

## WM2015 Conference Panel Report

**PANEL SESSION 004:**      **Interagency Community of Practice in Performance and Risk Assessment**

**Session Co-Chairs:**      **Christopher McKenney**, *US Nuclear Regulatory Commission*  
**Ming Zhu**, *US DOE*

**Panel Reporter:**          **Kent Rosenberger**, *Savannah River Remediation LLC*

### **Panelists:**

- **Joanna Burger**, *Professor II, Rutgers University*
- **Gregory Suber**, *Chief, Low-Level Waste Branch, US Nuclear Regulatory Commission*
- **Linda Suttora**, *Senior Technical Staff, Office of Environmental Compliance, US DOE*
- **Roger Seitz**, *Senior Advisory Scientist, Savannah River National Laboratory*

Approximately 25 people attended this panel session which focused on topics of interest to those involved in the field of performance and risk assessments. The session entailed each panel representative discussing information in their field of expertise related to performance and risk assessments.

### **Summary of Presentations:**

**Ming Zhu** kicked off the panel discussions by providing an overview of the Performance and Risk Assessment Community of Practice. This group encompasses various supporting agencies and their contractors, including the Department of Energy, Nuclear Regulatory Commission, Environmental Protection Agency, Washington State and the State of Kentucky among others. Dr. Zhu described the activities of the group in 2014 which included 5 webinars with an average participation of approximately 50 professionals and a three-day event in December 2014 which included talks by numerous practitioners in the field and a tour of the Nevada Nuclear Security Site. Dr. Zhu stated that planning is in progress for 2015 activities.

**Joanna Burger** discussed her experiences in effective risk communication. She discussed how the usual paradigm was used in communications to get groups together to develop research. She discussed various levels of commitment to communication including to inform, communicate, discuss, stakeholder driven and finally stakeholder participation with the final being the best option for effective risk communication. Dr. Burger discussed her specific experiences with the Alaskan Aleute community as an example of effective risk communication. She related specific actions that fostered trust in the risk evaluation including holding community meetings on the evaluation plan to gather stakeholder input, allowing the community members to assist in the collection of environmental samples via their traditional methods and being open to change during the course of the risk evaluation.

**Gregory Suber** discussed the status of the ongoing 10 CFR 61 rulemaking activities. Mr. Suber first described the history of the Nuclear Regulatory Commission direction related to the update of 10 CFR 61. The rulemaking commenced in 2008 via an NRC SECY paper related to concerns about disposal of large quantities of depleted uranium. In 2010 the NRC staff was directed to also incorporate waste blending into the rulemaking activities. In 2011 a draft rule was issued

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for comment which included key changes such as a 20,000 year period of performance, post-20,000 year peak evaluation and an intruder performance objective of 500 mrem.

Based on the 2011 draft rule, the Commission re-directed the staff to use current ICRP dose methodologies, consider a 2-Tiered period of performance, establish site-specific Waste Acceptance Criteria (WAC) based on a performance assessment and balance federal and state considerations.

In July 2013 a new draft rule was issued for comment which included a 10,000 year period of performance, post-10,000 year peak evaluation, an intruder performance objective of 500 mrem and the need for site-specific WAC. Guidance for the draft rule was issued in February 2014. Based on the consideration of comments from stakeholders and the public, NRC provided a proposed rule to the Commission in February 2015. The proposed rule includes a 3-Tiered period of performance for the Member of the Public which includes a 1,000 year compliance period with a 25 mrem/yr performance objective, 1,000 to 10,000 year performance assurance period with a 500 mrem/yr performance objective and a post-10,000 year period which no explicit numerical performance objective. The proposed rule also includes performance objectives for an inadvertent intruder and a defense-in-depth concept.

As of the date of the panel session the NRC is anticipating issuance of a Federal Register notice any day which will start a 120-day comment period on the proposed rule and the accompanying draft guidance document. The NRC plans to hold public meetings on the proposed rule in the Southern United States, Western United States and Washington D.C. in the near future.

**Linda Suttora** discussed the status of the ongoing activities to revise DOE Order 435. Ms. Suttora described the history of DOE Order 435 initially issued in 1999 and the on-going revision activities that began in 2010. The revision will combine the former Order and Manual into one document and have an accompanying guidance document. The new Order will be comprised of four sections: General Requirements, Low Level Waste, Transuranic Waste and High Level Waste. The General Requirements section will be the largest chapter as it will contain all requirements that are common to any waste type versus the previous practice of repeating common requirements in each waste type chapter. Thus the remaining chapters will only include those requirements specific to the individual waste type.

There will also be a technical standard that will include annotated outlines for documents that will support compliance with the revised Order. Key changes in the requirements are related to the Low Level Waste section including guidance to make off-site disposal easier, up-front planning for disposal and closure, establishing corporate boards, expectations for site processes and procedures, a formal change control process and consolidated waste guidance (concentration averaging). There was little change to the Transuranic Waste section and the High Level Waste section other than incorporation of the NDAA Section 3116 process in the High Level Waste section. The technical standard is a required document but includes examples on the Disposal Authorization Statement process, Performance Assessments, Composite Analyses, Waste Acceptance Criteria, preliminary and final monitoring plans, maintenance plans, closure plans, change control and annual summaries. The plan is to conduct a public comment period on the Order revision but the exact timing is not currently known.

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**Roger Seitz** discussed various ongoing international activities related to risk and performance assessments. Mr. Seitz discussed the International Atomic Energy Agency safety standards that provide guidance for radiological waste disposal, monitoring, surveillance and performance monitoring. He discussed two major projects that are in progress including MODARIA and HIDRA. The MODARIA project includes ten working groups which resulted in updated environmental uptake factors and is working on guidance for decommissioning, waste management after accidents and information networks in addition to other topics. The HIDRA project is dealing with the topic of human intrusion and is focused on general processes to consider, communication strategies and items to credit to reduce the likelihood/impact of intrusion as they can contribute to decision making during facility design, operations and closure. Mr. Seitz also discussed efforts by the Nuclear Energy Agency related to geologic disposal scenarios, experience summaries, Features, Events and Processes (FEPs) and records management to maintain facility knowledge.

There were ongoing questions and discussions during all of the panelist presentations. Question topics included:

- The definition of reasonableness or confidence level.
- Implementation of DOE Order 435 via a review plan.
- Acknowledgement that the 10 CFR 61 tier system relates to the level of confidence over various time periods as reflected in the varying dose limits.
- The potential overlap of IAEA, NEA and ICRP efforts and thoughts on collaborative efforts.
- The hope that the Risk and Performance Assessment Community of Practice will foster consistency in approaches for future evaluations.

The session concluded with thanks to the panelists and attendees from the Session Co-Chairs.