



JAEA-Conf

2024-001

DOI:10.11484/jaea-conf-2024-001

**Proceedings of the 12th International Conference on
Nuclear Criticality Safety (ICNC2023)**

October 1-6, 2023,

Sendai International Center, Sendai, Miyagi, Japan

(Eds.) Kenya SUYAMA, Satoshi GUNJI, Tomoaki WATANABE, Shohei ARAKI
Kodai FUKUDA, Kazuya SHIMADA, Tatsuya FUJITA, Taro UEKI
and Hoang Hai NGUYEN

Fuel Cycle Safety Research Division
Nuclear Safety Research Center
Sector of Nuclear Safety Research and Emergency Preparedness

July 2024

Japan Atomic Energy Agency

日本原子力研究開発機構

JAEA-Conf

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(Eds.) Kenya SUYAMA⁺, Satoshi GUNJI, Tomoaki WATANABE, Shohei ARAKI,
Kodai FUKUDA, Kazuya SHIMADA, Tatsuya FUJITA, Taro UEKI and Hoang Hai NGUYEN[✧]

Fuel Cycle Safety Research Division, Nuclear Safety Research Center,
Sector of Nuclear Safety Research and Emergency Preparedness,
Japan Atomic Energy Agency
Tokai-mura, Naka-gun, Ibaraki-ken

(Received May 1, 2024)

The 12th International Conference on Nuclear Criticality Safety (ICNC2023) was held from October 1 to October 6, 2023, at the Sendai International Center (Aobayama, Aoba-ku, Sendai, Miyagi-prefecture 980-0856, Japan), organized by Japan Atomic Energy Agency (JAEA) and co-organized by the Reactor Physics Division of the Atomic Energy Society of Japan (AESJ) and the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development (OECD/NEA). 224 presentations passed peer review and 273 technical session registrations, bringing the total number of registered participants to 289, including accompanying persons. Technical tours were also conducted to i) Fukushima Daiichi Nuclear Power Station of TEPCO holdings and Interim Storage Facility Information Center, ii) Nuclear Science Research Institute of JAEA (STACY Renewable Reactor and FCA), iii) NanoTerasu of Tohoku University (synchrotron radiation facility) and Onagawa Nuclear Power Station of Tohoku Electric Power Co., Inc. This report summarizes the conference and compiles the papers that were presented and agreed to be published in the Proceedings.

Keywords: Criticality Safety, International Conference, ICNC, AESJ Reactor Physics Division, OECD/NEA

+Nuclear Safety Research Center

✧Post-Doctoral Fellow

第 12 回臨界安全性国際会議予稿集
2023 年 10 月 1 日～6 日
宮城県仙台市 仙台国際センター

日本原子力研究開発機構 安全研究・防災支援部門 安全研究センター
燃料サイクル安全研究ディビジョン

(編) 須山 賢也⁺、郡司 智、渡邊 友章、荒木 祥平、福田 航大、島田 和弥、
藤田 達也、植木 太郎、Hoang Hai Nguyen[※]

(2024 年 5 月 1 日受理)

第 12 回臨界安全性国際会議 (ICNC2023) は 2023 年 10 月 1 日から 10 月 6 日に仙台国際センター (〒980-0856 宮城県仙台市青葉区青葉山) において、日本原子力研究開発機構 (原子力機構) の主催、日本原子力学会炉物理部会と経済協力開発機構原子力機関 (OECD/NEA) の共催によって開催された。最終的に査読を通過した 224 件の発表と 273 名のテクニカルセッション参加登録があり、同伴者を含めた総登録数は 289 名であった。テクニカルツアーも i) 東京電力福島第一原子力発電所及び中間貯蔵工事情報センター、ii) 原子力機構原子力科学研究所 (STACY 更新炉及び FCA)、iii) 東北大学ナノテラス (放射光施設) 及び東北電力女川原子力発電所の 3 コースで実施された。会議の概要とともに、発表された論文で予稿集掲載に合意されたものを本報告書に取り纏めた。

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1. Introduction

As Table 1 shows, the International Conference on Criticality Safety (ICNC) is organized every four years in the US, European countries, and Japan.

Table 1: History of the International Conference on Criticality Safety (ICNC)

Year	Venue	Host Country
1981	Los Alamos	USA
1983	Dijon	France
1987	Tokyo	Japan
1991	Oxford	UK
1995	Albuquerque	USA
1999	Versailles	France
2003	Tokai-mura	Japan
2007	St Petersburg	Russia
2011	Edinburgh	UK
2015	Charlotte	USA
2019	Paris	France

The 12th ICNC (ICNC2023), the third round of ICNC organized in Japan, was held from October 1 to October 6, 2023, at the Sendai International Center (Aobayama, Aoba-ku, Sendai, Miyagi-prefecture 980-0856, Japan), organized by JAEA and co-organized by the Reactor Physics Division of the Atomic Energy Society of Japan (AESJ) and the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development (OECD/NEA). 224 presentations passed peer review and 273 technical session registrations, bringing the total number of registered participants to 289, including accompanying persons. Technical tours were also conducted to i) Fukushima Daiichi Nuclear Power Station of TEPCO holdings and Interim Storage Facility Information Center, ii) Nuclear Science Research Institute of JAEA (Modified STACY and FCA), iii) NanoTerasu of Tohoku University (synchrotron radiation facility) and Onagawa Nuclear Power Station of Tohoku Electric Power Co., Inc. This report is a summary of the ICNC2023 and a compilation of the papers that were presented and agreed to be published in the Proceedings.

2. Organizing Committee

Chair

Ken NAKAJIMA Kyoto University*

Members

Go CHIBA	Hokkaido University
Naoto AIZAWA	Tohoku University
Toru OBARA	Tokyo Institute of Technology
Tomohiro ENDO	Nagoya University
Takanori KITADA	Osaka University
Cheol Ho PYEON	Kyoto University
Nozomu FUJIMOTO	Kyushu University
Keisuke YAMAUCHI	TEPCO Holdings
Yoshiaki TSURUTA	TEPCO Holdings
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Satoru HAYAMI	Japan Nuclear Fuel Limited
Yasushi NAUCHI	Central Research Institute of Electric Power Industry
Yamato HAYASHI	Toshiba Energy Systems & Solutions Corporation
Yuichi MORIMOTO	Hitachi GE Nuclear Energy
Yasuhiro HARADA	Mitsubishi Heavy Industries, Ltd.
Hiroaki NAGANO	Nuclear Fuel Industries, Ltd.
Shigeaki AOKI	Mitsubishi Nuclear Fuel, Co., Ltd.
Kenya SUYAMA	Japan Atomic Energy Agency
Taro UEKI	Japan Atomic Energy Agency
Yuichi YAMANE	Japan Atomic Energy Agency
Hiroshi OKUNO	Japan Atomic Energy Agency
Kazuhiko IZAWA	Japan Atomic Energy Agency
Tomoaki WATANABE	Japan Atomic Energy Agency
Shouhei ARAKI	Japan Atomic Energy Agency
Kodai FUKUDA	Japan Atomic Energy Agency
Satoshi GUNJI	Japan Atomic Energy Agency
The late Satoshi SAKURAI	Japan Atomic Energy Agency

*Retired in 2023

3. International Scientific Advisory Committee

Gert VAN DEN EYNDE	SCK-CEN (BELGIUM)
Vladimir KHOTYLEV	Canadian Nuclear Safety Commission (CANADA)
Anssu RANTA-AHO	Teollisuuden Voima Oyj (FINLAND)
Karin RANTAMAKI	Radiation and Nuclear Safety Authority (FINLAND)
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Coralie CARMOUZE	CEA Cadarache (FRANCE)
Axel HOEFER	Framatome GmbH (GERMANY)
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Dirk SCHULZE GRACHTRUP	Bundesamt für die Sicherheit der nuklearen Entsorgung (BASE)(GERMANY)
Maik STUKE	BGZ Gesellschaft für Zwischenlagerung (GERMANY)
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Agnieszka BOETTCHER	National Centre for Nuclear Research (POLAND)
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Dennis MENNERDAHL	E. Mennerdahl Systems (SWEDEN)
Stefano CARUSO	Kernkraftwerk Gösgen-Däniken AG (NPP)(SWITZERLAND)
Alexander VASILIEV	Paul Scherrer Institut (SWITZERLAND)
Sonny GAN	SELLAFIELD LTD. (UNITED KINGDOM)
Gregory O'CONNOR	Office for Nuclear Regulation (UNITED KINGDOM)
Catherine PERCHER	Lawrence Livermore National Laboratory (UNITED STATES)
Doug BOWEN	Oak Ridge National Laboratory (UNITED STATES)
William MARSHALL	Oak Ridge National Laboratory (UNITED STATES)
Julie-Fiona MARTIN	OECD Nuclear Energy Agency
Tatiana IVANOVA	OECD Nuclear Energy Agency
Takanori KITADA	Osaka University (JAPAN)
Kazufumi TSUJIMOTO	Japan Atomic Energy Agency (JAPAN)
Satoshi GUNJI	Japan Atomic Energy Agency (JAPAN)

4. Technical Program Committee

Chair

Tomohiro ENDO Nagoya University

Members

Kenichi TADA	Japan Atomic Energy Agency
Go CHIBA	Hokkaido University
Satoshi TAKEDA	Osaka University
Masahiro FUKUSHIMA	Japan Atomic Energy Agency
Tatsuya FUJITA	Nuclear Regulation Authority
Kento YAMAMOTO	Nuclear Fuel Industries
Yasuhiro HARADA	Mitsubishi Heavy Industries
Yuichi YAMANE	Japan Atomic Energy Agency
Cheol Ho PYEON	Kyoto University
Hiroki TAKEZAWA	Nagaoka University of Technology
Naoto AIZAWA	Tohoku University, Japan
Yasushi NAUCHI	Central Research Institute of Electric Power Industry
Masahiro TATSUMI	Nuclear Engineering
Taro UEKI	Japan Atomic Energy Agency
Tomoaki WATANABE	Japan Atomic Energy Agency
Shouhei ARAKI	Japan Atomic Energy Agency
Kodai FUKUDA	Japan Atomic Energy Agency
Satoshi GUNJI	Japan Atomic Energy Agency

5. Track Leaders

Track 1: Codes and Other Calculation Methods

Andrea ZOIA (CEA, France)

Taro UEKI (JAEA, Japan)

Track 2: Nuclear Data

Coralie CARMOUZE (CEA, France)

Kenichi TADA (JAEA, Japan)

Track 3: Uncertainty and Sensitivity Analysis

Axel HOEFER (Framatome GmbH, Germany)

Go CHIBA (Hokkaido Univ., Japan)

Satoshi TAKEDA (Osaka Univ., Japan)

Track 4: Measurements, Experiments, and Benchmarks

Catherine PERCHER (LLNL, USA)

Masahiro FUKUSHIMA (JAEA, Japan)

Track 5: Standards, Assessment Methodology, and Regulations

Gregory O'CONNOR (ONR, UK)

Tatsuya FUJITA (Nuclear Regulation Authority, Japan)

Track 6: Operational Practices and Safety Cases

Mark DEHART (INL, USA)

Kento YAMAMOTO (Nuclear Fuel Industries, Japan)

Track 7: Storage, Transport, and Disposal Issues

Dimitri ROCHMAN (PSI, Switzerland)

Yasuhiro HARADA (Mitsubishi Heavy Industries, Japan)

Track 8: Criticality Accidents and Incidents

Matthew EATON (Imperial College London, UK)

Yuichi YAMANE (JAEA, Japan)

Track 9: Professional Development Issues and Training

John MILLER (SNL, USA)

Pyeon Cheol Ho (Kyoto Univ., Japan)

Hiroki TAKEZAWA (Nagaoka Univ. of Tech., Japan)

Track 10: Future Challenges

Julie-Fiona MARTIN (OECD/NEA, International org.)

Naoto AIZAWA (Tohoku Univ., Japan)

Special Session 1: Fukushima Dai-ichi NPS

Aurélie BARDELAY (IRSN, France)

Yasushi NAUCHI (CRIEPI, Japan)

Special Session 2: Machine Learning, Deep Learning

Alexander VASILIEV (PSI, Switzerland)

Masahiro TATSUMI (Nuclear Engineering, Japan)

6. List of Reviewers

Eric ABOUD	LLNL
Naoto AIZAWA	Tohoku University
Thomas ALBERT	Framatome
Kelly E ALDRICH	LANL
Kelsey AMUNDSON	LANL
Shigeaki AOKI	MNF
Shouhei ARAKI	JAEA
Kaushik BANERJEE	PNNL
Aurelie BARDELAY	IRSN
John Darrell BESS	JFoster & Associates, LLC
Agnieszka BOETTCHER	National Centre for Nuclear Research
Douglas G. BOWEN	ORNL
Mariya BROVCHENKO	IRSN
David BROWN	BNL
Andrew Charles BUCHAN	AWE Plc
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Katrina CHRISTAKI	Cerberus Nuclear
Justin CLARITY	PNNL
Theresa CUTLER	LANL
Sam DARBY	ONR
Charlotte DAVIS	Nuclear Transport Solutions
Mark DEHART	INL
Aurelien DORVAL	CEA
Matthieu DULUC	IRSN
Mathieu DUPONT	ORNL
Matthew EATON	Imperial College London
Tomohiro ENDO	Nagoya University
Luca FIORITO	SCK CEN
Eoin FLANNERY	ONR
Nozomu FUJIMOTO	Kyushu University
Tatsuya FUJITA	NRA
Kodai FUKUDA	JAEA
Masahiro FUKUSHIMA	JAEA
Travis GREENE	ORNL
Satoshi GUNJI	JAEA
Yasuhiro HARADA	MHI
Stewart HAY	Cerberus Nuclear

Yamato HAYASHI	Toshiba ESS
David P. HEINRICHS	LLNL
Maik HENNEBACH	Orano NCS GmbH
Deborah HILL	UKNNL
Tetsushi HINO	Hitachi
Axel HOEFER	Framatome GmbH
Jesson D HUTCHINSON	LANL
Germina ILAS	ORNL
Daiichiro ITO	Nuclear Fuel Transport Co., Ltd.
Hiroki IWAMOTO	JAEA
Kazuhiko IZAWA	JAEA
Ryota KATANO	JAEA
Gregory J. KEEFER	LLNL
Robert KILGER	GRS
Rei KIMURA	Toshiba ESS
Bernd KLUVER	TUV NORD EnSys GmbH & Co. KG
Ryoichi KONDO	JAEA
Georgios KYRIAZIDIS	CEA
Michael LAGET	CEA
Dale LANCASTER	Nuclear Consultants
Luiz LEAL	IRSN
Yi-Kang LEE	CEA-Saclay
Peng Hong LIEM	NAIS
Clement LOPEZ	CEA
Marat MARGULIS	School of Computer Science and Electronic Engineering
William B.J. MARSHALL	ORNL
Julie-Fiona MARTIN	OECD/NEA
Shuhei MARUYAMA	JAEA
George E. MCKENZIE	LANL
Walid METWALLY	ORNL
Rick MIGLIORE	ORANO
John MILLER	SNL
Yuichi MORIMOTO	Hitachi GE Nuclear Energy
Jeremy MUNSON	U.S. NRC
Hiroaki NAGANO	NFI
Yasunobu NAGAYA	JAEA
Makoto NAKANO	MHI
Prakash NARAYANAN	ORANO, TN
Toshihiro NATSUME	MHI NS engineering
Yasushi NAUCHI	CRIEPI
Hai Hoang NGUYEN	JAEA
Tangi NICOL	CEA
Kenji NISHIHARA	JAEA
Gilles NOGUERE	CEA
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Shoichiro OKITA	JAEA
Hiroshi OKUNO	JAEA
Pedro M ORTEGO	Science Engineering Associates
Tom PAGE	Cerberus Nuclear
Liam PAYNE	Nuclear Waste Services
Imre PAZSIT	Chalmers University of Technology
Yannick PENELIAU	CEA
Catherine PERCHER	LLNL
Patrick PIN	Orano Recyclage
Michael PRIGNIAU	CEA
Susanne PUDOLLEK	Nagra
Derek PUTLEY	Independent Criticality Consultant
Olivier RAVAT	ORANO
Kristina REED	ORNL
Simon David RICHARDS	Jacobs
Michael Evan RISING	LANL
Dimitri ROCHMAN	PSI
Benjamin RUPRECHT	Federal Office for the Safety of Nuclear Waste Management
Mark SAVAGE	Urenco UK Limited
Peter SCHILLEBEECKX	European Commission
IRWAN LIAPTO SIMANULLANG	Kyushu University
Kenya SUYAMA	JAEA
Motomu SUZUKI	CRIEPI
Kenichi TADA	JAEA
Satoshi TAKEDA	Osaka University
Hiroki TAKEZAWA	Nagaoka University of Technology
Aaron TAMASHIRO	LLNL
Masahiro TATSUMI	NEL
Kotaro TONOIKE	JAEA
Kazufumi TSUJIMOTO	JAEA
Kosuke TSUJITA	Nuclear Engineering, Ltd.
Toby TYAS	Cerberus Nuclear
Taro UEKI	JAEA
Timothy VALENTINE	ORNL
Gert VAN DEN EYNDE	SCK CEN
Steven C. VAN DER MARCK	Nuclear Research and Consultancy Group
Alexander VASILIEV	PSI
Jack VENNOR	NCS Risk Management
Satoshi WADA	Toshiba ESS
Tomoaki WATANABE	JAEA
Stuart WATSON	3T Safety Consultants
Ben WEBBORN	Webborn Nuclear Safety Consultants Limited
Robert Allen WELDON	LANL

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Dominic WINSTANLEY
Akio YAMAMOTO
Kento YAMAMOTO
Toshihiro YAMAMOTO
Yuichi YAMANE
Kenji YOKOYAMA
Kenichi YOSHIOKA
Michael Leigh ZERKLE
Andrea ZOIA

BWXT
Sellafield Ltd
Nagoya University
NFI
Kyoto University
JAEA
JAEA
Toshiba ESS
Naval Nuclear Laboratory
CEA

7. Management Board

Ken NAKAJIMA	Kyoto University*
Naoto AIZAWA	Tohoku University
Yasushi NAUCHI	Central Research Institute of Electric Power Industry
Satoshi GUNJI	Japan Atomic Energy Agency
Taro UEKI	Japan Atomic Energy Agency
Tomoaki WATANABE	Japan Atomic Energy Agency
Shouhei ARAKI	Japan Atomic Energy Agency
Kodai FUKUDA	Japan Atomic Energy Agency
Kazuya SHIMADA	Japan Atomic Energy Agency
Yuichi YAMANE	Japan Atomic Energy Agency
Kazuhiko IZAWA	Japan Atomic Energy Agency
Kenya SUYAMA	Japan Atomic Energy Agency

*Retired in 2023

8. General Program

OPENING PLENARY

8:30-10:45, October 2, 2023

General remarks by management board of ICNC2023 organizing committee

Dr. Kenya SUYAMA

Head of Fuel Cycle Safety Research Division, Head of Criticality Safety Research Group, Japan Atomic Energy Agency

Welcome address by the chair of the organizing committee of ICNC2023

Dr. Ken NAKAJIMA

Professor Emeritus, Kyoto University

Welcome address by the chair of the technical program committee of ICNC2023

Dr. Tomohiro ENDO

Associate Professor, Nagoya University

Welcome address by the organizer of ICNC2023

Dr. Hiroyuki OIGAWA

Executive Director, Japan Atomic Energy Agency

Welcome address by the co-organizers

Dr. Ian HILL

Deputy Head of NEA Division of Nuclear Science and Education

Welcome address by the co-organizers

Dr. Takanori KITADA

Professor, Osaka University, Chair of Reactor Physics Division of Atomic Energy Society of Japan

Welcome message by host city, Sendai

Technical Presentations Chaired by Ken NAKAJIMA

Criticality Safety for Decommissioning of Fukushima Daiichi Nuclear Power Station

Dr. Yasunori YAMANAKA

Director of Nuclear Damage Compensation and Decommissioning Facilitation Corporation

Study on the Basic Core Analysis of the New STACY

Dr. Satoshi GUNJI

Principal Researcher, Manager of Criticality Safety Research Laboratory of Japan Atomic Energy Agency

The NEA's Working Party on Nuclear Criticality Safety: Tackling Global Challenges through International Cooperation

Dr. Julie-Fiona Martin

Administrator, Secretariat of the Working Party on Nuclear Criticality Safety of the Organization of Economic Cooperation and Development, Nuclear Energy Agency

OFFICIAL DINNER

October 3, 2023

Hotel Metropolitan Sendai

Opening remarks

Dr. Ken NAKAJIMA

Chair of the Organizing Committee of ICNC2023,
Professor Emeritus, Kyoto University

Welcome address

Dr. Yuichi NIIBORI

President of the Atomic Energy Society of Japan
Professor, Head of the Department of Quantum Science and Energy Engineering, Graduate School of Engineering, Tohoku University

Kagami-Biraki

Provided by the Diamond Sponsor – IRSN, France

Official Speech - "*Short Comment of Retired Old Boy*"

Mr. Iwao KOBAYASHI

Former Director of the Nuclear Fuel Cycle Safety Research Division, Former Leader of Criticality Safety Research Laboratory, Japan Atomic Energy Research Institute (JAERI)

CLOSING PLENARY

11:05-12:45, October 5, 2023

Report from the Track Leaders

Chaired by Dr. Tomohiro ENDO
Chair of the Technical Program Committee of ICNC2023,
Associate Professor, Nagoya University

Announcement from the local organizer

Dr. Kenya SUYAMA
Japan Atomic Energy Agency

Closing Remarks

Dr. Catherine Percher
Lawrence Livermore National Laboratory

Announcement of the next ICNC, ICNC2027 in the United Kingdom

Dr. Deborah Hill
National Nuclear Laboratory
Dr. Greg O'Connor
Office for Nuclear Regulation

9. Technical Tours

Ibaraki / JAEA Tokai Course

8:00 Departure from JR Sendai Station East Gate
Bus: Expressway (SENDAI-HIGASHI IC) – (HITACHI-MINAMI-OTA IC)

12:00-12:50 Lunch at restaurant

13:10-16:30 JAEA Facilities (STACY・FCA) 【Visit】

Bus: Expressway (HITACHI-MINAMI-OTA IC) - (SENDAI-HIGASHI IC)

20:30 Arrive at JR Sendai Station East Exit

JAEA staff on the bus

Satoshi GUNJI, Kazuhiko IZAWA and Shouhei ARAKI

Fukushima / Fukushima Daiichi NPS

7:30 Departure from JR Sendai Station East Gate
Bus: Expressway (SENDAI-HIGASHI IC) – (OKUMA IC)

**9:30-10:45 Interim Storage Facility Information Center 【Visit】
(Takatsudo Screening Spot)**

11:15-12:00 Lunch at restaurant

12:30-16:10 TEPCO Decommissioning Archive Center
※By Local private car to and from 1F
Fukushima Daiichi Nuclear Power Station (1F) 【Visit】
※By Local private car to and from 1F
TEPCO Decommissioning Archive Center

Bus: Expressway (JOBAN-TOMIOKA IC) – (SENDAI-HIGASHI IC)

18:30 Arrive at JR Sendai Station East Exit

JAEA staff on the bus

Yuichi YAMANE, Tomoaki WATANABE, Kodai FUKUDA and Kotaro TONOIKE

Miyagi / NanoTerasu and Onagawa NPS

8:30 Departure JR Sendai Station East Gate

9:30-10:10 NanoTerasu 【Visit】

Bus: Expressway (SENDAI-HIGASHI IC) - (ISHINOMAKI-ONAGAWA IC)

12:00-13:00 Lunch at restaurant

13:30-16:30 Onagawa Nuclear Power Station 【Visit】

Bus: Expressway (ISHINOMAKI-ONAGAWA IC) – (SENDAI-HIGASHI IC)

18:30 Arrive at JR Sendai Station East Exit

JAEA staff on the bus

Kenya SUYAMA, Taro UEKI and Kazuya SHIMADA

10. NEA Workshop

14:00-16:30, October 1, 2023

Room 2

Provide participants with an opportunity for a hands-on training course covering NEA software. Participants will learn how to use the efficiency use the Database for ICSBEP (DICE), the how the Nuclear Data Sensitivity Tool (NDsAT) can be used to estimate how integral benchmark predictions will respond to changes in nuclear data.

Animators: Ian Hill (NEA) and Julie-Fiona Martin (NEA)
Requirement: Laptop computer (Win, Mac)
Fee: Free of charge
Capacity: 20-30 people
How to apply: Apply through the submission system (fully booked; August 25)

11. Technical Program; day by day

Monday, October 2	Tuesday, October 3	Wednesday, October 4	Thursday, October 5
8:00–8:30, Coffee <i>Exhibition Hall 1</i>			
8:30–11:00, Plenary Session <i>Exhibition Hall 2</i>	8:30–10:35, Session 4 <i>Room 1: Track 1, Codes and Other Calculation Methods</i> <i>Room 2: Track 8, Criticality Accidents and Incidents</i> <i>Room 3: Track 6, Operational Practices and Safety Cases</i> <i>Room 4: Track 5, Standards, Assessment Methodology, Regulations</i>	8:30–10:35, Session 7 <i>Room 1: Track 1, Codes and Other Calculation Methods</i> <i>Room 2: Track 7, Storage, Transport, and Disposal Issues</i> <i>Room 3: Track 9, Professional Development Issues and Training</i> <i>Room 4: Track 4, Measurements, Experiments, and Benchmarks</i>	8:30–10:35, Session 11 <i>Room 1: Track 3, Uncertainty and Sensitivity Analysis</i> <i>Room 2: Track 7, Storage, Transport, and Disposal Issues</i> <i>Room 3: Special Session 2, Machine Learning, Deep Learning</i>
10:35–11:05, Coffee <i>Exhibition Hall 1</i>			
11:00–11:30, Coffee <i>Exhibition Hall 1</i>	11:05–12:45, Session 5 <i>Room 1: Track 1, Codes and Other Calculation Methods</i> <i>Room 2: Track 7, Storage, Transport, and Disposal Issues</i> <i>Room 3: Track 4, Measurements, Experiments, and Benchmarks</i> <i>Room 4: Track 5, Standards, Assessment Methodology, Regulations</i>	11:05–12:45, Session 8 <i>Room 1: Track 1, Codes and Other Calculation Methods</i> <i>Room 2: Track 7, Storage, Transport, and Disposal Issues</i> <i>Room 3: Track 9, Professional Development Issues and Training</i> <i>Room 4: Track 4, Measurements, Experiments, and Benchmarks</i>	11:05–12:45, Closing Session <i>Exhibition Hall 2</i>
11:30–12:45, Session 1 <i>Room 1: Track 2, Nuclear Data</i> <i>Room 2: Track 8, Criticality Accidents and Incidents</i> <i>Room 3: Track 6, Operational Practices and Safety Cases</i> <i>Room 4: Special Session 1, Fukushima Dai-Ichi Nuclear Power Plant</i>			
12:45–14:00, Lunch <i>Exhibition Hall 1</i>			

Monday, October 2	Tuesday, October 3	Wednesday, October 4
<p>14:00–15:40, Session 2 <i>Room 1: Track 2, Nuclear Data</i> <i>Room 2: Track 8, Criticality Accidents and Incidents</i> <i>Room 3: Track 6, Operational Practices and Safety Cases</i> <i>Room 4: Special Session 1, Fukushima Dai-Ichi Nuclear Power Plant</i></p>	<p>14:00–16:05, Session 6 <i>Room 1: Track 2, Nuclear Data</i> <i>Room 2: Track 7, Storage, Transport, and Disposal Issues</i> <i>Room 3: Track 6, Operational Practices and Safety Cases</i> <i>Room 4: Track 4, Measurements, Experiments, and Benchmarks</i></p>	<p>14:00–15:40, Session 9 <i>Room 1: Track 3, Uncertainty and Sensitivity Analysis</i> <i>Room 2: Track 7, Storage, Transport, and Disposal Issues</i> <i>Room 3: Track 10, Future Challenges</i> <i>Room 4: Track 4, Measurements, Experiments, and Benchmarks</i></p>
<p>15:40–16:10, Coffee <i>Exhibition Hall 1</i></p>	<p>16:05–16:10, Coffee <i>Exhibition Hall 1</i></p>	<p>15:40–16:10, Coffee <i>Exhibition Hall 1</i></p>
<p>16:10–17:50, Session 3 <i>Room 1: Track 1, Codes and Other Calculation Methods</i> <i>Room 2: Track 8, Criticality Accidents and Incidents</i> <i>Room 3: Track 6, Operational Practices and Safety Cases</i> <i>Room 4: Special Session 1, Fukushima Dai-Ichi Nuclear Power Plant</i></p>	<p>16:10–17:50, Poster Session <i>Exhibition Hall 1</i></p>	<p>16:10–17:50, Session 10 <i>Room 1: Track 3, Uncertainty and Sensitivity Analysis</i> <i>Room 2: Track 7, Storage, Transport, and Disposal Issues</i> <i>Room 3: Track 10, Future Challenges</i> <i>Room 4: Track 4, Measurements, Experiments, and Benchmarks</i></p>

12. Technical Program in Detail

Session 1: MONDAY, OCTOBER 2, 11:30 – 12:45

<p>Room 1 Track 2 NUCLEAR DATA</p> <p>Chairs: Shoichiro Okita (JAEA), Michael L. Zerkle (Naval Nuclear Lab.)</p>	<p>Room 2 Track 8 CRITICALITY ACCIDENTS AND INCIDENTS</p> <p>Chairs: Yuichi Yamane (JAEA), Matthieu Duluc (Framatome)</p>	<p>Room 3 Track 6 OPERATIONAL PRACTICES AND SAFETY CASES</p> <p>Chairs: Georgios Kyriazidis (CEA), Andrew Charles Buchan (AWE)</p>	<p>Room 4 Special Session 1 FUKUSHIMA DAI-ICHI NUCLEAR POWER PLANT</p> <p>Chairs: Jesson Hutchinson (LANL), Yasushi Nauchi (CRIEPI)</p>
<p>Thermal Neutron Scattering Law of UBe_{13} and $PuBe_{13}$ <i>J.L. Wormald, M.L. Zerkle</i></p>	<p>Completion of the CEA Guide for Criticality Accident Studies <i>Michael Laget, Francis Barbry</i></p>	<p>APM Reprocessing Facility – Dismantling of Hot Cells Dedicated to Uranium and Plutonium Purification – Criticality Safety Case <i>Laurent Cholvy, Frédéric Antegnard, Koalyann Nuon et al.</i></p>	<p>Impact on Criticality of Using Pure Water with Corium coming from Nuclear Reactor Core Melting <i>Aurèlie Bardelay, Wilfried Monange</i></p>
<p>Molecular Dynamics Analysis of Reactor Graphite for Preparing Thermal Neutron Scattering Law <i>Shoichiro Okita, Minoru Goto</i></p>	<p>More Critiques of Historical Criticality Accidents through the Lens of Behavioral Economics <i>Brittany Williamson</i></p>	<p>Strategic Characterisation to Support the Development of Criticality Safety Assessments for Decommissioning <i>B. J. Greenhalgh, T. Page</i></p>	<p>Criticality Assessment Assuming Spent Fuel Failure at Fukushima Daiichi Nuclear Power Plant Unit 1 <i>Takahiro Koide, Takashi Yoshii, Keita Fukawa</i></p>
<p>Impact of Light Water Covariance on Integral Benchmarks <i>Chris W. Chapman, Doro Wiarda, B.J. Marshall</i></p>	<p>The Nuclear Criticality Accident in Japan, Revisited <i>Hiroshi Okuno, Kenya Suyama</i></p>	<p>Phenix – The Neutronography Reactor and Its Auxiliary Circuits – Criticality Safety Issues <i>Laurent Cholvy, Quentin Simon, Nadine Bonny et al.</i></p>	<p>Features of Fukushima Daiichi Nuclear Power Plant Accident and Information on Fuel Debris Obtained from PCV Internal <i>Kenji Owada, Masakuni Kumeda, Takeshi Honda et al.</i></p>

Session 2: MONDAY, OCTOBER 2, 14:00 – 15:40

<p>Room 1 Track 2 NUCLEAR DATA</p> <p>Chairs: Dimitri Alexandre Rochman (PSI) Tomoaki Watanabe (JAEA)</p>	<p>Room 2 Track 8 CRITICALITY ACCIDENTS AND INCIDENTS</p> <p>Chairs: Hiroshi Okuno (JAEA) Michael Laget (CEA)</p>	<p>Room 3 Track 6 OPERATIONAL PRACTICES AND SAFETY CASES</p> <p>Chairs: Andrew B. Smiley (LANL) Amy Elizabeth van der Vyver (Sellafield)</p>	<p>Room 4 Special Session 1 FUKUSHIMA DAI-ICHI NUCLEAR POWER PLANT</p> <p>Chairs: Aurélie Bardelay (IRSN) Yasushi Nauchi (CRIEPI)</p>
<p>Automated, Reproducible Data Processing, Verification, and Validation at the NEA <i>Andrew Holcomb, Daniela Foligno, Michael Fleming</i></p>	<p>A New Analysis of the Windscale Criticality Accident Using Monte-Carlo Code MONK <i>Emma Sayce, Neil Harris, Nathan Sayle</i></p>	<p>JHR Fuel Storage Pool Criticality Safety Analysis <i>Eric Fillastre, Georges Kyriazidis, Manuel Bergman et al.</i></p>	<p>Criticality Control Method for Fuel Debris Retrieval in Fukushima Daiichi NPP <i>Yasuhiro Harada, Makoto Nakano, Yamato Hayashi et al.</i></p>
<p>The TENDL Nuclear Data Library: For Criticality Calculations and More <i>D. Rochman, A.J. Koning, S.C. van der Marck</i></p>	<p>Multiphysics Analysis of Reactivity Changes due to Solution Flow in the Past Criticality Accident at Windscale Works in 1970 <i>Kodai Fukuda, Yuichi Yamane</i></p>	<p>Providing a Criticality Warning System Omission Case for a Legacy Reactor Facility at AWE <i>Essam Mohammed, Mark A Roydhouse</i></p>	<p>Development of Criticality Approach Monitoring Method Using Neutron Detectors for Fuel Debris Retrieval in Fukushima Dai-ichi NPP <i>Yamato Hayashi, Makoto Nakano, Yuichi Morimoto</i></p>
<p>Comparison of Neutronic Characteristics of BWR Burnup Fuel between JENDL-4.0 and JENDL-5 <i>Tomoaki Watanabe, Kenichi Tada, Tomohiro Endo et al.</i></p>	<p>Preliminary analysis of GODIVA supercritical transient behaviors by using the Multi-region Integral Kinetic code including delayed neutron effect <i>Hiroki Takezawa, Toru Obara</i></p>	<p>Criticality Safety Analysis of the RECUMO Project <i>Gert Van den Eynde, Mireille Gysemans, Marijke Geerts et al.</i></p>	<p>Investigation of Sub-criticality Monitoring System Based on Feynman-alpha Method for Large-Scale Fuel Debris <i>Satoshi Wada, Makoto Shimizu, Yamato Hayashi et al.</i></p>
<p>Comparison of Calculated Bare Critical Masses between Two Versions of the Japanese Evaluated Nuclear Data Library, JENDL-5 and JENDL-4.0 <i>Akito Oizumi</i></p>	<p>Sensitivity Analysis of the Parameters in Consequence Analysis of Postulated Fuel Debris Criticality Accident in Fukushima Dai-ichi NPP <i>Yuichi Yamane, Kenya Suyama</i></p>	<p>EPEE: A Tool to Compare the Moderating Efficiency of a Material to the One of Water <i>Aurélien Dorval, David Noyelles, Michaël Prigniau et al.</i></p>	<p>Detector Shielding-Moderator Design Effect to Eigenvalue Estimation Results Based on Feynman-a Method <i>Rei Kimura, Yamato Hayashi, Makoto Shimizu</i></p>

Session 3: MONDAY, OCTOBER 2, 16:10 – 17:50

<p>Room 1 Track 1 CODES AND OTHER CALCULATION METHODS Chairs: Michael Rising (LANL) Yasunobu Nagaya (JAEA)</p>	<p>Room 2 Track 8 CRITICALITY ACCIDENTS AND INCIDENTS Chairs: Emma Louise Sayce (UKNNL) Kodai Fukuda (JAEA)</p>	<p>Room 3 Track 6 OPERATIONAL PRACTICES AND SAFETY CASES Chairs: Tom Page (Cerberus Nuclear) Laurent Cholvy (CEA)</p>	<p>Room 4 Special Session 1 FUKUSHIMA DAI-ICHI NUCLEAR POWER PLANT Chairs: Catherine Percher (LLNL) Yasushi Nauchi (CRIEPI)</p>
<p>Novel Methods in MONK for Criticality Modelling in Highly Disordered Random Heterogeneous Media <i>Jessica Fildes, Richard Hiles, Brian Jones et al.</i></p>	<p>Generalized CAAS Probe Positioning Methodology for a Variety of Fissile Material Processes <i>Adrien Gallozzi Ulmann, Prosper Liu, Sasha Philips et al.</i></p>	<p>Review of the Facility Criticality Safety Manager Role at AWE <i>Andrew Buchan, Christopher Hodgkinson, Paul Holloway et al.</i></p>	<p>Development of the Fuel Debris Criticality Characteristics Measurement System <i>Jun Nishiyama, Seiya Manabe, Hideki Harano et al.</i></p>
<p>Random Media Criticality Analysis Methods in Monte Carlo Solver Solomon <i>Taro Ueki</i></p>	<p>Criticality Accident Alarm System Modeling for the Uranium Processing Facility <i>M. Buttrey, S. Goluoglu, K. Reynolds</i></p>	<p>Dealing with the Past and Present – Criticality Safety Considerations Associated with Residues Clean-up at the NNL Preston Laboratory <i>Deborah Hill, Lauren Flint, Martin Watson et al.</i></p>	<p>Estimation of ²³⁵U Enrichment by Neutron Induced Gamma Ray Spectroscopy <i>Yasushi Nauchi, Shunsuke Sato, Motomu Suzuki et al.</i></p>
<p>Overview of NEA/WPNCS Activities on Criticality Problems in Random Media <i>Andrea Zoia, Jessica Fildes, Brian Jones et al.</i></p>	<p>Using MCNP to Predict Effects of a Postulated Criticality Accident on Personal Dosimetry <i>Mark N Neeley, Krista I Kaiser, Matthew M. Conrady</i></p>	<p>Criticality Control Flow Diagram: Your NCS Assessment in One Diagram <i>Grégory Caplin, Raphaël Reynaud, Gilles Neron de Surgy</i></p>	<p>Critical Assemblies in JAEA and the Role of the New STACY <i>Hiroki Sono, Kazuhiko Izawa, Tsutomu Yoritsune et al.</i></p>
<p>Method for Criticality Calculations and Estimation of the Fissile Mass Based on the Theory of Multiplicity Counting <i>Imre Pázsit, Victor Dykin, Senada Avdič</i></p>	<p>Criticality Safety Evaluation of High Radioactive Liquid Waste during the Evaporation to Dryness Process at Tokai Reprocessing Plant <i>Takatomo Miura, Atsunari Kudo, Daisuke Koyama et al.</i></p>	<p>Criticality Safety Officer Program at Technical Area 55 in Los Alamos National Laboratory <i>Leah Berman, David Kimball, James Bunsen</i></p>	<p>Debris-Simulated Core Analysis under Fuel Procurement Constraints in New STACY Experiments <i>Shouhei Araki, Satoshi Gunji, Yu Arakaki et al.</i></p>

Session 4: TUESDAY, OCTOBER 3, 8:30 – 10:35

<p>Room 1 Track 1 CODES AND OTHER CALCULATION METHODS</p> <p>Chairs: Simon Richards (Jacobs) Kenichi Yoshioka (Toshiba ESS)</p>	<p>Room 2 Track 8 CRITICALITY ACCIDENTS AND INCIDENTS</p> <p>Chair: Mark N. Neeley (PNNL) Hiroki Takezawa (Nagaoka Univ. of Tech.)</p>	<p>Room 3 Track 6 OPERATIONAL PRACTICES AND SAFETY CASES</p> <p>Chairs: Essam Mohammed (AWE) Gert Van den Eynde (SCK CEN)</p>	<p>Room 4 Track 5 STANDARDS, ASSESSMENT METHODOLOGY, REGULATIONS</p> <p>Chairs: Alexander Lang (ORNL) David Noyelles (CEA)</p>
<p>Verification and Validation of the New MCNP6.3 Criticality Features <i>Michael E. Rising, Alexander R. Clark, Jennifer L. Alwin</i></p>	<p>IRSN Progress on Emergency Preparedness and Response in Case of Criticality Accident <i>Julien Rannou, Gaël Loubert</i></p>	<p>Challenges in the Development of the Metal Purification Process at Y-12 <i>Benjamin Martin, Tom Young, Chris Haught</i></p>	<p>A Competent Authority's View on Licensing and Foreign Certificate Validation of Transport Packages for Fissile Material <i>Dirk Schulze Grachtrup, Benjamin Ruprecht</i></p>
<p>Confirmation of ICSBEP Benchmarking (LCT and LST) Using MVP3 Code <i>Shigeaki Aoki</i></p>	<p>An Analysis of Criticality Safety "Near Misses" <i>Fabien Duret, Matthieu Duluc, Johann Herth</i></p>	<p>Development of Low Enriched Uranium Plus (LEU+) Enrichment Capability and the Associated Impacts on Criticality Safety <i>Mark Savage, Charlotta Sanders</i></p>	<p>Regulating Criticality Safety in the UK: Experience from Office for Nuclear Regulation Cross-sites Inspection Series <i>Eoin Flannery, Clive Ingram, Adam Nichols</i></p>
<p>Automating the Production of Criticality Handbook Curves <i>Sareena Hussain, Stuart Watson, Monis Janjua et al.</i></p>	<p>Neutron Leakage, H/D, and Geometric Buckling Changes in Containers with Small H/D Ratios <i>Ashley R. Raster, Robert D. Busch, John A. Miller</i></p>	<p>Development of a Modular Storage of Non Irradiated Mixed Oxide Fuel <i>C. Jacques Gasnot, S. Duquennois, G. Caplin</i></p>	<p>Strategies for Establishing Adequate Subcritical Margin for Cases Involving Insufficient Benchmark Data at Enrichment and Fuel Fabrication Facilities (HALEU Applications) <i>Jeremy W. Munson</i></p>
<p>Radiation Safety Information Computational Center: An Information Analysis Center for Nuclear Criticality Safety <i>Timothy E. Valentine</i></p>	<p>Nuclear Criticality Safety Lessons Learned from the Rocky Flats Plant Fires <i>Patrick Huston, Kaelin Glover</i></p>	<p>Neutron Moderating Materials Other than Water: How, Why and When the Problems Arose and the Solutions Proposed by the CEA <i>Georgios Kyriazidis, Aurelien Dorval</i></p>	<p>Assessment of a Sophisticated PWR Burn-up Credit Application for a Transport Cask Design <i>Benjamin Ruprecht, Dirk Schulze Grachtrup</i></p>
		<p>A Device Designed to Detect Hydrogen in Moderation Controlled Workshops <i>Olivier Ravat</i></p>	<p>Development of a SKB Burn-up Credit Methodology for BWR <i>Fredrik Johansson, Jesper Kierkegaard, John Loberg et al.</i></p>

Session 5: TUESDAY, OCTOBER 3, 11:05 – 12:45

<p>Room 1 Track 1 CODES AND OTHER CALCULATION METHODS</p> <p>Chairs: Yi-Kang Lee (CEA) Kenya Suyama (JAEA)</p>	<p>Room 2 Track 7 STORAGE, TRANSPORT, AND DISPOSAL ISSUES</p> <p>Chairs: Michel Call (USNRC) Tim Hicks (Galson Sciences)</p>	<p>Room 3 Track 4 MEASUREMENTS, EXPERIMENTS, AND BENCHMARKS</p> <p>Chairs: Catherine Percher (LLNL) Cheol Ho Pyeon (Kyoto Univ.)</p>	<p>Room 4 Track 5 STANDARDS, ASSESSMENT METHODOLOGY, REGULATIONS</p> <p>Chairs: Dirk Schulze Grachtrup (BASE) Eoin Flannery (ONR)</p>
<p>Recent Developments to MONK® and Visual Workshop for Criticality Safety Applications <i>Simon Richards, Adam Bird, Andrew Cox et al.</i></p>	<p>International Approaches to Post-Closure Criticality Safety : French Agency Strategy <i>A. Feuerle</i></p>	<p>Status of the International Criticality Safety Benchmark Evaluation Project <i>C. Percher, J.D. Bess, W.J. Marshall et al.</i></p>	<p>Basis of 10CFR71.15(b) for Consideration into SSR-6 Para. 417 <i>Alexander Lang, Andrew B. Barto, Douglas G. Bowen</i></p>
<p>New Bateman Equation Solvers in MENDEL version 3.1 <i>S. Lahaye, A. Anne, R. Baron et al.</i></p>	<p>Comparison of Burn-up Credit Methodologies for Post-Closure Criticality Safety Assessments Using a Simplified Reference Modelling Configuration <i>Jasdeep Bansal, Callum Eldridge, Ahmed Shama et al.</i></p>	<p>The Case for and Against a Gadolinium Bias in SCALE: Round 2 <i>W. J. Marshall, A. M. Shaw, T. M. Greene et al.</i></p>	<p>International Standards for Nuclear Criticality Safety <i>Ben Webborn, Douglas G. Bowen, Grégory Caplin</i></p>
<p>Improvements of the SCALE Testing Framework <i>Shane W. D. Hart, Seth R. Johnson, Robert A. Lefebvre et al.</i></p>	<p>UK Perspective on Post-Closure Criticality Safety Assessments in the Final Disposal of Higher Activity Waste <i>Liam Payne, Stuart Watson, Robert Mason et al.</i></p>	<p>Preliminary Model Development in Support of a New Criticality Safety Benchmark for HEU Metal Annuli and Cylinders with Reflectors of Three- to Nineteen-Inch Thickness <i>Kathryn Worrell, Gabriel Lentchner, John Mihalczko et al.</i></p>	<p>New CEA Handbooks for Criticality Safety Assessment Demonstrations <i>David Noyelles, Aurélien Dorval, Michaël Prigniau</i></p>
<p>The CRISTAL Criticality Package: from 2.0 towards 2.1 Version <i>Arnaud Entringer, Aurélie Bardelay, Sébastien Lahaye et al.</i></p>	<p>Swiss Perspective on Post-Closure Criticality Safety Assessments in the Final Disposal of High-Level Waste <i>Madalina Wittel, Susanne Pudollek</i></p>	<p>A High-Fidelity Benchmark of the AGN-201M Reactor at the University of New Mexico <i>Rowdy Davis, Christopher M. Perfetti, Larry L. Wetzel et al.</i></p>	<p>Evaluation of the Sum-of-Fractions Methodology for Water and Polyethylene Moderated Systems <i>Travis J. Zipperer, Andrew W. Prichard, Travis M. Greene et al.</i></p>

Session 6: TUESDAY, OCTOBER 3, 14:00 – 16:05

<p>Room 1 Track 2 NUCLEAR DATA</p> <p>Chairs: Coralie Carmouze (CEA) Kenichi Tada (JAEA)</p>	<p>Room 2 Track 7 STORAGE, TRANSPORT, AND DISPOSAL ISSUES</p> <p>Chairs: Adrien Feuerle (ANDRA) Madalina Wittel (Nagra)</p>	<p>Room 3 Track 6 OPERATIONAL PRACTICES AND SAFETY CASES</p> <p>Chairs: Aurélien Dorval (CEA) Deborah Ann Hill (UKNNL)</p>	<p>Room 4 Track 4 MEASUREMENTS, EXPERIMENTS, AND BENCHMARKS</p> <p>Chairs: Jesson Hutchinson (LANL) Shouhei Araki (JAEA)</p>
<p>FP Concentrations Evaluation With FPY Data Considering Fission Rate Spectrum <i>Kohei Matsuo, Takanori Kitada, Satoshi Takeda et al.</i></p>	<p>A Criticality Analysis for Disposal Canister Considering Fuel Burnup and Iron Corrosion Effect <i>Shin Sung Oh, Kyu Jung Choi, Ser Gi Hong</i></p>	<p>Altering the Requirement to Assay Waste Drums containing Plutonium Contaminated Material at Sellafield Ltd. <i>Amy van der Vyver, Michael Hobson</i></p>	<p>Optimization Algorithm for Criticality Experiment Design Using Whisper <i>Cole Kostelac, Ayodeji Alajo, Nicholas Thompson</i></p>
<p>Consistent Nuclear Data Evaluations for Criticality Safety <i>I. Stetcu, T. Kawano, A. E. Lovell et al.</i></p>	<p>The United States Perspective on Post-Closure Criticality Safety Assessments in the Final Disposal of High-Level Waste <i>Laura Price, Kaushik Banerjee</i></p>	<p>Burnup Credit Criticality Safety Case for AGR Spent Fuel Storage <i>James Ryan, Albrecht Kyrieleis, Jennifer Bateman et al.</i></p>	<p>Criticality Experiments to Reduce Compensating Errors in Plutonium Nuclear Data <i>J. Hutchinson, J. Alwin, B. Bell et al.</i></p>
<p>Nuclear Data for Neutron Criticality Applications at GELINA <i>P. Schillebeeckx, C. Camouze, S. Kopecky et al.</i></p>	<p>Refinement of the Loading Curve Determination Methodology and Modeling for Swiss PWR Spent Fuel Final Disposal Canisters <i>M. Frankl, A. Vasiliev, D. Rochman et al.</i></p>	<p>Criticality Safety of Orano La Hague Dissolver Rinsing Operations <i>Y. Blin, C. Quenault, R. Vassieux et al.</i></p>	<p>The EUCLID Experiment and Nuclear Data Library Comparisons <i>Nicholas W. Thompson, Jesson Hutchinson, Jennifer Alwin et al.</i></p>
<p>Inter- Codes and Nuclear Data Comparison under Collaboration Works between IRSN and JAEA <i>Satoshi Gunji, Shouhei Araki, Tomoaki Watanabe et al.</i></p>	<p>Criticality Safety for UK Spent Fuel Disposal in the Post-Closure Phase of a Geological Disposal Facility <i>Robert Mason, Albrecht Kyrieleis, Lynn Grindrod et al.</i></p>	<p>Lessons Learned From Ventilation and Glovebox Flooding Via Overfilling of the Wet Vacuum System in a Plutonium Facility <i>Andrew Smiley, Amanda Bowles Tomaszewski, Michael Corum</i></p>	<p>Reactivity Coefficient Measurements to Aid in Reducing Compensating Errors in Plutonium Nuclear Data <i>T. Cutler, J. Alwin, M. Grosskopf et al.</i></p>
<p>Dependence of the Average Total Kinetic Energy of Fission Fragments on Incident Neutron Energy Studied by a 4D Langevin Model <i>Kazuya Shimada, Chikako Ishizuka, Satoshi Chiba</i></p>	<p>Criticality Safety for UK Spent Fuel Disposal in the Pre-Closure Phase of a Geological Disposal Facility <i>Liam Payne, Andrew Price, Steven Lonsdale et al.</i></p>		

Session 7: WEDNESDAY, OCTOBER 4, 8:30 – 10:35

<p>Room 1 Track 1 CODES AND OTHER CALCULATION METHODS Chairs: Shane W. D. Hart (ORNL) Shigeaki Aoki (MNF)</p>	<p>Room 2 Track 7 STORAGE, TRANSPORT, AND DISPOSAL ISSUES Chairs: J�r�my Bez (IRSN) Liam Payne (Nuclear Waste Services)</p>	<p>Room 3 Track 9 PROFESSIONAL DEVELOPMENT ISSUES AND TRAINING Chairs: Cheol Ho Pyeon (Kyoto Univ.) Dominic Winstanley (Sellafield)</p>	<p>Room 4 Track 4 MEASUREMENTS, EXPERIMENTS, AND BENCHMARKS Chairs: Steven C. van der Marck (NRG) Kenichi Tada (JAEA)</p>
<p>Application of an Empirical Density Law via Python for Aqueous Plutonium Chloride Systems in MCNP6 <i>Riley Bulso, Jennifer Alwin, Christopher Perfetti et al.</i></p>	<p>GMIT: A Tool to Support Post-Closure Criticality Safety Assessments <i>E. Adam Paxton, Jiejie Wu, Tim Hicks et al.</i></p>	<p>Collaboration of Nuclear Criticality Safety and Accident Dosimetry in Planning and Exercise Development <i>Matthew M. Conrady</i></p>	<p>High Multiplication Neutron Noise Measurements Using the Seven Percent Critical Experiment 7uPCX <i>Nicholas Whitman, Tanner Heatherly, Jesson Hutchinson et al.</i></p>
<p>Application of a Density Law via Python for Aqueous Plutonium Nitrate Systems in MCNP6 <i>Tara Robertson, Jennifer Alwin, Christopher Perfetti et al.</i></p>	<p>Revision of the Dounreay Low Level Waste Disposal Facilities Operational and Post-Closure Criticality Safety Assessment <i>Tamara Baldwin, Tim Hicks, Emily Swain-Phipps et al.</i></p>	<p>Development of Two Educational Calculation Codes Monte Carlo Calculation Code S-Monte and Diffusion Calculation Code S-Dif <i>Tetsuo Matsumura, Takanori Kameyama</i></p>	<p>Gamma-ray Measurements from Pulsed-Neutron Die-Away Experiments (PNDA) <i>Ruby Araj, Daniel Siefman, Lee Bernstein et al.</i></p>
<p>Criticality Calculations of Spent Fuel Storage Pool with Water Holes <i>S. Duquenne, Y. Blin, B. Checiak et al.</i></p>	<p>German Perspective on Post-Closure Criticality Safety Assessments in the Final Disposal of High-Level Waste <i>Christian Herold, Florian Voigts, Sabine Unger</i></p>	<p>Implementation of CARTA into Criticality Training Programmes <i>Katrina Christaki, Stewart Hay, Toby Tyas</i></p>	<p>Thermal Pulsed Neutron Die Away Experiments in Salt Water <i>Valeria Raffuzzi, Daniel Siefman, Lee Bernstein</i></p>
<p>Method and Code Development for the Nuclide Composition Evaluation of Commercial PWR Spent Fuel Assembly <i>Liangzhi Cao, Senhan Yang, Yunzhao Li</i></p>	<p>Initial Considerations on Potential Optimisation Options of Spent Fuel Disposal Canisters Taking into Account Post-Closure Criticality Safety <i>Madalina Wittel, Valentyn Bykov, Maksym Chernykh et al.</i></p>	<p>In Silico Versus in Situ the Challenging Landscape of Nuclear Criticality Safety Training <i>David K. Hayes</i></p>	<p>Inherently Safe Subcritical Assembly Lite <i>Samuel T. Varghese, William Zywiec</i></p>
	<p>Nagra’s Approach to Post-Closure Criticality Safety Case Development within the High-Level Waste Repository Programme Roadmap <i>Madalina Wittel, Susanne Pudollek</i></p>	<p>Overview and Current Progress of the DOE/NNSA Nuclear Criticality Safety Program Training and Education Program <i>Douglas G. Bowen</i></p>	<p>Fast Spectrum Reactivity Worth Measurements in STEK <i>Steven van der Marck, Arjan Koning</i></p>

Session 8: WEDNESDAY, OCTOBER 4, 11:05 – 12:45

<p>Room 1 Track 1 CODES AND OTHER CALCULATION METHODS</p> <p>Chairs: TBD Taro Ueki (JAEA)</p>	<p>Room 2 Track 7 STORAGE, TRANSPORT, AND DISPOSAL ISSUES</p> <p>Chairs: Tamara Baldwin (Galson Sciences) Pedro Ortego (SEA)</p>	<p>Room 3 Track 9 PROFESSIONAL DEVELOPMENT ISSUES AND TRAINING</p> <p>Chairs: Shauntay Coleman (LLNL) Hiroki Takezawa (Nagaoka Univ. of Tech)</p>	<p>Room 4 Track 4 MEASUREMENTS, EXPERIMENTS, AND BENCHMARKS —A Memory of Gary Harms— Chairs: Mariya Brovchenko (IRSN) Akito Oizumi (JAEA)</p>
<p>Adapting CLUTCH Methodology to Multigroup TSUNAMI-3D for Eigenvalue Sensitivity Calculations <i>K. B. Bekar, W. J. Marshall</i></p>	<p>Exotic Fuels Transport Challenge <i>Albrecht Kyrieleis, Andrew Thallon, Ahmed Aslam</i></p>	<p>A Guide for Criticality Safety Training and Awareness of Personnel Working in Nuclear Installations <i>Clement Lopez, Fleur Lespinasse, Laurent Cholvy et al.</i></p>	<p>Molybdenum Sleeve Experiments in the Sandia Critical Experiments Facility <i>Gary A. Harms, David E. Ames, Nicolas Leclaire et al.</i></p>
<p>Verification and Performance Impact of the New Parallel MCNP6.3 Particle Track Output Capability for Subcritical Multiplication Simulations <i>Michael E. Rising, Nicholas H. Whitman, Jesson D. Hutchinson</i></p>	<p>Criticality Risk Associated with the Bulk Deployment of Powder Extinguishants <i>Jennifer Bateman, Holly Pearson, Dan Johnson</i></p>	<p>Development of Nuclear Criticality Staff at Pacific Northwest National Laboratory <i>Krista I Kaiser</i></p>	<p>Methods to Determine Burst Repeatability for Godiva IV <i>Joetta Goda, Robert Allen Weldon Jr, Travis Grove et al.</i></p>
<p>TRIPOLI-4[®] Neutron Multiplication Calculations for the Subcritical Experiments of the BeRP Ball Reflected by Tungsten <i>Yi-Kang Lee, François-Xavier Hugot</i></p>	<p>High Assay Low Enriched Uranium Transportation Packages Under 10 CFR Part 71 – U.S. NRC Research and Certification Activities <i>Andrew B. Barto, Michel Call</i></p>	<p>Ensuring the Sustainability of Criticality Safety Expertise <i>Dominic Winstanley</i></p>	<p>Quantifying Burst Repeatability for Godiva IV <i>Robert Allen Weldon Jr, Joetta Goda, Travis Grove et al.</i></p>
<p>Use of SCALE MAVRIC Radiation Transport Calculations for the Design of a Subcritical Assembly at Oak Ridge National Laboratory <i>M. N. Dupont, A. Lang, D. Bowen</i></p>	<p>Increased Flexibility for Reflectors Near Storage Arrays of Fissionable Items at Sandia <i>William M. Cook, Elijah C. Lutz, Ashley R. Raster et al.</i></p>	<p>A Look at a “Quid Pro Quo” NCS Assessment Culture <i>John A. Miller, David P. Heinrichs, Mark N. Neeley et al.</i></p>	<p>Experiment Design and Preparation for a Shielding Benchmark Utilizing Godiva-IV <i>Garrett McMath, Tyler Borgwardt, Riley Cumberland et al.</i></p>

Session 9: WEDNESDAY, OCTOBER 4, 14:00 – 15:40

<p>Room 1 Track 3 UNCERTAINTY AND SENSITIVITY ANALYSIS Chairs: Alexander Vasiliev (PSI) Shuhei Maruyama (JAEA)</p>	<p>Room 2 Track 7 STORAGE, TRANSPORT, AND DISPOSAL ISSUES Chairs: John Bess (JFoster & Associates) William M. Cook (SNL)</p>	<p>Room 3 Track 10 FUTURE CHALLENGES Chairs: Rei Kimura (Toshiba ESS) Dominic Winstanley (Sellafield)</p>	<p>Room 4 Track 4 MEASUREMENTS, EXPERIMENTS, AND BENCHMARKS Chairs: Rene G. Sanchez (LANL) Masahiro Fukushima (JAEA)</p>
<p>Nuclear Data Sensitivity Analysis of a Sodium Shielding Experiment Based on Generalized Perturbation Theory for Data Assimilation <i>Shuhei Maruyama, Tomohiro Endo, Akio Yamamoto</i></p>	<p>Assessment of Validation for Burnup Credit Calculations for LEU+ and High Burnup Fuel <i>M. N. Dupont, C. Celik, A. Lang et al.</i></p>	<p>Preliminary Study of Burnup Measurement and Relative Power Distribution in the HTTR Using Gamma-Ray Measurement <i>Irwan L. Simanullang, Shohei Kawaguchi, Nozomu Fujimoto et al.</i></p>	<p>MUSiC: Critical Experiment with Bare Highly Enriched Uranium Shells Benchmark <i>Rene Sanchez, George McKenzie, Alexander McSpaden</i></p>
<p>Sensitivity and Uncertainty-Based Techniques to Extend the Database of Experimental Validation Benchmarks: Practical Example of “IEU” Slabs <i>T. Albert, Q. Vuyet, C. Rechatin et al.</i></p>	<p>Criticality Safety Recommendations for the Treatment of Extended Enrichment and High Burnup Fuel for Storage and Transportation Systems <i>Alex Shaw, Nicholas Kucinski, Briana Hiscox</i></p>	<p>Effect of Nuclear Data Library on Criticality and Transmutation Characteristics in Fluoride Molten Salt Reactor <i>Koji Fujikura, Naoto Aizawa</i></p>	<p>Future of the MUSiC Experiment Data <i>George McKenzie, Flynn Darby, Jesson Hutchinson et al.</i></p>
<p>Efficient Uncertainty Quantification Using Deterministic Sampling Method with Simplex Ensemble and Scaling Method <i>Tomohiro Endo, Akio Yamamoto</i></p>	<p>The Importance of Transport Criticality Safety <i>Charlotte Davis, Michelle Nuttall</i></p>	<p>MCNP-6 Criticality Comparison of Additive Manufacturing Techniques for the Fabrication of Metallic Nuclear Fuels <i>Patrick J. Moo</i></p>	<p>Towards an Era of Low Temperature Integral Critical Experiments: Surrogate Testing of Low-Temperature TEX Configurations <i>Eric Aboud, Paul Yap-Chiongco, Jesse Norris et al.</i></p>
<p>Uncertainty Quantification of a and g Emission Spectra <i>S. Lahaye, T.D. Huynh, A. Tsilanizara</i></p>	<p>Consideration of Agglomeration of Low Enriched Fissile Materials and the Detrimental Effect on Package Payloads/CSI <i>Michelle Nuttall, Charlotte Davis</i></p>		<p>Neutronic Characteristics of the Low-Temperature TEX Design and Proposed Configurations <i>Jesse Norris, Catherine Percher, Eric Aboud et al.</i></p>

Session 10: WEDNESDAY, OCTOBER 4, 16:10 – 17:50

<p>Room 1 Track 3 UNCERTAINTY AND SENSITIVITY ANALYSIS Chairs: Axel Hoefler (Framatome) Tangi Nicol (CEA)</p>	<p>Room 2 Track 7 STORAGE, TRANSPORT, AND DISPOSAL ISSUES Chairs: Charlotte Davis (NTS) Matthias Frankl (PSI)</p>	<p>Room 3 Track 10 FUTURE CHALLENGES Chairs: Naoto Aizawa (Tohoku Univ.) Irwan Liapto Simanullang (Kyusyu Univ.)</p>	<p>Room 4 Track 4 MEASUREMENTS, EXPERIMENTS, AND BENCHMARKS Chairs: Jesse D. Norris (LLNL) Kotaro Tonoike (JAEA)</p>
<p>Experimental Correlation Estimation and Their Role in Transposition Method <i>Tangi NICOL, Alexandre DEPLORTE, Julien PIETRI</i></p>	<p>Impact of Recent ENDF Nuclear Data on Burnup Credit Criticality Safety Analyses <i>W. A. Metwally, M. N. Dupont, W. J. Marshall et al.</i></p>	<p>IRSN Review of Experimental Needs for Nuclear Criticality Safety <i>Aurélie Bardelay, Jean-Baptiste Clavel, Wilfried Monange et al.</i></p>	<p>Experiments to Measure the Effect of Tantalum on Critical Systems <i>David E. Ames, Gary A. Harms, Elijah Lutz et al.</i></p>
<p>Validating Mixtures of ^{233}U, ^{235}U, and ^{239}Pu for the Sum-Offractions Method <i>T. M. Greene, A. Lang, W. J. Marshall</i></p>	<p>The Modelling of LEU Heterogeneous Systems as Tetrahedral Arrays in MONK[®], SCALE and MCNP[®] and the Impact of Heterogeneity on Runtime <i>Stuart Watson, Simon Richards, Monis Janjua</i></p>	<p>Towards a Direct Comparison of Practical CSE with BUC Approaches: Benchmark Proposal for a Pseudo-application Case with User-defined NCS Criteria <i>A. Vasiliev, M. Frankl, D. Rochman et al.</i></p>	<p>TEX-HEU & TEX-Hf: Critical Assemblies with Highly Enriched Uranium, Polyethylene, and Hafnium <i>Jesse Norris, Catherine Percher, David Heinrichs et al.</i></p>
<p>Impact of Correlations Between Experiments on the Evaluation of Bias due to Nuclear Data by Assimilation Methodologies <i>Frédéric Fernex, Nicolas Leclaire, Aurélie Bardelay et al.</i></p>	<p>Evaluation of the ARIANE Samples Irradiated in Gösigen Reactor <i>Pedro Ortego</i></p>	<p>Criticality Analyses of the PWR Core with Accident Tolerant Fuel <i>Agnieszka Boettcher, Zuzanna Marcinkowska</i></p>	<p>Verification and Validation of Monte Carlo Simulations Using Swiss PWR HZP Data <i>L. Berry, A. Vasiliev, M. Hursin et al.</i></p>
<p>Bias and Correlated Data, Comparison of Methods <i>A. Hoefler, M. Stuke, H. S. Abdel-Khalik et al.</i></p>	<p>Impact of Low Temperatures on Criticality Safety Assessments for Fissile Material Transportation <i>Jeremy Bez, Marcel Tardy, Aurélie Bardelay et al.</i></p>		<p>Plutonium Chloride Solution Characterization: Impacts on Density from Pu Oxidation States and Saturation Effects <i>Kelly E. Aldrich, Kimberly B. Muscarella, Justin N. Cross et al.</i></p>

Session 11: THURSDAY, OCTOBER 5, 8:30 – 10:35

<p>Room 1 Track 3 UNCERTAINTY AND SENSITIVITY ANALYSIS Chairs: Jun-Shuang FAN (Hokkaido Univ.) Travis Greene (ORNL)</p>	<p>Room 2 Track 7 STORAGE, TRANSPORT, AND DISPOSAL ISSUES Chairs: W. A. Metwally (ORNL) Stuart Watson (3T Safety Consultant)</p>	<p>Room 3 Special Session 2 MACHINE LEARNING, DEEP LEARNING Chairs: Justin Clarity (PNNL) Arnau Albà Jacas (PSI)</p>	<p>Room 4</p>
<p>Deterministic-Monte Carlo Hybrid Methods for Eigenvalue Sensitivity Coefficient Calculations <i>T. M. Greene, K. Bekar, W. J. Marshall</i></p>	<p>Micro-SMR LEU+ Once-through Fuel Cycle Spent Fuel Actinides Characteristics Verification <i>John Bess, Gray Chang, Mie Hiruta et al.</i></p>	<p>Uncertainty Quantification on Spent Nuclear Fuel with LMC <i>Arnau Albà, Andreas Adelmann, Dimitri Rochman</i></p>	
<p>Overview of Spent Nuclear Fuel Inventory Results for the ARIANE GU3 Sample <i>C. Carmouze, R. Ichou, G. Ilas et al.</i></p>	<p>Criticality of Poisoned Cells for Underwater Spent Fuel Storage <i>B. Checiak, G. Caplin, Y. Blin et al.</i></p>	<p>Applicability of Machine Learning to Criticality <i>Charpentier-Süter Alexis, Gaudin Gérald, Arphant Nicolas et al.</i></p>	
<p>A Study of Model Dependence in Burnup Credit Criticality Safety Analysis <i>Axel Hoefler, Stefan Glaubrecht</i></p>	<p>Decay Heat Calculation for Efficient Storage of Spent Nuclear Fuel <i>Shunsuke Sato, Yasushi Nauchi</i></p>	<p>Progress Toward the Development of an Artificial Neural Network for Rapid Post-Closure Reactivity Analysis <i>Justin Clarity, Harish Gadey, Peter Stefanovic et al.</i></p>	<p>No presentations</p>
<p>Investigating Similarity Differences for Light-Water Moderated and Polyethylene-Moderated Systems <i>T. M. Greene, W. J. Marshall</i></p>	<p>Decay Heat of Irradiated Nuclear Fuels – A Status Report from the NEA WPNCs <i>D. Rochman, A. Algora, Ø. Bremnes et al.</i></p>	<p>Criticality Experiment Design for the Molten Chloride Reactor Experiment Facility <i>Michael Branco-Katcher, Daniel Siefman, Todd S. Palmer et al.</i></p>	
<p>Lost and Found Opportunities Around the Chlorine Worth Study <i>W. J. Marshall</i></p>	<p>Comparative Study of the Impact on the Nuclear Criticality Safety of the Boron and Burnup Credit in Pools of Spent Fuel Assemblies from PWR Nuclear Power Plants <i>Alberto Ottonello, Marie-Pierre Fontaine, Nicolas Slosse</i></p>	<p>The Prediction of the Critical Parameters of Post-Processing Non-uniform Conditions based on Improved BP Neural-Network <i>Liang Song, Sun Ming-ze, Cheng Yu-ting et al.</i></p>	

Poster Session: TUESDAY, OCTOBER 3, 16:10 – 17:50, Exhibition Hall 1

Track 1: CODES AND OTHER CALCULATION METHODS

- P-01 The Construction of a Quantitative Comparison of Upper Subcritical Methods for Novel Neutronic Systems *Bobbi Riedel, Christopher Perfetti*
- P-02 Nuclear Criticality Safety Analogue “Tool” for Approximating Subcritical Equipment and Process Designs and Operations Limits *Calvin M. Hopper, Megan Pritchard, Cecil V. Parks*
- P-03 GRS Handbook on Criticality – Digital Version *HBcrit* *Fabian Sommer*
- P-04 A Burnup Calculation System Coupled with MCNP and SCALE/ORIGEN *Kenichi Yoshioka, Satoshi Wada, Shunichiro Omika*
- P-05 Temperature Reactivity Feedback Coefficient for the MYRRHA Critical Core – Design Revision 1.8 *L. Fiorito, A. Peñalosa, M. Zanetti et al.*
- P-06 Stochastic Neutronics Simulations Using Deterministic Transport With N-Forked Fission Branching Approximations *Philippe Humbert*
- P-07 Cyclone – New Features for Criticality Safety Analyses *Stewart Hay, Carl Hughes, Peter Taylor*
- P-08 Solution to Random-Media Criticality Benchmarks with a Monte Carlo Solver Solomon *Yasunobu Nagaya*

Track 2: NUCLEAR DATA

- P-09 Linearization of Thermal Neutron Scattering Cross Section to Optimize the Number of Energy Grid Points *Kenichi Tada*
- P-10 The First Core Criticality Analysis of the RSG GAS Multipurpose Research Reactor using the Newly Released JENDL-5 Nuclear Data Library *Peng Hong Liem, Donny Hartanto*
- P-11 Nuclear Data Sensitivity Analysis of Post-Irradiation Examination Data with Fuel Depletion Calculation Module CBZ/Burner *Yuya Inagaki, Go Chiba, Keita Yoshikawa et al.*

Track 3: UNCERTAINTY AND SENSITIVITY ANALYSIS

- P-12 Adjustment of Uncertain Modeling Parameters through Analyses of Post-Irradiation Examination Data *Keita Yoshikawa, Go Chiba, Yuya Inagaki et al.*
- P-13 On the PSI Routine Criticality Safety Evaluation Methodology and its Validation Approach *A. Vasiliev, H. Lee, M. Frankl et al.*
- P-14 A Method to Estimate Burnup Using Enrichment(IE), Cooling Time(CT) and TNSI(Total Neutron Source Intensity) in Spent Fuels : Apply to MCNP Neutron Detection *Kwangheon Park, So hee Cha*
- P-15 Data Assimilation Using Prompt Neutron Decay Constant α for Water to Reduce Uncertainties due to Thermal Neutron Scattering Law *Yoshinari Harada, Hibiki Yamaguchi, Tomohiro Endo et al.*

Track 4: MEASUREMENTS, EXPERIMENTS, AND BENCHMARKS

- P-16 AFRRRI TRIGA Reactor Neutron and Gamma Dose Characterization Preliminary Results *Aaron Sun Tamashiro, Philip Angus, David Heinrichs et al.*
- P-17 Analysis of the MUSiC ³He Multiplicity Data *Alex McSpaden, Jesson Hutchinson, George McKenzie et al.*
- P-18 Canceled
- P-19 Benchmark Analyses on Control Rod Worths of TRIGA Reactor Modeled in the ICSBEP Handbook Using Continuous-Energy Monte Carlo Code MVP Version 3 *Hiroshi Yanagisawa, Miki Umeda, Yuiko Motome et al.*
- P-20 An Alternative to Solution Experiments for Nuclear Data Validation & Training: Reflection and Interaction of Juxtaposed Uranium (RAIJU) Experiment Design *Kelsey Amundson, Nicholas Thompson*
- P-21 Pu Oxalate Slurries – A Potential Bounding Condition for Aqueous Chloride Processes *Kimberly B. Muscarella, Kelly E. Aldrich, Dung M. Vu et al.*
- P-22 Design of TEX-MOX Critical Experiments Varying Neutron Spectrum *M. Brovchenko, J. Bez, M. Daury et al.*
- P-23 Nano Second Pulsed Die-Away Experiments for Nuclear Data Validation *Valeria Raffuzzi, Daniel Siefman, Lee Bernstein*
- P-24 Design of a UO₂-BeO Critical Experiment at Sandia *William M. Cook, Elijah C. Lutz, David E. Ames et al.*

Track 5: STANDARDS, ASSESSMENT METHODOLOGY, REGULATIONS

- P-25 Updates of the French Criticality Safety Analysis Guide And Event Database (LOGIC) *Fabien Duret, Matthieu Duluc, Aurélie Bardelay*
- P-26 LICORNE: A Useful Software for Criticality Safety Reference Values *Wilfried Monange, Aurélie Bardelay*

Track 6: OPERATIONAL PRACTICES AND SAFETY CASES

- P-27 Criticality Assessment of Borosilicate Raschig Rings Poisoned Tanks Dismantling *Laurent Zambelli, Patrick Pin, Michaël Gal et al.*

Track 7: STORAGE, TRANSPORT, AND DISPOSAL ISSUES

- P-28 Investigation of the Specific k_{eff} Behaviour in Simplified Corrosion Scenarios for a Potential PWR Final Disposal Canister Design *M. Frankl, A. Vasiliev, L. Berry et al.*
- P-29 Evaluation of the Fukushima Daini 2F2 8x8-4 Samples *Pedro Ortego*
- P-30 The Benefits of a Multiple Water Barrier Design Transport Package *Michelle Nuttall, Charlotte Davis*
- P-31 Effects of Low Temperature on Transport Criticality Safety *Charlotte Davis, Michelle Nuttall*
- P-32 Criticality Sensitivity Analysis for the Standard Waste Transport Container 255 (SWTC-255) *Charlotte Davis, Michelle Nuttall, Michael Hobson et al.*

Track 8: CRITICALITY ACCIDENTS AND INCIDENTS

- P-33 Comparison of Computational and Experimental Results for Criticality Accident Alarm Placement *Alan J. Yamanaka, Soon S. Kim, Shauntay Coleman*
- P-34 The CAAS-3S Criticality Accident Alarm System Dose-Rate Feature *Sasha Philips, Adrien Gallozzi Ulmann, Prosper Liu et al.*

Track 9: PROFESSIONAL DEVELOPMENT ISSUES AND TRAINING

- P-35 Interface of Criticality Safety with Other Transport Disciplines *Charlotte Davis, Michelle Nuttall*
- P-36 Professional Development of NCS Staff: Benefits of Going beyond Technical and Regulations *John A. Miller, Robert D. Busch, Ashley R. Raster et al.*
- P-37 Nuclear Criticality Safety through Training, Organizational and Human Factors Integration and Feedback, at Orano Recyclage Reprocessing Plant *Patrick PIN, Bérengère MARTIN, Rémi VASSIEUX*
- P-38 Criticality Safety Evaluation Project Development for University of California Berkeley Nuclear Criticality Safety Pipeline Course *Shauntay Coleman, Alan Yamanaka, William Zywiec*
- P-39 Problem-Based Learning Program of Reactor Physics Experiment to Measure Subcriticality for an Unknown System *Shunya Teratani, Yoshinari Harada, Kaito Mori et al.*

Special Session 1: FUKUSHIMA DAI-ICHI NUCLEAR POWER PLANT

- | | | |
|------|---|---|
| P-40 | Study on Criticality Safety Control of Fuel Debris for Validation of Methodology Applied to the Safety Regulation | <i>Kenya Suyama, Taro Ueki, Satoshi Gunji et al.</i> |
| P-41 | Progress of Modification Work of the Static Experiment Critical Facility (STACY) and Preparation for First Series of Critical Experiments under the New Regulatory Standards of Japan | <i>Kazuhiko Izawa, Junichi Ishii, Masakazu Seki et al.</i> |
| P-42 | Status on the Development of the Fabrication and Analysis Equipment of the Pseudo Fuel Debris | <i>Fuyumi Kobayashi, Hiroyuki Fukaya, Kazuhiko Izawa et al.</i> |
| P-43 | Planning of the Debris-Simulated Critical Experiments on the New STACY | <i>Satoshi Gunji, Shouhei Araki, Yu Arakaki et al.</i> |
| P-44 | Preliminary Analysis of Randomized Configuration Patterns in Modified STACY Core | <i>Shigeki Shiba, Daiki Iwahashi, Tsuyoshi Okawa et al.</i> |
| P-45 | Preliminary Analyses of Modified STACY Core Configuration Using Serpent With JENDL-5 | <i>Maho Kawaguchi, Shigeki Shiba, Daiki Iwahashi et al.</i> |

Special Session 2: Machine Learning, Deep Learning

- | | | |
|------|---|---|
| P-46 | Missing Rods Pattern Optimization in LWR Fuel Assembly Using a Genetic Algorithm Coupled with Heterogeneous TRIPOLI-4 [®] Monte Carlo Calculations | <i>J. Dupas, D. Noyelles, M. Prigniau</i> |
|------|---|---|

13. Poster Evaluation

We had 45 posters in total. To facilitate the poster session, the local organizer managed the poster evaluation presented in the closing plenary session, asking volunteers for online evaluation. Sum of scores of three viewpoints: Technical value - 5, Quality of Poster - 5 and Quality of Presentation – 5 is used for over whole evaluation. Overall Average Score was 9.77. We selected +12 is exceptional poster and +11 is highly evaluated poster. Following is the seven selected posters.

Exceptional Posters

- P-38 S. Coleman, A. Yamanaka, and W. Zywiec, “Criticality Safety Evaluation Project Development for University of California Berkeley Nuclear Criticality Safety Pipeline Course Most Interested.”
- P-15 Y. Harada, H. Yamaguchi, T. Endo, and A. Yamamoto, “Data Assimilation Using Prompt Neutron Decay Constant α for Water to Reduce Uncertainties due to Thermal Neutron Scattering Law.”
- P-37 P. Pin, B. Martin and R. Vassieux, “Nuclear criticality safety through training, organizational and human factors integration and feedback, at Orano Recyclage La Hague reprocessing plant.”

Highly Evaluated Posters

- P-22 M. Brovchenko, J. Bez, M. Daury and J.-C. Latche, “Design of TEX-MOX critical experiments varying neutron spectrum.”
- P-33 A. Yamanaka, S. Kim and S. Coleman, “Comparison of Computational and Experimental Results for Criticality Accident Alarm Placement.”
- P-36 J. A. Miller, R. D. Busch and A. R. Raster and J. Cole, “Professional Development of NCS Staff: Benefits of going beyond technical and regulations.”
- P-45 M. Kawaguchi, S. Shiba, D. Iwahashi, T. Okawa, S. Gunji, K. Izawa and K. Suyama, “Preliminary Analyses of Modified Stacy Core Configuration using Serpent with JENDL-5.”

14. Summary of Submission and Participation

Tables 2 and 3 show the status of paper submission and participation country by country.

Table 2: Submission; country by country (2003 means ICNC2003 in Tokai-mura)

Country	2003	2023	Country	2003	2023
Belgium	2	4	Poland	-	1
China	1	2	Russia	18	-
Czech	2		Spain	-	2
France	38	39	Sweden	-	2
Germany	6	6	Switzerland	2	11
Hungary	2	-	UK	18	33
Indonesia	1	-	Ukraine	3	-
Japan	41	46*	USA	18	74
Korea	3	2	IAEA	1	-
Netherlands	1	1	OECD	2	1*
			Sum	159	224*

*including opening plenary

Table 3: Participants in Technical Session; country by country (2003 means ICNC2003 in Tokai-mura)

County	2003	2023	County	2003	2023	County	2003	2023
Austria	1	0	Indonesia	1	0	Switzerland	2	8
Belgium	3	2	Japan	78	67	UK	16	33
Canada	0	3	Korea	3	17	Ukraine	1	0
China	2	2	Netherlands	1	1	USA	25	75
Czech	2	0	Poland	0	1	Vietnam	1	0
Finland	0	2	Russia	8	0	IAEA	1	0
France	33	39	South Africa	1	0	OECD/NEA	1	3
Germany	6	9	Spain	2	1			
Hungary	2	0	Sweden	2	10	Sum	192	273

15. Sponsors

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16. Full Papers in Appendix

All full papers were provided for conference participants via the Internet until the end of 2023. This report contains 214 full papers in the appendix. This excludes the following ten papers from the full list of 224, of which the authors decided not to include their papers in this report.

- [1] Satoshi Gunji et al., “Study on the Basic Core Analysis of the new STACY.” (OpeningPlenary)
- [2] Riley Bulso et al., “Application of an Empirical Density Law via Python for Aqueous Plutonium Chloride Systems in MCNP6.” (T01_Oral/Session07_Oct4_T01)
- [3] Tara Robertson et al., “Application of a Density Law via Python for Aqueous Plutonium Nitrate Systems in MCNP6.” (T01_Oral/Session07_Oct4_T01)
- [4] Tomoaki Watanabe et al., “Comparison of Neutronic Characteristics of BWR Burnup Fuel between JENDL-4.0 and JENDL-55.” (T02_Oral/Session02_Oct2_T02)
- [5] Tomohiro Endo et al., “Efficient Uncertainty Quantification Using Deterministic Sampling Method with Simplex Ensemble and Scaling Method.” (T03_Oral/Session09_Oct4_T03)
- [6] Shuhei Maruyama et al., “Nuclear Data Sensitivity Analysis of a Sodium Shielding Experiment Based on Generalized Perturbation Theory for Data Assimilation.” (T03_Oral/Session09_Oct4_T03)
- [7] Kodai Fukuda et al., “Multiphysics Analysis of Reactivity Changes due to Solution Flow in the Past Criticality Accident at Windscale Works In 1970.” (T08_Oral/Session02_Oct2_T08)
- [8] Shunya Teratani et al., “Problem-Based Learning Program of Reactor Physics Experiment to Measure Subcriticality for an Unknown Systems.” (T09_Poster)
- [9] Adrien Gallozzi Ulmann et al., “Generalized CAAS Probe Positioning Methodology for a Variety of Fissile Material Processes.” (T08_Oral/Session03_Oct2_T08)
- [10] Michael Bronko-Katcne et al., “Criticality Experiment Design for the Molten Chloride Reactor Experiment Facility.” (S2_Oral/Session11_Oct5_S2)

The full papers are saved as PDFs under the subfolders, which are identified by the track numbers, session numbers, and date.

Acknowledgements

The authors, who are staff of the criticality safety laboratory of JAEA and who were the members of the local organizer, thank all participants arriving in Sendai in October 2023. We hope this report is utilized and referred in the criticality safety research in the world and look forward to seeing you again in Manchester, UK, in 2027. We also thank Ms. Rima OUCHI and Mr. Takeo KIKUCHI of the criticality safety laboratory. They supported us for a long-time during preparation work. By our request, Ms. OUCHI personally contributed to the conference by making a nice logo, and Mr. KIKUCHI contributed to the network and server management for the conference preparation.



