

WM2008 Conference Panel Reports

Session 56

Panel: New Nuclear Power Plant - Radioactive Waste Systems and Design

Panel Reporter: Jay J. Maisler, ENERCON Services, Inc.

The purpose of this panel provided a forum for discussions on radioactive waste challenges facing the licensing and operation of new nuclear plants in the United States. The new generation of new plants that will be built in the US incorporate many design improvements, included advancements in radioactive waste processing. Reactor vendors discussed radioactive waste system aspects of designs certified by the US NRC.

The following individuals participated in the panel:

- Jay Maisler, ENERCON Services, Inc., (Session Co-Chair)
- Sean Bushart, Electric Power Research Institute, (Session Co-Chair)
- Dale McCullough, GE-Hitachi
- Tim Meneely, Westinghouse
- Richard Frank, AREVA

Combined License Application Overview – Jay Maisler, Senior Consultant for ENERCON Services provided an overview of the combined license application process in the U.S. Jay spoke about the status of applications that have been submitted to the U.S. Nuclear Regulatory Commission and those expected during the coming year.

The EPRI Perspective – Sean Bushart, Program Manager for the Electric Power Research Institute, provided an overview of activities undertaken by the nuclear power industry in preparing for the Nuclear Renaissance. One of the significant design features that will be incorporated into the new reactor plant designs is skid-mounted liquid radioactive waste processing systems. This concept recognizes continuing improvement and advancements in designs of these systems and allows cost-effective replacement as new technology is available.

GE-Hitachi – Dale McCullough provided an interesting discussion of the radioactive waste system features for the Advance Boiling Water Reactor (ABWR) and Economic Simplified Boiling Water Reactor (ESBWR). Based on the operating experience for the current U.S. nuclear power plants, GE-Hitachi's designs do not include evaporators for liquid radioactive waste processing. As discussed by Dr. Bushart, the ABWR and ESBWR accommodate skid mounted liquid radioactive waste processing equipment.

Westinghouse – Tim Meneely discussed the design features of the AP1000 radioactive waste systems. The AP1000 design has been certified by the U.S. Nuclear Regulatory Commission. Liquid waste processing does not include evaporators for U.S. plants and incorporates features to support skid-mounted processing systems.

AREVA – Richard Frank presented the EPR radioactive waste system design information. Because the EPR is of European design, the use of evaporators is an option that can be selected. Richard noted that evaporator technology has advanced and works well at nuclear plants outside

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the U.S. Richard also noted the unique approach to safety system train alignment at the EPR – four trains have 90 degrees of separation and the plant is designed to operate safely when one train is taken out of service for maintenance.

Attendance at Panel 56 was approximately 40 attendees. The audience showed a keen interest in the topics discussed by the panel as evidenced by a lively question and answer session that followed the each presentation. The topic of evaporators was a hot topic for discussion with international attendees generally supporting this technology and Americans sharing concerns based on U.S. operating history. Continuing advancements in radioactive waste system technologies proved to be a relevant topic for Waste Management '08.