

# **IAEA Technical Meeting on Proliferation Resistance Features of Fast Reactors and Associated Fuel Cycles**



## **Report of Contributions**

Contribution ID: 4

Type: **not specified**

## Template submission

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affiliation1

**Author:** Mr AUTHOR, A. N.

**Co-author:** VAN DER ENDE, Bryan (Canadian Nuclear Laboratories)

**Presenter:** Mr AUTHOR, A. N.

**Track Classification:** Track 1: Evaluation of Proliferation Resistance of Fast Reactors and Associated Fuel Cycles: Methodologies, Definitions, Assessment and Metrics

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# NEUTRONIC PERFORMANCE OF THE (U-PU)O<sub>2</sub> AND (U-PU)N FUELS IN THE GAS-COOLED FAST REACTOR AND THE IMPACT ON THE PROLIFERATION RESISTANCE

*Tuesday 19 August 2025 15:00 (30 minutes)*

## Speaker's title

Mr

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Egypt

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**Session Classification:** Track 3: Proliferation Resistance Considerations for Nuclear Fuel Cycles

**Track Classification:** Track 3: Proliferation Resistance Considerations for Nuclear Fuel Cycles

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Type: **not specified**

## Ultrasonic In-Core Fuel Identification for Safeguarding Larger Core SMRs

*Wednesday 20 August 2025 10:30 (30 minutes)*

### Speaker's title

Mr

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Canada

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Canadian Nuclear Laboratories

**Author:** VAN DER ENDE, Bryan (Canadian Nuclear Laboratories)

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**Session Classification:** Track 4: Safeguardability of Fast Reactors and Associated Fuel Cycles

**Track Classification:** Track 4: Safeguardability of Fast Reactors and Associated Fuel Cycles

Contribution ID: 9

Type: **not specified**

## ALFRED PROLIFERATION RESISTANCE FEATURES

*Tuesday 19 August 2025 10:00 (30 minutes)*

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**Session Classification:** Track 2: Reactor Design Features for Enhancing Proliferation Resistance

**Track Classification:** Track 2: Reactor Design Features for Enhancing Proliferation Resistance

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## EXPERIENCES IN METAL FUEL FABRICATION TECHNOLOGY TOWARDS A REMOTE RE-FABRICATION FACILITY

*Tuesday 19 August 2025 13:30 (30 minutes)***Speaker's title**

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**Presenter:** TV, Prabhu (IGCAR Kalpakkam)

**Session Classification:** Track 3: Proliferation Resistance Considerations for Nuclear Fuel Cycles

**Track Classification:** Track 3: Proliferation Resistance Considerations for Nuclear Fuel Cycles

Contribution ID: 11

Type: **not specified**

## Assessing the Safeguardability of TerraPower's Natrium Reactor

*Wednesday 20 August 2025 11:30 (30 minutes)*

### Speaker's title

Mr

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**Session Classification:** Track 4: Safeguardability of Fast Reactors and Associated Fuel Cycles

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# **PROLIFERATION RESISTANCE ASSESSMENT METHODOLOGY Development of a Methodology for Proliferation Resistance Optimisation of Advanced Reactors and Fuel Cycle Using Intrinsic Attributes**

*Monday 18 August 2025 17:00 (30 minutes)***Speaker's title**

Mr

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**Affiliation/Organization**

Oak Ridge National Laboratory

**Author:** CHIRAYATH, SUNIL SUNNY (Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA)**Co-authors:** Mr JOSHI, Jay (Y-12 National Security Complex); Mr OSBORN, Jeremy (Sandia National Laboratories); HOGUE, Karen (Oak Ridge National Laboratory); Ms CRABTREE, Lauren (Sandia National Laboratories); Ms EVANS, Louise (Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA); Ms ARNO, Maggie (Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA); Mr HUBLEY, Nicholas (Los Alamos National Laboratory); CHAMBERLIN, Rebecca (Los Alamos National Laboratory); Mr SKUTNIK, Steven (Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA); Mr HANLON, Thomas (Y-12 National Security Complex)**Presenter:** CHIRAYATH, SUNIL SUNNY (Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA)**Session Classification:** Track 1: Evaluation of Proliferation Resistance of Fast Reactors and Associated Fuel Cycles: Methodologies, Definitions, Assessment and Metrics**Track Classification:** Track 1: Evaluation of Proliferation Resistance of Fast Reactors and Associated Fuel Cycles: Methodologies, Definitions, Assessment and Metrics



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# **Proliferation Resistance and Physical Protection (PR&PP) Evaluation Methodology in Support of PR&PP by Design for Fast Reactors and Associated Fuel Cycles**

*Monday 18 August 2025 14:30 (30 minutes)***Speaker's title**

Mr

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Canada

**Affiliation/Organization**

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**Author:** VAN DER ENDE, Bryan (Canadian Nuclear Laboratories)**Co-authors:** CIPITL, Benjamin (Sandia National Laboratories); Dr NGUYEN, Frederic (Commissariat à l'Énergie Atomique et aux Énergies Alternatives); RENDA, Guido (European Commission Joint Research Centre)**Presenter:** VAN DER ENDE, Bryan (Canadian Nuclear Laboratories)**Session Classification:** Track 1: Evaluation of Proliferation Resistance of Fast Reactors and Associated Fuel Cycles: Methodologies, Definitions, Assessment and Metrics**Track Classification:** Track 1: Evaluation of Proliferation Resistance of Fast Reactors and Associated Fuel Cycles: Methodologies, Definitions, Assessment and Metrics

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# **A PRELIMINARY STUDY OF A POTENTIAL FROND-END FAST REACTOR FUEL CYCLE FED BY A PEBBLE BED REACTOR'S SPENT FUEL**

*Tuesday 19 August 2025 14:00 (30 minutes)*

## **Speaker's title**

Mr

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Indonesia

## **Affiliation/Organization**

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**Session Classification:** Track 3: Proliferation Resistance Considerations for Nuclear Fuel Cycles

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## **Non-proliferation aspects of advanced recycling for fast reactors fuel cycle. Overview**

*Tuesday 19 August 2025 15:30 (30 minutes)*

### **Speaker's title**

Mr

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Austria

### **Affiliation/Organization**

Independent Nuclear Expert

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**Presenter:** Mr BYCHKOV, Alexander (Independent Nuclear Expert)

**Session Classification:** Track 3: Proliferation Resistance Considerations for Nuclear Fuel Cycles

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## **Proliferation Resistance Insights for Fast Reactors: A U.S. and International Perspective**

*Monday 18 August 2025 15:00 (30 minutes)*

### **Speaker's title**

Mr

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United States of America

### **Affiliation/Organization**

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**Session Classification:** Track 1: Evaluation of Proliferation Resistance of Fast Reactors and Associated Fuel Cycles: Methodologies, Definitions, Assessment and Metrics

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Contribution ID: 21

Type: **not specified**

## **An In-situ Feed Monitoring System for Molten Salt Reactors - With Fast Neutron Energy Spectrum Molten Salt Reactor Applications**

*Wednesday 20 August 2025 10:00 (30 minutes)*

### **Speaker's title**

Ms

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### **Affiliation/Organization**

Oak Ridge National Laboratory

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**Presenter:** Dr HOGUE, Karen (Oak Ridge National Laboratory)

**Session Classification:** Track 4: Safeguardability of Fast Reactors and Associated Fuel Cycles

**Track Classification:** Track 4: Safeguardability of Fast Reactors and Associated Fuel Cycles

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## **Assessing a Proliferation Resistance Methodology: Sodium-Cooled Fast Reactor (SFR) Case Study**

*Monday 18 August 2025 16:00 (30 minutes)*

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**Presenter:** ARNO, Margaret

**Session Classification:** Track 1: Evaluation of Proliferation Resistance of Fast Reactors and Associated Fuel Cycles: Methodologies, Definitions, Assessment and Metrics

**Track Classification:** Track 1: Evaluation of Proliferation Resistance of Fast Reactors and Associated Fuel Cycles: Methodologies, Definitions, Assessment and Metrics

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# NEUTRONIC EVALUATION OF U-MN ALLOY AS AN ALTERNATIVE FUEL FOR THE DUAL FLUID REACTOR

*Tuesday 19 August 2025 10:30 (30 minutes)*

## Speaker's title

Ms

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**Session Classification:** Track 2: Reactor Design Features for Enhancing Proliferation Resistance

**Track Classification:** Track 2: Reactor Design Features for Enhancing Proliferation Resistance

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# **PROLIFERATION RESISTANCE AND PHYSICAL PROTECTION CROSSCUTTING TOPICS Application to GIF GEN IV Energy Systems and to Siting Study for AMRs and Microreactors**

*Monday 18 August 2025 16:30 (30 minutes)***Speaker's title**

Mr

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**Author:** NGUYEN, Frédéric (CEA)**Co-authors:** CIPITI, Benjamin (Sandia National Laboratories); VAN DER ENDE, Bryan (Canadian Nuclear Laboratories); COJAZZI, Giacomo G.M. (European Commission, Joint Research Centre, Institute for Transuranium Elements); RENDA, Guido (European Commission Joint Research Centre)**Presenter:** NGUYEN, Frédéric (CEA)**Session Classification:** Track 1: Evaluation of Proliferation Resistance of Fast Reactors and Associated Fuel Cycles: Methodologies, Definitions, Assessment and Metrics**Track Classification:** Track 1: Evaluation of Proliferation Resistance of Fast Reactors and Associated Fuel Cycles: Methodologies, Definitions, Assessment and Metrics



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## Track 2 General Discussion

*Tuesday 19 August 2025 11:30 (30 minutes)*

**Session Classification:** Track 2: Reactor Design Features for Enhancing Proliferation Resistance

Contribution ID: **30**

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## Track 3 General Discussion

*Tuesday 19 August 2025 16:00 (30 minutes)*

**Session Classification:** Track 3: Proliferation Resistance Considerations for Nuclear Fuel Cycles

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## Track 4 General Discussion

*Wednesday 20 August 2025 12:00 (1 hour)*

**Session Classification:** Track 4: Safeguardability of Fast Reactors and Associated Fuel Cycles