

International Conference on Management of Spent Fuel from Nuclear Power Reactors: An Integrated Approach to the Back End of the Fuel Cycle



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Linking Nuclear Security to Spent Fuel Management

National authorities balance technical, economic, legal and political considerations in assessing the best options for storage, handling, processing and disposing of spent nuclear fuel (SNF) and waste. Nuclear security and nonproliferation objectives should be integral elements of those considerations. In evaluating fuel cycle and R&D programs, the Blue Ribbon Commission assessed cost, safety, resource utilization and sustainability, and the promotion of nuclear nonproliferation and counter-terrorism goals. The Subcommittee stated in its report that “nonproliferation and counter-terrorism are particularly important considerations that have not always received the attention they deserve in evaluations of fuel cycles and nuclear energy alternatives.”

Proliferation risks are largely more familiar than nuclear security risks when it comes to fuel cycle management because they have been discussed for decades, while experts have only just begun to consider the nuclear security ramifications of fuel management. The nuclear security summit process has placed more emphasis on securing HEU rather than Pu because HEU is a more attractive target of theft by terrorists. The fact that most elements of the back end present fairly formidable obstacles to theft, with the exception of separated plutonium and facilities that can be sabotaged, also contributes to the lack of attention to nuclear security on the back end.

Drawing on work funded by the MacArthur Foundation and the Carnegie Corporation of New York, the principal investigator will present an analysis of how fuel cycle choices might be influenced by greater attention to nuclear security. Examples include when to move SNF from wet to dry storage, consolidation choices, and coordination of storage and repository implementation. The paper will also offer recommendations on principles to help guide such decision-making.

Country/ int. organization

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