WM2014 Conference Panel Report

PANEL SESSION 24: Risk Regulations for Radioactive Waste Management

Co-Chairs :

Christine Gelles, *Associate Deputy Assistant Secretary, Office of Waste Management, DOE-EM*
Bill Levitan, *Associate Deputy Assistant Secretary, Office of Site Restoration, DOE-EM*

Panelists:

1. **Linda Suttora**, *Senior Technical Staff, US DOE Office of Environmental Compliance*
2. **Tom Morgan**, *US DOE Carlsbad Field Office*
3. **Frank DiSanza**, *Navarro Research and Engineering, Inc.*
4. **Chris Fisher**, *UK Office for Nuclear Regulation , UK*

Overview

This panel discussed the risk-informed provisions for waste management of US DOE and United Kingdom (UK) radioactive wastes. The US DOE proposed regulation (DOE Order 435.1A) will be released soon for public comment and panelists will discuss the provisions of this Order that have been revised in the proposal to improve the risk informed nature of the requirements. The panelists addressed the three major waste types used in classifying US DOE waste (LLW, TRU, HLW) and the general requirements applied to all wastes. The UK representative discussed implementation of the Low-Level Waste (LLW) disposal requirements issued by the Office for Nuclear Regulation

The session was very well attended and included two presentations, one of which was divided into three separate speakers. Each speaker responded to questions from the audience. The following is a summary of the presentations and discussion.

Bill Levitan opened the session with a summary of Christine Gelles and his role in the DOE organization. The first presentation was from **Chris Fisher** from the UK Office for Nuclear Regulation. He summarized the regulatory structure in the UK. The UK approach places emphasis on the role of a graded approach to regulation based on the level of risk associated with an activity. His presentation included a summary of the evolution of the nuclear safety regulatory body in the UK and the formation of the Office for Nuclear Regulation in 2011. The Nuclear Installations Act addresses waste management and also addresses the European Union directive on radioactive waste management. The UK approach emphasizes the waste hierarchy to try to limit the amount of waste that would require disposal. The UK uses the concept of an integrated waste management strategy. The strategy includes cradle to grave considerations using the Radioactive Waste Management Case to address the lifecycle for waste streams.

Some perspective was provided regarding the types of legacy wastes that must be managed and the rigorous implementation of the waste management hierarchy for the case of new nuclear activities. The Nuclear Decommissioning Authority is addressing legacy activities and also formed the Radioactive Waste Management Directorate to implement geologic disposal for higher activity wastes. A generic Disposal System

Safety Case was published in 2010. The case concluded that disposal was a viable option to be considered further. He emphasized the communications have been considered to be critical for successful implementation and also that the Office for Nuclear Regulation uses a risk-informed approach and can be flexible when considering appropriate approaches for regulation in specific cases.

There were a few questions following the presentation. The first question addressed Scottish plans for waste management. Chris indicated that Scotland is not planning to develop a disposal facility for HLW and will be storing the waste. Another question addressed clarification regarding the generic safety case. The generic case for geologic disposal addressed a variety of conditions to support further siting efforts. The Environment Agency and the Office for Nuclear Regulation reviewed the generic case. He also clarified that for the Low-Level Waste Repository, the Office for Nuclear Regulation oversees operations and the Environment Agency addresses disposal.

Linda Suttora opened the second presentation on DOE risk informed regulations for waste management with a brief summary of the history of waste management regulations for DOE. She introduced the team based approach being taken for the current effort to update DOE Order 435.1. The effort is organized around the four key chapters of the requirements (General Requirements, HLW, TRU, and LLW). Linda emphasized that, although the format is being modified and some new information is being included for clarification, the overall approach in the new Order is expected to still be very similar. She then summarized a few of the changes for the Chapters on General Requirements and HLW. For general requirements, there is increased emphasis on strategic planning for waste management and expectations for the Radioactive Waste Management Basis. The concepts of a one-touch philosophy (early packaging for final disposal) and consolidation of different wastes are also addressed. Joel Case was unable to attend, so Linda also addressed the chapter on HLW. Some of the key changes in that Chapter included the addition of considerations related to Section 3116 which addresses tank closure. Additional information regarding implementation of the Waste Incidental to Reprocessing is also being included in the current draft.

Tom Morgan, Certification Manager for the National TRU Program, addressed the Chapter on TRU waste management. That Chapter remains very similar, but improvements have been made to clarify guidance and additional examples have been developed to address considerations related to packaging and transportation and TRU certification. A number of non-TRU specific requirements have also been consolidated in the general requirements. **Frank DiSanza**, former Federal Project Director for Waste Management at the Nevada National Security Site, then addressed LLW and a new Technical Standard being developed to provide detailed requirements for documentation in support of a Disposal Authorization for LLW disposal facilities. The technical standard consolidates information that had previously been documented in guidance that had never been formally included in the directives system. The technical standard includes detailed expectations for performance assessments, composite analyses, monitoring and closure plans, a process to address unreviewed waste management questions (similar to the USQ

process), and other specific requirements. The technical standard also includes examples and reflects best practices from past experiences.

Linda Suttora then provided a brief summary of the path forward for the update to DOE Order 435.1. The Order is currently in a review at HQ, then it will be sent for a review at DOE Field Offices, followed by a public review phase. Comments will then be addressed and a final revision prepared to be submitted to the formal DOE Order approval process. Following this process, the Order will be issued and implemented in the DOE complex. Bill Levitan indicated that the current DOE Order is functioning well, so there is not an urgent need to complete the revision.

There were several questions and active discussion following the presentations. The first question addressed the waste categories in the UK which are relatively simple (LLW is specifically defined, HLW involves heat generation, and ILW is waste that falls between LLW and HLW. Chris indicated that the current system has proved to be functional, although he can see the rationale for other approaches as well. The US DOE classification scheme was then discussed where HLW, TRU and a few specific wastes (e.g., NORM) are defined and LLW is the remaining waste that is not defined specifically. There was a question about transportation and Frank indicated that transport in the United States is governed by the Department of Transportation. The definition of TRU was discussed and Chris indicated that Pu in a pure form is not considered a waste in the UK. There was a question about HLW in the UK and Chris indicated that some research fuel and other specific cases are not considered HLW.
The concept of a graded approach was discussed and both the UK and US DOE apply regulations recognizing the level of risk with a given activity. Additional discussion addressed implementation of the risk-informed approach and efforts to provide training and information sharing across the multiple sites regulated by the US DOE.