



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

March 6, 2020

**MEMORANDUM TO:** Andrea Kock, Director  
Division of Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

**FROM:** Alayna Pearson, Acting Branch Chief  
Inspection and Oversight Branch  
Division of Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

**SUBJECT:** INDEPENDENT SPENT FUEL STORAGE INSTALLATION  
INSPECTION PROGRAM ENHANCEMENT INITIATIVE  
ASSESSMENT AND RECOMMENDATIONS

This memorandum provides the recommendations of the working group established to provide risk-informed enhancements to the Independent Spent Fuel Storage Installation (ISFSI) Inspection Program. The initiative is responsive to the working group guidance and feedback from stakeholders received during external engagements and public meetings, where the status was discussed and/or input on the ISFSI enhancement initiative was sought.

The ISFSI Inspection Program Enhancement Initiative working group completed their work per the direction of the Division of Fuel Management (DFM) (formerly the Division of Spent Fuel Management) Division Director, as described in the working group guidance dated June 4, 2019 [Agencywide Documents Access and Management System] (ADAMS Accession No. ML19155A273). The working group included representation from each Regional office, the Office of Nuclear Material Safety and Safeguards and the Office of Nuclear Reactor Regulation. Additionally, the working group consulted with knowledgeable staff from the Office of Research, as needed, to fully inform the highly collaborative decision-making effort. While the working group concluded that the ISFSI inspection program is effective, the working group developed recommendations that enhance the current program, through additional risk informing of inspection activities and revising qualification and training requirements for ISFSI inspectors.

The working group used probabilistic risk analyses, byproduct material radiation exposure studies, subject matter expertise, operating experience, and lessons learned from 30 years of ISFSI inspection history to inform the recommended revisions to the program. The working group developed a novel approach to training and qualification requirements by proposing the concept of a "partial qualification" as part of a new cross-qualification program for certain staff already qualified under Inspection Manual Chapter 1245, "Qualification Program for New and Operating Reactor Programs." This provides a practical solution to enable staff with certain

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reactor inspector qualifications to obtain the requisite training without having to obtain a full ISFSI inspector qualification.

The working group proposed revisions to inspection procedures to clarify inspection requirements and level of effort; and prioritized the inspection activities performed based on the risk of the activities, emphasizing the importance of performance based, real time observations of activities, where possible. The areas of security, transportation, vendor inspections and aging management as they relate to ISFSIs were outside the scope of the initiative and therefore not reviewed in the working group's assessment.

The results of the working group's assessment and recommendations were documented in a memorandum dated October 2, 2019, from the working group to the Director of DFM for consideration (ADAMS Accession No. ML19277G895). The memorandum included two enclosures that describe the recommendations (ADAMS Accession Nos. ML19277G878 and ML19277G879). These documents were shared with the applicable regional office Division Directors to obtain feedback and concurrence. In addition, they were made publicly available in advance of a public meeting held at the U.S. Nuclear Regulatory Commission (NRC) headquarters on December 2, 2019, to solicit stakeholder feedback, which was accepted through December 20, 2019.

The attached report contains an updated summary of the working group's recommendations and incorporates feedback on the draft recommendations received from each of the Regional offices and external stakeholders. The working group recommends a risk informed inspection program that incorporates five safety focus areas (risk significant areas) in the oversight program and includes 1) a triennial inspection frequency for routine inspections, 2) inspections performed by qualified ISFSI inspectors using current qualification requirements or application of a "partial qualified" concept as part of the new cross-qualification program, 3) a revised level of effort estimate and focus on the risk-significant ISFSI activities for each applicable inspection procedure, and 4) ISFSI inspections funded solely by the Spent Fuel Storage and Transportation (SFST) business line. The working group believes that implementing the recommendations will result in a reliable, risk-informed, comprehensive, and consistent approach to ISFSI inspections across the NRC's Regional offices. In addition, successful implementation of the working group's recommendations across all NRC regions will ensure that the NRC maintains focus on its mission while supporting the NRC's vision of becoming a modern, risk-informed regulator by embracing improvements in our decision-making and a graded approach to safety.

After a final decision on the recommendations is made by the DFM Director, who is delegated the authority to make the decision in IMC 0040, Preparing, Revising and Issuing Documents for the NRC Inspection Manual (ADAMS Accession No. ML18003A122), the DFM Inspection and Oversight Branch staff will begin moving forward with implementation. Completion of the enhancement activities is planned to occur by the end of calendar year 2020 with full implementation of the new ISFSI inspection program starting in calendar year 2021.

Enclosure:  
Recommendations for Enhancement  
of the ISFSI Inspection Program

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PROGRAM ENHANCEMENT INITIATIVE ASSESSMENT AND  
RECOMMENDATIONS

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