01
23	8	1.99094E+01	9	1.99087E+01	10	1.99081E+01	11	1.99074E+01	12	1.99074E+01	13	1.99072E+01	14	1.99060E+01
24	8	1.99117E+01	9	1.99109E+01	10	1.99101E+01	11	1.99091E+01	12	1.99091E+01	13	1.99086E+01	14	1.99073E+01
25	8	1.99146E+01	9	1.99138E+01	10	1.99129E+01	11	1.99119E+01	12	1.99119E+01	13	1.99114E+01	14	1.99102E+01
26	8	1.99177E+01	9	1.99168E+01	10	1.99158E+01	11	1.99150E+01	12	1.99150E+01	13	1.99146E+01	14	1.99133E+01
27	8	1.99197E+01	9	1.99188E+01	10	1.99178E+01	11	1.99166E+01	12	1.99166E+01	13	1.99160E+01	14	1.99146E+01
28	8	1.99003E+01	9	1.99000E+01	10	1.98995E+01	11	1.98990E+01	12	1.98990E+01	13	1.98986E+01	14	1.98972E+01
29	8	1.99021E+01	9	1.99017E+01	10	1.99012E+01	11	1.99008E+01	12	1.99008E+01	13	1.99006E+01	14	1.98993E+01
30	8	1.99043E+01	9	1.99038E+01	10	1.99032E+01	11	1.99027E+01	12	1.99027E+01	13	1.99025E+01	14	1.99012E+01
31	8	1.99065E+01	9	1.99060E+01	10	1.99054E+01	11	1.99048E+01	12	1.99048E+01	13	1.99046E+01	14	1.99035E+01
32	8	1.99086E+01	9	1.99080E+01	10	1.99073E+01	11	1.99067E+01	12	1.99067E+01	13	1.99064E+01	14	1.99051E+01
33	8	1.99109E+01	9	1.99102E+01	10	1.99095E+01	11	1.99086E+01	12	1.99086E+01	13	1.99081E+01	14	1.99067E+01
34	8	1.99138E+01	9	1.99130E+01	10	1.99122E+01	11	1.99115E+01	12	1.99115E+01	13	1.99111E+01	14	1.99100E+01
35	8	1.99169E+01	9	1.99161E+01	10	1.99152E+01	11	1.99141E+01	12	1.99141E+01	13	1.99135E+01	14	1.99121E+01
36	8	1.99185E+01	9	1.99176E+01	10	1.99167E+01	11	1.99158E+01	12	1.99158E+01	13	1.99154E+01	14	1.99143E+01
37	8	1.99026E+01	9	1.99021E+01	10	1.99016E+01	11	1.99012E+01	12	1.99012E+01	13	1.99010E+01	14	1.98997E+01
38	8	1.99045E+01	9	1.99040E+01	10	1.99034E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99015E+01
39	8	1.99069E+01	9	1.99063E+01	10	1.99057E+01	11	1.99049E+01	12	1.99049E+01	13	1.99044E+01	14	1.99031E+01
40	8	1.99091E+01	9	1.99085E+01	10	1.99078E+01	11	1.99072E+01	12	1.99072E+01	13	1.99069E+01	14	1.99056E+01
41	8	1.99112E+01	9	1.99104E+01	10	1.99096E+01	11	1.99086E+01	12	1.99086E+01	13	1.99081E+01	14	1.99068E+01
42	8	1.99135E+01	9	1.99127E+01	10	1.99119E+01	11	1.99109E+01	12	1.99109E+01	13	1.99104E+01	14	1.99090E+01
43	8	1.99166E+01	9	1.99157E+01	10	1.99147E+01	11	1.99136E+01	12	1.99136E+01	13	1.99130E+01	14	1.99116E+01
44	8	1.99199E+01	9	1.99190E+01	10	1.99180E+01	11	1.99168E+01	12	1.99168E+01	13	1.99162E+01	14	1.99148E+01
45	8	1.99217E+01	9	1.99207E+01	10	1.99197E+01	11	1.99184E+01	12	1.99184E+01	13	1.99178E+01	14	1.99165E+01
46	8	1.99013E+01	9	1.99009E+01	10	1.99004E+01	11	1.99000E+01	12	1.99000E+01	13	1.98998E+01	14	1.98986E+01
47	8	1.99031E+01	9	1.99026E+01	10	1.99021E+01	11	1.99017E+01	12	1.99017E+01	13	1.99014E+01	14	1.99003E+01
48	8	1.99054E+01	9	1.99048E+01	10	1.99043E+01	11	1.99037E+01	12	1.99037E+01	13	1.99035E+01	14	1.99022E+01
49	8	1.99077E+01	9	1.99070E+01	10	1.99063E+01	11	1.99054E+01	12	1.99054E+01	13	1.99050E+01	14	1.99036E+01
50	8	1.99097E+01	9	1.99091E+01	10	1.99084E+01	11	1.99075E+01	12	1.99075E+01	13	1.99070E+01	14	1.99057E+01
51	8	1.99117E+01	9	1.99110E+01	10	1.99102E+01	11	1.99093E+01	12	1.99093E+01	13	1.99088E+01	14	1.99074E+01
52	8	1.99147E+01	9	1.99139E+01	10	1.99130E+01	11	1.99120E+01	12	1.99120E+01	13	1.99113E+01	14	1.99099E+01
53	8	1.99179E+01	9	1.99171E+01	10	1.99161E+01	11	1.99150E+01	12	1.99150E+01	13	1.99144E+01	14	1.99131E+01
54	8	1.99199E+01	9	1.99189E+01	10	1.99179E+01	11	1.99170E+01	12	1.99170E+01	13	1.99166E+01	14	1.99154E+01
55	8	1.99006E+01	9	1.99002E+01	10	1.98998E+01	11	1.98995E+01	12	1.98995E+01	13	1.98993E+01	14	1.98982E+01
56	8	1.99024E+01	9	1.99020E+01	10	1.99015E+01	11	1.99011E+01	12	1.99011E+01	13	1.99009E+01	14	1.98996E+01
57	8	1.99046E+01	9	1.99041E+01	10	1.99036E+01	11	1.99029E+01	12	1.99029E+01	13	1.99025E+01	14	1.99011E+01
58	8	1.99069E+01	9	1.99064E+01	10	1.99057E+01	11	1.99050E+01	12	1.99050E+01	13	1.99046E+01	14	1.99034E+01
59	8	1.99087E+01	9	1.99081E+01	10	1.99075E+01	11	1.99069E+01	12	1.99069E+01	13	1.99067E+01	14	1.99054E+01
60	8	1.99108E+01	9	1.99101E+01	10	1.99094E+01	11	1.99088E+01	12	1.99088E+01	13	1.99085E+01	14	1.99072E+01
61	8	1.99136E+01	9	1.99128E+01	10	1.99120E+01	11	1.99113E+01	12	1.99113E+01	13	1.99109E+01	14	1.99098E+01
62	8	1.99168E+01	9	1.99160E+01	10	1.99151E+01	11	1.99140E+01	12	1.99140E+01	13	1.99134E+01	14	1.99122E+01
63	8	1.99187E+01	9	1.99178E+01	10	1.99168E+01	11	1.99157E+01	12	1.99157E+01	13	1.99150E+01	14	1.99136E+01
64	8	1.99004E+01	9	1.99000E+01	10	1.98995E+01	11	1.98992E+01	12	1.98992E+01	13	1.98991E+01	14	1.98979E+01
65	8	1.99022E+01	9	1.99017E+01	10	1.99013E+01	11	1.99008E+01	12	1.99008E+01	13	1.99006E+01	14	1.98994E+01
66	8	1.99044E+01	9	1.99039E+01	10	1.99033E+01	11	1.99026E+01	12	1.99026E+01	13	1.99022E+01	14	1.99007E+01
67	8	1.99067E+01	9	1.99061E+01	10	1.99055E+01	11	1.99048E+01	12	1.99048E+01	13	1.99043E+01	14	1.99029E+01
68	8	1.99086E+01	9	1.99081E+01	10	1.99074E+01	11	1.99066E+01	12	1.99066E+01	13	1.99061E+01	14	1.99045E+01
69	8	1.99109E+01	9	1.99102E+01	10	1.99095E+01	11	1.99088E+01	12	1.99088E+01	13	1.99085E+01	14	1.99074E+01
70	8	1.99137E+01	9	1.99130E+01	10	1.99121E+01	11	1.99112E+01	12	1.99112E+01	13	1.99106E+01	14	1.99090E+01
71	8	1.99169E+01	9	1.99160E+01	10	1.99151E+01	11	1.99140E+01	12	1.99140E+01	13	1.99134E+01	14	1.99117E+01
72	8	1.99186E+01	9	1.99177E+01	10	1.99167E+01	11	1.99156E+01	12	1.99156E+01	13	1.99149E+01	14	1.99132E+01
73	8	1.99026E+01	9	1.99022E+01	10	1.99017E+01	11	1.99010E+01	12	1.99010E+01	13	1.99006E+01	14	1.98992E+01
74	8	1.99045E+01	9	1.99040E+01	10	1.99035E+01	11	1.99029E+01	12	1.99029E+01	13	1.99027E+01	14	1.99016E+01
75	8	1.99069E+01	9	1.99063E+01	10	1.99057E+01	11	1.99049E+01	12	1.99049E+01	13	1.99045E+01	14	1.99032E+01
76	8	1.99092E+01	9	1.99085E+01	10	1.99079E+01	11	1.99072E+01	12	1.99072E+01	13	1.99070E+01	14	1.99056E+01
77	8	1.99112E+01	9	1.99105E+01	10	1.99096E+01	11	1.99087E+01	12	1.99087E+01	13	1.99082E+01	14	1.99069E+01
78	8	1.99135E+01	9	1.99127E+01	10	1.99119E+01	11	1.99109E+01	12	1.99109E+01	13	1.99104E+01	14	1.99091E+01
79	8	1.99165E+01	9	1.99156E+01	10	1.99147E+01	11	1.99139E+01	12	1.99139E+01	13	1.99135E+01	14	1.99123E+01
80	8	1.99199E+01	9	1.99189E+01	10	1.99179E+01	11	1.99167E+01	12	1.99167E+01	13	1.99160E+01	14	1.99145E+01
81	8	1.99216E+01	9	1.99205E+01	10	1.99193E+01	11	1.99181E+01	12	1.99181E+01	13	1.99175E+01	14	1.99160E+01

OJUNCTION NUMBER	CONNECTING VOLUMES	JCT. FLOW (TON/HR)	JCT. ENTH (KC/KG)	JCT. SPVL (M*3/KG)	P R E S S U R E D I F F E R E N T I A L S STAG ATA	ELEV ATA	FRIC ATA	ACCL ATA
1	82 TO 10	2.24435E+01	1.99994E+01	1.00147E-03	7.08664E-01	-9.89207E-02	-6.09683E-01	6.12744E-05
2	1 TO 20	2.24435E+01	2.00002E+01	1.00148E-03	6.94868E-02	-3.69568E-02	-3.25457E-02	-1.57235E-05
3	2 TO 30	2.24435E+01	1.99999E+01	1.00149E-03	1.13230E-01	-4.92755E-02	-6.39906E-02	-3.62197E-05
4	3 TO 40	2.24435E+01	1.99995E+01	1.00149E-03	1.04528E-01	-4.92752E-02	-5.52584E-02	-5.16684E-06
5	4 TO 50	2.24435E+01	1.99993E+01	1.00150E-03	9.60549E-02	-3.69563E-02	-5.90895E-02	9.05357E-06
6	5 TO 60	2.24435E+01	1.99993E+01	1.00150E-03	8.73246E-02	-3.69560E-02	-5.03483E-02	2.03354E-05
7	6 TO 70	2.24435E+01	1.99994E+01	1.00151E-03	1.22306E-01	-4.92745E-02	-7.30671E-02	-3.60021E-05
8	7 TO 80	2.24435E+01	1.99993E+01	1.00151E-03	1.22432E-01	-4.92742E-02	-7.31548E-02	2.90150E-06
9	8 TO 90	2.24435E+01	1.99995E+01	1.00152E-03	7.86305E-02	-3.69555E-02	-4.17064E-02	-3.14209E-05
10	9 TO 910	2.24435E+01	1.99996E+01	1.00152E-03	6.70988E-01	-5.17090E-01	-1.53949E-01	-5.04653E-05
11	83 TO 100	1.84283E+02	1.99969E+01	1.00147E-03	6.79607E-01	-9.89208E-02	-5.80604E-01	8.25494E-05
12	10 TO 110	1.84283E+02	1.99976E+01	1.00148E-03	8.18695E-02	-3.69569E-02	-4.49624E-02	-4.97643E-05
13	11 TO 120	1.84283E+02	1.99971E+01	1.00149E-03	1.09274E-01	-4.92756E-02	-6.00062E-02	-7.61704E-06
14	12 TO 130	1.84283E+02	1.99965E+01	1.00149E-03	1.09389E-01	-4.92753E-02	-6.00821E-02	3.11200E-05
15	13 TO 140	1.84283E+02	1.99960E+01	1.00150E-03	1.02066E-01	-3.69564E-02	-6.51191E-02	-9.84888E-06
16	14 TO 150	1.84283E+02	1.99958E+01	1.00150E-03	8.21169E-02	-3.69560E-02	-4.51747E-02	-1.38106E-05
17	15 TO 160	1.84283E+02	1.99955E+01	1.00151E-03	1.19541E-01	-4.92746E-02	-7.03040E-02	-3.74256E-05
18	16 TO 170	1.84283E+02	1.99951E+01	1.00151E-03	1.29689E-01	-4.92743E-02	-8.04046E-02	1.02841E-05
19	17 TO 180	1.84283E+02	1.99948E+01	1.00152E-03	9.22652E-02	-3.69556E-02	-5.53564E-02	-4.67694E-05
20	18 TO 920	1.84283E+02	1.99948E+01	1.00152E-03	6.73828E-01	-5.17091E-01	-1.56794E-01	-5.63474E-05
21	84 TO 190	5.06977E+02	1.99968E+01	1.00147E-03	6.78070E-01	-9.89208E-02	-5.79069E-01	8.10664E-05
22	19 TO 200	5.06977E+02	1.99976E+01	1.00148E-03	8.19100E-02	-3.69569E-02	-4.49995E-02	-4.64200E-05
23	20 TO 210	5.06977E+02	1.99970E+01	1.00149E-03	1.09345E-01	-4.92756E-02	-6.00551E-02	1.43171E-05
24	21 TO 220	5.06977E+02	1.99965E+01	1.00149E-03	1.09382E-01	-4.92753E-02	-6.01310E-02	-2.40437E-05
25	22 TO 230	5.06977E+02	1.99960E+01	1.00150E-03	1.02162E-01	-3.69564E-02	-6.51777E-02	2.80962E-05
26	23 TO 240	5.06977E+02	1.99958E+01	1.00150E-03	8.21143E-02	-3.69560E-02	-4.52120E-02	-5.36764E-05
27	24 TO 250	5.06977E+02	1.99953E+01	1.00151E-03	1.19620E-01	-4.92746E-02	-7.03637E-02	-1.82834E-05
28	25 TO 260	5.06977E+02	1.99951E+01	1.00151E-03	1.29812E-01	-4.92743E-02	-8.04751E-02	6.22949E-05
29	26 TO 270	5.06977E+02	1.99949E+01	1.00152E-03	9.22883E-02	-3.69556E-02	-5.54044E-02	-7.17448E-05
30	27 TO 930	5.06977E+02	1.99948E+01	1.00152E-03	6.75112E-01	-5.17091E-01	-1.58090E-01	-6.87383E-05
31	85 TO 280	2.88764E+03	1.99966E+01	1.00147E-03	6.74727E-01	-9.89209E-02	-5.75762E-01	4.38378E-05
32	28 TO 290	2.88764E+03	1.99973E+01	1.00148E-03	8.24790E-02	-3.69569E-02	-4.55081E-02	1.40069E-05
33	29 TO 300	2.88764E+03	1.99967E+01	1.00149E-03	1.09999E-01	-4.92756E-02	-6.07345E-02	-1.13670E-05
34	30 TO 310	2.88764E+03	1.99961E+01	1.00149E-03	1.10071E-01	-4.92754E-02	-6.08120E-02	-1.61638E-05
35	31 TO 320	2.88764E+03	1.99956E+01	1.00150E-03	1.02767E-01	-3.69564E-02	-6.57913E-02	1.90561E-05
36	32 TO 330	2.88764E+03	1.99954E+01	1.00150E-03	9.27063E-02	-3.69561E-02	-5.57955E-02	-4.52796E-05
37	33 TO 340	2.88764E+03	1.99949E+01	1.00151E-03	1.20411E-01	-4.92746E-02	-7.11071E-02	2.92721E-05
38	34 TO 350	2.88764E+03	1.99946E+01	1.00151E-03	1.30504E-01	-4.92743E-02	-8.12716E-02	-4.24685E-05
39	35 TO 360	2.88764E+03	1.99943E+01	1.00152E-03	8.29079E-02	-3.69556E-02	-4.59083E-02	4.40697E-05
40	36 TO 940	2.88764E+03	1.99943E+01	1.00152E-03	6.86607E-01	-5.17091E-01	-1.69650E-01	-1.34281E-04
41	86 TO 370	3.52610E+03	1.99973E+01	1.00147E-03	6.93541E-01	-9.89207E-02	-5.94535E-01	8.55262E-05
42	37 TO 380	3.52610E+03	1.99981E+01	1.00148E-03	8.15213E-02	-3.69568E-02	-4.46098E-02	-4.52917E-05
43	38 TO 390	3.52610E+03	1.99976E+01	1.00149E-03	1.08782E-01	-4.92755E-02	-5.95351E-02	-2.83944E-05
44	39 TO 400	3.52610E+03	1.99970E+01	1.00149E-03	1.08925E-01	-4.92752E-02	-5.96104E-02	3.93446E-05
45	40 TO 410	3.52610E+03	1.99967E+01	1.00150E-03	1.01557E-01	-3.69563E-02	-6.46389E-02	-3.82385E-05
46	41 TO 420	3.52610E+03	1.99964E+01	1.00150E-03	8.17575E-02	-3.69560E-02	-4.48204E-02	-1.88741E-05
47	42 TO 430	3.52610E+03	1.99961E+01	1.00151E-03	1.28997E-01	-4.92745E-02	-7.97132E-02	9.72714E-06
48	43 TO 440	3.52610E+03	1.99959E+01	1.00151E-03	1.29060E-01	-4.92742E-02	-7.98112E-02	-2.54229E-05
49	44 TO 450	3.52609E+03	1.99958E+01	1.00152E-03	8.19589E-02	-3.69555E-02	-4.49988E-02	4.57368E-06
50	45 TO 950	3.52609E+03	1.99958E+01	1.00152E-03	6.61519E-01	-5.17091E-01	-1.44514E-01	-8.55626E-05
51	87 TO 460	1.84297E+02	1.99969E+01	1.00147E-03	6.79685E-01	-9.89208E-02	-5.80685E-01	7.98267E-05
52	46 TO 470	1.84297E+02	1.99976E+01	1.00148E-03	8.18816E-02	-3.69569E-02	-4.49685E-02	-4.37128E-05
53	47 TO 480	1.84297E+02	1.99971E+01	1.00149E-03	1.09300E-01	-4.92756E-02	-6.00143E-02	1.04077E-05
54	48 TO 490	1.84297E+02	1.99965E+01	1.00149E-03	1.09330E-01	-4.92753E-02	-6.00902E-02	-3.54464E-05
55	49 TO 500	1.84297E+02	1.99960E+01	1.00150E-03	1.02068E-01	-3.69564E-02	-6.51281E-02	-1.60226E-05
56	50 TO 510	1.84297E+02	1.99958E+01	1.00150E-03	8.21605E-02	-3.69560E-02	-4.51808E-02	2.36464E-05
57	51 TO 520	1.84297E+02	1.99954E+01	1.00151E-03	1.19580E-01	-4.92746E-02	-7.03136E-02	-7.82956E-06
58	52 TO 530	1.84297E+02	1.99951E+01	1.00151E-03	1.29660E-01	-4.92743E-02	-8.04157E-02	-2.96735E-05
59	53 TO 540	1.84297E+02	1.99950E+01	1.00152E-03	9.23703E-02	-3.69556E-02	-5.53640E-02	5.07070E-05
60	54 TO 960	1.84297E+02	1.99950E+01	1.00152E-03	6.73778E-01	-5.17091E-01	-1.56817E-01	-1.29695E-04
61	88 TO 550	4.98027E+02	1.99966E+01	1.00147E-03	6.81879E-01	-9.89208E-02	-5.82874E-01	8.36642E-05
62	55 TO 560	4.98027E+02	1.99973E+01	1.00148E-03	8.22690E-02	-3.69569E-02	-4.53508E-02	-3.87326E-05
63	56 TO 570	4.98027E+02	1.99967E+01	1.00149E-03	1.09769E-01	-4.92756E-02	-6.05260E-02	-3.22981E-05
64	57 TO 580	4.98027E+02	1.99961E+01	1.00149E-03	1.09877E-01	-4.92753E-02	-6.06052E-02	-3.44003E-06
65	58 TO 590	4.98027E+02	1.99956E+01	1.00150E-03	1.01848E-01	-3.69564E-02	-6.48340E-02	5.79884E-05
66	59 TO 600	4.98027E+02	1.99954E+01	1.00150E-03	8.25014E-02	-3.69561E-02	-4.55718E-02	-2.64762E-05
67	60 TO 610	4.98027E+02	1.99949E+01	1.00151E-03	1.19759E-01	-4.92746E-02	-7.04958E-02	-1.09926E-05
68	61 TO 620	4.98026E+02	1.99945E+01	1.00151E-03	1.29485E-01	-4.92743E-02	-8.02601E-02	-4.91154E-05
69	62 TO 630	4.98026E+02	1.99942E+01	1.00152E-03	9.24028E-02	-3.69556E-02	-5.54204E-02	2.67888E-05
70	63 TO 970	4.98026E+02	1.99941E+01	1.00152E-03	6.76221E-01	-5.17091E-01	-1.59237E-01	-1.06768E-04
71	89 TO 640	2.87384E+03	1.99966E+01	1.00147E-03	6.73891E-01	-9.89208E-02	-5.74885E-01	8.44468E-05
72	64 TO 650	2.87384E+03	1.99974E+01	1.00148E-03	8.24014E-02	-3.69569E-02	-4.54844E-02	-3.98132E-05
73	65 TO 660	2.87384E+03	1.99967E+01	1.00149E-03	1.09957E-01	-4.92756E-02	-6.07024E-02	-2.13727E-05
74	66 TO 670	2.87384E+03	1.99961E+01	1.00149E-03	1.10049E-01	-4.92754E-02	-6.07793E-02	-5.85815E-06
75	67 TO 680	2.87384E+03	1.99956E+01	1.00150E-03	1.02880E-01	-3.69564E-02	-6.59127E-02	1.04452E-05
76	68 TO 690	2.87384E+03	1.99954E+01	1.00150E-03	9.28157E-02	-3.69561E-02	-5.58435E-02	1.61411E-05
77	69 TO 700	2.87384E+03	1.99950E+01	1.00151E-03	1.20386E-01	-4.92746E-02	-7.11464E-02	-3.47943E-05
78	70 TO 710	2.87384E+03	1.99946E+01	1.00151E-03	1.30659E-01	-4.92743E-02	-8.13834E-02	1.64871E-06
79	71 TO 720	2.87384E+03	1.99943E+01	1.00152E-03	8.28355E-02	-3.69556E-02	-4.58822E-02	-2.30805E-06
80	72 TO 980	2.87384E+03	1.99942E+01	1.00152E-03	6.76480E-01	-5.17091E-01	-1.59496E-01	-1.07572E-04
81	90 TO 730	3.52639E+03	1.99973E+01	1.00147E-03	6.83660E-01	-9.89206E-02	-5.84698E-01	4.19052E-05
82	73 TO 740	3.52639E+03	1.99980E+01	1.00148E-03	8.15729E-02	-3.69568E-02	-4.46144E-02	1.76917E-06
83	74 TO 750	3.52639E+03	1.99976E+01	1.00149E-03	1.08778E-01	-4.92755E-02	-5.95412E-02	-3.84864E-05
84	75 TO 760	3.52638E+03	1.99971E+01	1.00149E-03	1.08940E-01	-4.92752E-02	-5.96165E-02	4.77880E-05
85	76 TO 770	3.52638E+03	1.99967E+01	1.00150E-03	1.01552E-01	-3.69563E-02	-6.46448E-02	-4.90992E-05
86	77 TO 780	3.52638E+03	1.99965E+01	1.00150E-03	8.17740E-02	-3.69560E-02	-4.48250E-02	-6.93834E-06
87	78 TO 790	3.52638E+03	1.99962E+01	1.00151E-03	1.29038E-01	-4.92745E-02	-7.97206E-02	4.27588E-05
88	79 TO 800	3.52638E+03	1.99960E+01	1.00151E-03	1.29045E-01	-4.92742E-02	-7.98187E-02	-4.76319E-05
89	80 TO 810	3.52638E+03	1.99958E+01	1.00152E-03	8.19604E-02	-3.69555E-02	-4.50034E-02	1.44550E-06
90	81 TO 990	3.52638E+03	1.99957E+01	1.00152E-03	6.61523E-01	-5.17091E-01	-1.44529E-01	-9.67024E-05

91	102 TO 82□	2.24435E+01	1.99987E+01	1.00142E-03	7.39777E-01	-8.66017E-02	-6.53205E-01	-3.00478E-05
92	91 TO 103□	2.24433E+01	2.00215E+01	1.00157E-03	7.38995E-01	-5.94656E-01	-1.44196E-01	1.42752E-04
93	100 TO 83□	1.84283E+02	1.99987E+01	1.00142E-03	7.32329E-01	-8.66018E-02	-6.45743E-01	-1.56795E-05
94	92 TO 101□	1.84281E+02	2.00150E+01	1.00157E-03	7.40114E-01	-5.94657E-01	-1.45313E-01	1.44571E-04
95	100 TO 84□	5.06977E+02	1.99987E+01	1.00142E-03	7.30551E-01	-8.66018E-02	-6.43965E-01	-1.53962E-05
96	93 TO 101□	5.06973E+02	2.00153E+01	1.00157E-03	7.41398E-01	-5.94657E-01	-1.46597E-01	1.43806E-04
97	100 TO 85□	2.88764E+03	1.99987E+01	1.00142E-03	7.03858E-01	-8.66018E-02	-6.17270E-01	-1.38405E-05
98	94 TO 101□	2.88761E+03	2.00141E+01	1.00156E-03	7.42988E-01	-5.94657E-01	-1.48186E-01	1.44414E-04
99	100 TO 86□	3.52610E+03	1.99987E+01	1.00142E-03	7.28548E-01	-8.66017E-02	-6.41965E-01	-1.83356E-05
100	95 TO 101□	3.52607E+03	2.00114E+01	1.00156E-03	7.27907E-01	-5.94657E-01	-1.33097E-01	1.52114E-04
101	102 TO 87□	1.84297E+02	1.99987E+01	1.00142E-03	7.32417E-01	-8.66018E-02	-6.45830E-01	-1.56300E-05
102	96 TO 103□	1.84295E+02	2.00150E+01	1.00157E-03	7.40136E-01	-5.94657E-01	-1.45335E-01	1.44618E-04
103	102 TO 88□	4.98027E+02	1.99987E+01	1.00142E-03	7.22466E-01	-8.66018E-02	-6.35878E-01	-1.38765E-05
104	97 TO 103□	4.98022E+02	2.00136E+01	1.00156E-03	7.43580E-01	-5.94657E-01	-1.48778E-01	1.44472E-04
105	102 TO 89□	2.87384E+03	1.99987E+01	1.00142E-03	7.05221E-01	-8.66018E-02	-6.18633E-01	-1.39670E-05
106	98 TO 103□	2.87382E+03	2.00144E+01	1.00156E-03	7.52844E-01	-5.94657E-01	-1.58043E-01	1.44217E-04
107	102 TO 90□	3.52639E+03	1.99987E+01	1.00142E-03	7.38586E-01	-8.66017E-02	-6.52003E-01	-1.83530E-05
108	99 TO 103□	3.52636E+03	2.00114E+01	1.00156E-03	7.27922E-01	-5.94657E-01	-1.33112E-01	1.52678E-04
109	0 TO 100□	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
110	0 TO 102□	7.10500E+03	2.00000E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00

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EUREKA-ATR/MOD1 (1) THERMAL REACTOR CORE KINETICS CODE
ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR 91-11-23
0 CPU TIME = 62.35

OJUNCTION NUMBER	LIQUID VEL. (M/SEC)	VAPOR VEL. (M/SEC)	JCT. FLOW-L (TON/HR)	JCT. FLOW-G (TON/HR)	SAT. H-L (KCAL/KG)	SAT. H-G (KCAL/KG)	FLOW-WEIGHTED H (KCAL/KG)
1	1.30427E+00	1.30427E+00	2.24435E+01	0.00000E+00	2.00027E+01	0.00000E+00	2.00027E+01
2	1.30431E+00	1.30431E+00	2.24435E+01	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
3	1.30431E+00	1.30431E+00	2.24435E+01	0.00000E+00	2.00006E+01	0.00000E+00	2.00006E+01
4	1.30432E+00	1.30432E+00	2.24435E+01	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
5	1.30433E+00	1.30433E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
6	1.30433E+00	1.30433E+00	2.24435E+01	0.00000E+00	1.99998E+01	0.00000E+00	1.99998E+01
7	1.30434E+00	1.30434E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
8	1.30435E+00	1.30435E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
9	1.30435E+00	1.30435E+00	2.24435E+01	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
10	1.30436E+00	1.30436E+00	2.24435E+01	0.00000E+00	2.00001E+01	0.00000E+00	2.00001E+01
11	1.33866E+00	1.33866E+00	1.84283E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
12	1.33870E+00	1.33870E+00	1.84283E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
13	1.33871E+00	1.33871E+00	1.84283E+02	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
14	1.33872E+00	1.33872E+00	1.84283E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
15	1.33872E+00	1.33872E+00	1.84283E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
16	1.33873E+00	1.33873E+00	1.84283E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
17	1.33873E+00	1.33873E+00	1.84283E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
18	1.33874E+00	1.33874E+00	1.84283E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
19	1.33875E+00	1.33875E+00	1.84283E+02	0.00000E+00	1.99956E+01	0.00000E+00	1.99956E+01
20	1.33876E+00	1.33876E+00	1.84283E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
21	1.33919E+00	1.33919E+00	5.06977E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
22	1.33923E+00	1.33923E+00	5.06977E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
23	1.33923E+00	1.33923E+00	5.06977E+02	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
24	1.33924E+00	1.33924E+00	5.06977E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
25	1.33925E+00	1.33925E+00	5.06977E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
26	1.33925E+00	1.33925E+00	5.06977E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
27	1.33926E+00	1.33926E+00	5.06977E+02	0.00000E+00	1.99961E+01	0.00000E+00	1.99961E+01
28	1.33927E+00	1.33927E+00	5.06977E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
29	1.33927E+00	1.33927E+00	5.06977E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
30	1.33928E+00	1.33928E+00	5.06977E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
31	1.35331E+00	1.35331E+00	2.88764E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
32	1.35335E+00	1.35335E+00	2.88764E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
33	1.35335E+00	1.35335E+00	2.88764E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
34	1.35336E+00	1.35336E+00	2.88764E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
35	1.35337E+00	1.35337E+00	2.88764E+03	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
36	1.35337E+00	1.35337E+00	2.88764E+03	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
37	1.35338E+00	1.35338E+00	2.88764E+03	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
38	1.35339E+00	1.35339E+00	2.88764E+03	0.00000E+00	1.99954E+01	0.00000E+00	1.99954E+01
39	1.35340E+00	1.35340E+00	2.88764E+03	0.00000E+00	1.99951E+01	0.00000E+00	1.99951E+01
40	1.35340E+00	1.35340E+00	2.88764E+03	0.00000E+00	1.99948E+01	0.00000E+00	1.99948E+01
41	1.33061E+00	1.33061E+00	3.52610E+03	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
42	1.33065E+00	1.33065E+00	3.52610E+03	0.00000E+00	1.99986E+01	0.00000E+00	1.99986E+01
43	1.33065E+00	1.33065E+00	3.52610E+03	0.00000E+00	1.99984E+01	0.00000E+00	1.99984E+01
44	1.33066E+00	1.33066E+00	3.52610E+03	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
45	1.33067E+00	1.33067E+00	3.52610E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
46	1.33067E+00	1.33067E+00	3.52610E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
47	1.33068E+00	1.33068E+00	3.52610E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
48	1.33069E+00	1.33069E+00	3.52610E+03	0.00000E+00	1.99967E+01	0.00000E+00	1.99967E+01
49	1.33070E+00	1.33070E+00	3.52609E+03	0.00000E+00	1.99966E+01	0.00000E+00	1.99966E+01
50	1.33070E+00	1.33070E+00	3.52609E+03	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
51	1.33876E+00	1.33876E+00	1.84297E+02	0.00000E+00	2.00002E+01	0.00000E+00	2.00002E+01
52	1.33880E+00	1.33880E+00	1.84297E+02	0.00000E+00	1.99981E+01	0.00000E+00	1.99981E+01
53	1.33881E+00	1.33881E+00	1.84297E+02	0.00000E+00	1.99978E+01	0.00000E+00	1.99978E+01
54	1.33881E+00	1.33881E+00	1.84297E+02	0.00000E+00	1.99973E+01	0.00000E+00	1.99973E+01
55	1.33882E+00	1.33882E+00	1.84297E+02	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
56	1.33883E+00	1.33883E+00	1.84297E+02	0.00000E+00	1.99963E+01	0.00000E+00	1.99963E+01
57	1.33883E+00	1.33883E+00	1.84297E+02	0.00000E+00	1.99962E+01	0.00000E+00	1.99962E+01
58	1.33884E+00	1.33884E+00	1.84297E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
59	1.33885E+00	1.33885E+00	1.84297E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
60	1.33885E+00	1.33885E+00	1.84297E+02	0.00000E+00	1.99955E+01	0.00000E+00	1.99955E+01
61	1.37819E+00	1.37819E+00	4.98027E+02	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
62	1.37823E+00	1.37823E+00	4.98027E+02	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
63	1.37824E+00	1.37824E+00	4.98027E+02	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
64	1.37824E+00	1.37824E+00	4.98027E+02	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
65	1.37825E+00	1.37825E+00	4.98027E+02	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
66	1.37826E+00	1.37826E+00	4.98027E+02	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
67	1.37826E+00	1.37826E+00	4.98027E+02	0.00000E+00	1.99957E+01	0.00000E+00	1.99957E+01
68	1.37827E+00	1.37827E+00	4.98026E+02	0.00000E+00	1.99953E+01	0.00000E+00	1.99953E+01
69	1.37828E+00	1.37828E+00	4.98026E+02	0.00000E+00	1.99950E+01	0.00000E+00	1.99950E+01
70	1.37828E+00	1.37828E+00	4.98026E+02	0.00000E+00	1.99946E+01	0.00000E+00	1.99946E+01

71	1.34684E+00	1.34684E+00	2.87384E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
72	1.34688E+00	1.34688E+00	2.87384E+03	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
73	1.34689E+00	1.34689E+00	2.87384E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
74	1.34690E+00	1.34690E+00	2.87384E+03	0.00000E+00	1.99969E+01	0.00000E+00	1.99969E+01
75	1.34690E+00	1.34690E+00	2.87384E+03	0.00000E+00	1.99964E+01	0.00000E+00	1.99964E+01
76	1.34691E+00	1.34691E+00	2.87384E+03	0.00000E+00	1.99959E+01	0.00000E+00	1.99959E+01
77	1.34691E+00	1.34691E+00	2.87384E+03	0.00000E+00	1.99958E+01	0.00000E+00	1.99958E+01
78	1.34692E+00	1.34692E+00	2.87384E+03	0.00000E+00	1.99954E+01	0.00000E+00	1.99954E+01
79	1.34693E+00	1.34693E+00	2.87384E+03	0.00000E+00	1.99951E+01	0.00000E+00	1.99951E+01
80	1.34694E+00	1.34694E+00	2.87384E+03	0.00000E+00	1.99948E+01	0.00000E+00	1.99948E+01
81	1.33072E+00	1.33072E+00	3.52639E+03	0.00000E+00	2.00007E+01	0.00000E+00	2.00007E+01
82	1.33076E+00	1.33076E+00	3.52639E+03	0.00000E+00	1.99985E+01	0.00000E+00	1.99985E+01
83	1.33076E+00	1.33076E+00	3.52639E+03	0.00000E+00	1.99984E+01	0.00000E+00	1.99984E+01
84	1.33077E+00	1.33077E+00	3.52638E+03	0.00000E+00	1.99979E+01	0.00000E+00	1.99979E+01
85	1.33078E+00	1.33078E+00	3.52638E+03	0.00000E+00	1.99975E+01	0.00000E+00	1.99975E+01
86	1.33078E+00	1.33078E+00	3.52638E+03	0.00000E+00	1.99970E+01	0.00000E+00	1.99970E+01
87	1.33079E+00	1.33079E+00	3.52638E+03	0.00000E+00	1.99970E+01	0.00000E+00	1.99970E+01
88	1.33080E+00	1.33080E+00	3.52638E+03	0.00000E+00	1.99968E+01	0.00000E+00	1.99968E+01
89	1.33080E+00	1.33080E+00	3.52638E+03	0.00000E+00	1.99965E+01	0.00000E+00	1.99965E+01
90	1.33081E+00	1.33081E+00	3.52638E+03	0.00000E+00	1.99962E+01	0.00000E+00	1.99962E+01
91	3.24568E+00	3.24568E+00	2.24435E+01	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
92	1.45641E+00	1.45641E+00	2.24433E+01	0.00000E+00	2.00336E+01	0.00000E+00	2.00336E+01
93	3.33132E+00	3.33132E+00	1.84283E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
94	1.49480E+00	1.49480E+00	1.84281E+02	0.00000E+00	2.00271E+01	0.00000E+00	2.00271E+01
95	3.33257E+00	3.33257E+00	5.06977E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
96	1.49539E+00	1.49539E+00	5.06973E+02	0.00000E+00	2.00274E+01	0.00000E+00	2.00274E+01
97	3.36766E+00	3.36766E+00	2.88764E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
98	1.51117E+00	1.51117E+00	2.88761E+03	0.00000E+00	2.00263E+01	0.00000E+00	2.00263E+01
99	3.31120E+00	3.31120E+00	3.52610E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
100	1.48581E+00	1.48581E+00	3.52607E+03	0.00000E+00	2.00235E+01	0.00000E+00	2.00235E+01
101	3.33157E+00	3.33157E+00	1.84297E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
102	1.49491E+00	1.49491E+00	1.84295E+02	0.00000E+00	2.00271E+01	0.00000E+00	2.00271E+01
103	3.42968E+00	3.42968E+00	4.98027E+02	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
104	1.53895E+00	1.53895E+00	4.98022E+02	0.00000E+00	2.00257E+01	0.00000E+00	2.00257E+01
105	3.35157E+00	3.35157E+00	2.87384E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
106	1.50395E+00	1.50395E+00	2.87382E+03	0.00000E+00	2.00265E+01	0.00000E+00	2.00265E+01
107	3.31147E+00	3.31147E+00	3.52639E+03	0.00000E+00	2.00005E+01	0.00000E+00	2.00005E+01
108	1.48593E+00	1.48593E+00	3.52636E+03	0.00000E+00	2.00235E+01	0.00000E+00	2.00235E+01
109	0.00000E+00	0.00000E+00	7.10500E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01
110	0.00000E+00	0.00000E+00	7.10500E+03	0.00000E+00	2.00000E+01	0.00000E+00	2.00000E+01

IPRTCT = 1

CHANNEL RESULTS

CHANNEL NUMBER	CONNECTING VOLUMES	COOLANT TEMPERATURE (C)	COOLANT VOID FRAC (-)	FUEL TEMPERATURE (C)
1	1 TO 9	1.99099E+01	0.00000E+00	1.99155E+01
2	10 TO 18	1.99058E+01	0.00000E+00	1.99100E+01
3	19 TO 27	1.99057E+01	0.00000E+00	1.99099E+01
4	28 TO 36	1.99051E+01	0.00000E+00	1.99090E+01
5	37 TO 45	1.99071E+01	0.00000E+00	1.99117E+01
6	46 TO 54	1.99058E+01	0.00000E+00	1.99101E+01
7	55 TO 63	1.99052E+01	0.00000E+00	1.99092E+01
8	64 TO 72	1.99051E+01	0.00000E+00	1.99091E+01
9	73 TO 81	1.99072E+01	0.00000E+00	1.99117E+01

```
IN,JM,KM,KMIN,KMAX
23 13 4 1 15
IFT,E1,V1,X1
1 20.009995 0.00000000E+00 0.00000000E+00
FSP,PLP1(L),FP,FSG,FSUB,FD,FHL,FI,FAX,QCPR(L),CQQ,X1
AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
 0.1001E+01 0.2279E-05 0.7189E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00 0.7143E-06 0.0000E+00
 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1000E+01 0.3044E+03 0.2592E+01 0.8800E+00-0.2528E+00 0.1186E+03
IM,JM,KM,KMIN,KMAX
23 13 14 1 15
IFT,E1,V1,X1
2 15.949999 0.00000000E+00 0.00000000E+00
FSP,PLP1(L),FP,FSG,FSUB,FD,FHL,FI,FAX,QCPR(L),CQQ,X1
AJ1,AJ2,S1,S2,S3,S4,ALPF,DLH,PN,PG,XSUB,DPT
 0.8388E+00 0.1586E-05 0.7252E+00 0.9146E+00 0.1070E+01 0.9372E+00 0.1000E+01 0.1000E+01 0.0000E+00 0.0000E+00 0.3315E-07 0.0000E+00
 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.1000E+01 0.3970E+02 0.3122E+01 0.8800E+00-0.2528E+00 0.1186E+03
1  ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR                                                                    91-11-23

                          ********** SUMMARY  TABLE **********

                              MINIMUM CPR ,(I,J,K),L =    0.000, 28, 17, 15,  3

                              MAXIMUM LHGR,(I,J,K),L =    0.000, 25, 15,  3,  3

                              CPR (25,15, 3)         =   99.990

                              LHGR(28,17,15)         =    0.000

 IPRTCT =   1
OPLOT RECORD NUMBER =    26
ORESTART NUMBER     =     5
```

```
 EUREKA-ATR/MOD1          ( 1)                    THERMAL REACTOR CORE KINETICS CODE
      ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR
0 CPU TIME =   62.98
0


  TIMING EDIT    TOTAL TIME =        65.72 SEC

 SUBROUTINE NAME  CPU TIME(SEC)  PERCENT  NO. OF CALLS

      MAIN             0.00        0.00           1
      INPUT           33.48       50.95           1
      TRAN            16.12       24.52           1
      BAL              3.11        4.73         270
      EDIT             4.65        7.07          27
      FLOSRH           1.15        1.76         269
      TSTP             0.18        0.27         269
      PREW             1.74        2.65         271
      SLABHT           4.56        6.94         269
      NIFTE            1.36        2.06         269

                              TIME STEP CONTROL SUMMARY

                        NUMBER OF TIMES TEST CONTROLLED TIME STEP

 UPPER        LOWER        PRESSURE CH.  ZERO FLOW     MASS CH.      ENERGY CH.    MASS          SAT. LINE     OTHER--LO MASS
 LIMIT        LIMIT        /VOLUME       CROSSING      /VOLUME       /VOLUME       VOL. FLOW     CROSSINGS     DEPLETE,AIR CH
0  200          0            202           0             0             0             0             0             0

                          VOLUMES CONTROLLING PRESSURE CHANGE MINIMUM
                              (VOLUME INDEX   TIMES CONTROLLING)

     1   0     2   0     3   0     4   0     5   0     6   0     7   0     8   0     9   0    10   0
    11   0    12   0    13   0    14   0    15   0    16   0    17   0    18   0    19   0    20   0
    21   0    22   0    23   0    24   0    25   0    26   0    27   0    28   0    29   0    30   0
    31   0    32   0    33   0    34   0    35   0    36   0    37   0    38   0    39   0    40   0
    41   0    42   0    43   0    44   0    45   0    46   0    47   0    48   0    49   0    50   0
    51   0    52   0    53   0    54   0    55   0    56   0    57   0    58   0    59   0    60   0
    61   0    62   0    63   0    64   0    65   0    66   0    67   0    68   0    69   0    70   0
    71   0    72   0    73   0    74   0    75   0    76   0    77   0    78   0    79   0    80   0
    81   0    82   0    83   0    84   0    85   0    86   0    87   0    88   0    89   0    90   0
    91   0    92   0    93   0    94   0    95   0    96   0    97   0    98   0    99   0   100   0
   101   0   102   0   103   0

                          JUNCTIONS CONTROLLING FLOW CROSSING MINIMUM
                              (JUNCTION INDEX   TIMES CONTROLLING)

     1   0     2   0     3   0     4   0     5   0     6   0     7   0     8   0     9   0    10   0
    11   0    12   0    13   0    14   0    15   0    16   0    17   0    18   0    19   0    20   0
    21   0    22   0    23   0    24   0    25   0    26   0    27   0    28   0    29   0    30   0
    31   0    32   0    33   0    34   0    35   0    36   0    37   0    38   0    39   0    40   0
    41   0    42   0    43   0    44   0    45   0    46   0    47   0    48   0    49   0    50   0
    51   0    52   0    53   0    54   0    55   0    56   0    57   0    58   0    59   0    60   0
    61   0    62   0    63   0    64   0    65   0    66   0    67   0    68   0    69   0    70   0
    71   0    72   0    73   0    74   0    75   0    76   0    77   0    78   0    79   0    80   0
    81   0    82   0    83   0    84   0    85   0    86   0    87   0    88   0    89   0    90   0
    91   0    92   0    93   0    94   0    95   0    96   0    97   0    98   0    99   0   100   0
   101   0   102   0   103   0   104   0   105   0   106   0   107   0   108   0   109   0   110   0

                              SELECTED PROGRAM PARAMETERS

  GAUSSIAN ELIMINATION CALLS   NUMBER OF TIME STEPS   MAX HEAT SLAB TEMP   MAX HEAT SLAB TEMP   STAGP SONIC CHECK
          THIS EDIT                 THIS EDIT             THIS EDIT          COMPLETE RUN

                202                       202                   68                  68                  0

                                HEAT TRANSFER MODE SUMMARY

     N =      0      1      2      3      4      5      6      7      8      9     10     11     12     13     14     15     16
    F(N)=     0  16362      0      0      0      0      0      0      0      0      0      0      0      0      0      0      0
 F(N+17)=     0      0      0      0      0      0      0      0      0      0      0      0      0      0      0      0
0### SCRAM ACT. ###  PERIOD SHORT (SCRAM)      AT  2.81000E+01 (SEC.)   AFTER  0.00000E+00 (SEC.) DELAY TIME.
0### SCRAM ACT. ###  PERIOD SHORT (ROD-STOP)   AT  2.86500E+01 (SEC.)   AFTER  1.03500E+01 (SEC.) DELAY TIME.
0##### ROD STOP OCCURED AT   2.8700E+01 #####
0##### ROD STOP OCCURED AT   2.8700E+01 #####
0##### ROD STOP OCCURED AT   2.8700E+01 #####
0##### ROD STOP OCCURED AT   2.8700E+01 #####
1

 EUREKA-ATR/MOD1          ( 1)                    THERMAL REACTOR CORE KINETICS CODE
      ATR DEMO. REACTOR(FULL CORE) EUREKA-ATR                                    91-11-23
0 CPU TIME =   65.47
    TIME      NORM POWER   TOTAL REACT CONTROL REAC  VOID REACT  WATER T REAC DOPPLER REAC  PERIOD      F ENTH (C/G- F ENTH (C/G-
       SEC        0            0    *       0    *       0    *       0    *       0    *       0  SEC  SLB  7 U02)  SLB  8 U02)
   26.00000  2.52489E+03  8.61454E-01 8.61048E-01 0.00000E+00 -1.67205E-04 5.73699E-04 6.57384E-01 1.07967E+00 1.07984E+00
   27.00000  1.38775E+04  9.02463E-01 9.02050E-01 0.00000E+00 -1.68377E-04 5.81705E-04 5.24747E-01 1.07956E+00 1.07973E+00
   28.00000  1.17389E+05  9.43471E-01 9.43052E-01 0.00000E+00 -1.69258E-04 5.88052E-04 4.19204E-01 1.07947E+00 1.07962E+00
   29.00000  8.71759E+05  8.51903E-01 8.51481E-01 0.00000E+00 -1.69969E-04 5.91893E-04 1.67566E+00 1.07941E+00 1.07956E+00
   30.00000  4.58534E+04 -2.15631E+00 -2.15674E+00 0.00000E+00 -1.70520E-04 5.95563E-04 -4.46784E-01 1.07936E+00 1.07950E+00
```