

March 11, 2011

MEMORANDUM TO: Chairman Jaczko
Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff

FROM: Catherine Haney, Director */RA Daniel H. Dorman for/*
Office of Nuclear Material Safety
and Safeguards

SUBJECT: PAPER COMPARING INTEGRATED SAFETY ANALYSIS FOR
FUEL CYCLE FACILITIES AND PROBABILISTIC RISK
ASSESSMENT FOR REACTORS

The purpose of this memorandum is to transmit to the Commission the staff's paper comparing integrated safety analysis (ISA) for fuel cycle facilities and probabilistic risk assessment (PRA) for reactors.

The staff requirements memorandum (SRM) in response to the Commission briefing of April 29, 2010 (SRM-M100429, dated May 12, 2010), on revising the fuel cycle oversight program, directed the staff of the U.S. Nuclear Regulatory Commission (NRC) to produce a concise paper comparing ISAs for fuel cycle facilities and PRAs for reactors, including a critical evaluation of the differences between ISAs and PRAs. The NRC staff prepared the enclosed paper in response to the SRM direction.

The Commission also directed staff to submit this comparison paper to the Advisory Committee on Reactor Safeguards (ACRS) and engage stakeholders to gain their insights and develop recommendations for next steps. The staff conducted a public meeting on November 5, 2010. Only Nuclear Energy Institute representatives provided written comments on the draft paper (ADAMS Accession No. ML103270613). The NRC staff considered the industry comments as appropriate in preparing a revised draft of the paper. The staff submitted the comparison paper to ACRS on December 15, 2010, briefed the ACRS subcommittee on January 11, 2011, and presented the ISA/PRA paper to the ACRS Full Committee on February 10, 2011.

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On February 22, 2011, the staff received the ACRS letter report (ML110460328). The ACRS concluded that "ISAs, in combination with practices required by current regulations, are adequate for the protection of the health and safety of workers and the public, and for licensing fuel cycle facilities (FCFs) under 10 CFR Part 70." They further concluded that "for more complex facilities, especially those with the potential for large radiological exposure or releases, the use of a PRA approach is advantageous because it provides a basis for prioritization of safety systems and maintenance activities." Finally, the committee recommended that "the staff should continue to develop and test the use of focused PRA-like analyses to help assess the risk significance of inspection findings for FCFs." The staff is currently preparing a response to the ACRS letter report.

Consistent with the SRM for SECY-10-0031, "Revising the Fuel Cycle Oversight Process," the staff is developing a set of cornerstones. The staff will integrate the knowledge gained from the ISA/PRA comparison and the cornerstone development to provide recommendations for the next steps on revising the fuel cycle oversight process. These recommendations will be provided to the Commission in July 2011.

Enclosure: ISA/PRA Comparison Paper

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