



**Technical Session W18**

**Recent Research and Applications of Severe Accident and Offsite Consequence Analysis**

Session Chair: **Patricia A. Santiago, Chief RES/DSA/AAB**

Session Coordinator: **Sergio Gonzalez and Laura Smith RES/DSA/AAB**

Office of Nuclear Regulatory Research

Rockville, MD  
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**Overview:**

Two NRC computer codes—MELCOR and MACCS (MELCOR Accident Consequence Code System)—are designed to model realistic outcomes of severe accident scenarios at nuclear power plants. These codes have been used in a number of recent applications, including an integrated deterministic and uncertainty analysis for the Sequoyah Nuclear Plant as part of the State of the-Art Reactor Consequence Analyses, benchmarking studies of the progression and offsite consequences of the accident at Fukushima, and the evaluation of options for containment protection and release reduction for boiling water reactors.

This session will provide an overview of selected recent applications of the MELCOR and MACCS severe accident codes and describe how insights from these applications are being used in the regulatory framework.

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**Presentations / Speakers:**

**SOARCA Severe Accident Progression Analysis for an Ice Condenser Plant:**  
Dr. Hossein Esmaili, Senior Reactor Systems Engineer, RES/DSA/FSCB

**SOARCA Offsite Consequence Analysis for an Ice Condenser Plant:**  
Dr. Alfred (Trey) Hathaway, Senior Reactor Systems Engineer, RES/DSA/AAB

**SOARCA Uncertainty Analysis for an Ice Condenser Plant:**  
Dr. Tina Ghosh, Senior Reactor Systems Engineer, RES/DSA/AAB

**Severe Accident and Consequence Analyses Supporting Regulatory Decisions After the Fukushima Accident:**  
William Reckley, Senior Project Manager, NRO/DEIA/ARPB

**OECD/NEA Project - Informing Severe Accident Management Guidelines (SAMGs) and Actions through Analytical Simulation:**  
Dr. Quanmin Lei, Technical Specialist, Canadian Nuclear Safety Commission

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**Session Notes:**

- For safety and security reasons, personal belongings such as tote bags, backpacks, etc. are not permitted to be placed around the perimeter of the session room.
- Be mindful of your exits. In the event of a hotel emergency (such as fire, evacuation, etc.), the hotel staff will advise how to proceed. In the event of a safety/security emergency, NRC Security or Montgomery County Police will advise how to proceed. In the event of a medical health emergency, call 911 or contact an NRC or hotel staff member to contact emergency services for you.
- Kindly silence your electronic devices while the session is in progress.
- If you need to leave the room during the session, please leave quietly. At the end of the session, please exit the session room promptly so that the room can be prepared for the next session.
- All sessions are being recorded. Recordings will be available on the RIC website after the conference.

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