

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555-0001

June 26, 1997

NRC INFORMATION NOTICES 97-39: INADEQUATE 10 CFR 72.48 SAFETY
EVALUATIONS OF INDEPENDENT SPENT FUEL
STORAGE INSTALLATIONS

Addressees

All holders of operating licenses or construction permits for nuclear power reactors. All holders of licenses for independent spent fuel storage installations (ISFSIs).

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice to alert addressees to inadequate safety evaluations performed under Section 72.48 of Title 10 of the *Code of Federal Regulations* (10 CFR 72.48). It is expected that the recipients will review this information notice for applicability to their facilities and consider actions, as appropriate. However, suggestions contained in this information notice are not NRC requirements; therefore, no specific action or written response is required.

Background

Section 72.48, "Changes, tests, and experiments," states that a holder of an ISFSI license may make changes in the ISFSI described in the safety analysis report (SAR), may make changes in the procedures described in the SAR, or may conduct tests or experiments not described in the SAR, without prior NRC approval, unless the proposed change, test, or experiment involves a change in the license conditions incorporated in the license, an unreviewed safety question, a significant increase in occupational exposure, or a significant unreviewed environmental impact. A proposed change is deemed to involve an unreviewed safety question if the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the SAR may be increased, if a possibility for an accident or malfunction of a different type than any evaluated previously in the SAR may be created, or if the margin of safety as defined in the basis for any technical specification is reduced. The licensee is required to maintain records of changes made to the ISFSI, which include a written safety evaluation that provides the bases for the determination that each change, test, or experiment does not involve an unreviewed safety question.

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Description of Circumstances

The NRC performs inspections of ISFSI licensees to verify adequate implementation of 10 CFR 72.48 requirements. Recent NRC inspections at several ISFSI licensees have identified violations of these requirements. These violations involve failure by the licensees to perform 10 CFR 72.48 safety evaluations when applicable and failure to document sufficient technical justification to support safety evaluation conclusions. A summary of inspection findings follows.

The NRC issued a violation to Arkansas Nuclear One (ANO), owned and operated by Entergy Operations, Inc. The violation was based on an inspection conducted at ANO (Inspection Report Nos. 50-313/96-25; 72-13/96-02). The licensee has a Part 72 general license to store spent fuel at an ISFSI and uses the Sierra Nuclear Corporation ventilated storage cask, model VSC-24. The inspection identified 12 nonconformances that were not evaluated in accordance with 10 CFR 72.48. The licensee considered nonconformances as one-time changes to its SAR that did not require a safety evaluation because they were not permanent design changes. The licensee accepted the nonconformances as "use as-is" without addressing 10 CFR 72.48 requirements. The inspectors concluded that the licensee did not adequately evaluate the conditions to ensure that an unreviewed safety question did not exist. The licensee reevaluated the identified nonconformances under 10 CFR 72.48 requirements and did not identify any unreviewed safety questions. The licensee also reevaluated nine other nonconformances that had originally been resolved as "use as-is" and did not identify any unreviewed safety questions. In addition, the licensee revised its procedures to require an engineering evaluation for a "use as-is" determination, which requires a 10 CFR 72.48 review, when applicable.

The NRC issued a violation to Point Beach Nuclear Plant (PBNP), owned and operated by Wisconsin Electric Power Company. The violation was based on inspections conducted at PBNP (Inspection Report Nos. 50-266/301-95008; 50-266/301-95014). The licensee has a Part 72 general license to store spent fuel at an ISFSI and uses the VSC-24 cask. The inspections identified several one-time dimensional changes and other changes that either should have received a 10 CFR 72.48 safety evaluation or that did not receive an adequate safety evaluation. In one such safety evaluation, the licensee did not adequately discuss the geometric effects on criticality when reducing the thickness of spent fuel guide sleeves in the VSC-24 fuel basket. The licensee subsequently revised its safety evaluation to address the geometric effects on criticality. In another case, the licensee did not perform a safety evaluation to allow the VSC-24 to be reflooded with a flow rate between 34 L/min (9 gpm) and 42 L/min (11 gpm) during loading and unloading. This oversight was of concern because the pressure transient calculation for the cask pressure was only valid for a flow rate of 38 L/min (10 gpm) or less. The licensee subsequently revised reflooding procedures to ensure that a flow rate of 38 L/min (10 gpm) is not exceeded. In response to the inspection findings, the licensee screened all other design and procedure changes made to its ISFSI and performed full 10 CFR 72.48 safety evaluations, as necessary. The licensee did not identify any unreviewed safety questions.

Another violation was issued to PBNP, in part, because the licensee failed to perform adequate safety evaluations for two procedures. The violation was based on an augmented inspection team inspection at PBNP (Enforcement Action [EA] 96-273 and Inspection Report No. 50-266/301-96005). The licensee did not perform a 10 CFR 72.48 safety evaluation for a lifting evolution that created a potential for dropping the VSC-24 multi-assembly sealed basket (MSB) transfer cask off the top of the ventilated concrete cask, an accident not described in the SAR. The licensee also did not provide sufficient technical justification to support conclusions in a safety evaluation for an MSB weighing procedure. The safety evaluation did not include supporting information that ensured that the shield lid would not be inadvertently removed from the MSB and expose the workers to spent fuel. Before lifting the lid, the licensee developed a new weighing procedure that did not create the potential to inadvertently remove the lid.

The NRC issued a violation to Prairie Island Nuclear Plant (PI), owned and operated by Northern States Power Company. The violation was based on an inspection conducted at PI (Inspection Report Nos. 50-282/95002; 50-306/95002; 72-10/95002). The licensee has a Part 72 site-specific license to store spent fuel in the Transnuclear, Inc., metal storage cask, model TN-40. Upon initial inspection, the inspectors determined that the licensee did not have a procedure in place for conducting 10 CFR 72.48 safety evaluations. The licensee subsequently revised its procedures to incorporate 10 CFR 72.48 safety evaluations into its existing 10 CFR 50.59 review process. The inspectors then reviewed a sample safety evaluation and found that it was not adequate. The sample did not address 10 CFR 72.48 requirements on a TN-40 lifting beam, which is described in its ISFSI SAR. The licensee believed that only a 10 CFR 50.59 safety evaluation was required because the cask-handling equipment was used in the Auxiliary Building. The inspectors discussed with the licensee the need to conduct a 10 CFR 72.48 safety evaluation if changes were made to any equipment that was described in the ISFSI SAR, independent of whether the equipment was used to handle the cask in the Auxiliary Building. The licensee subsequently performed a 10 CFR 72.48 safety evaluation on the TN-40 lifting beam.

Discussion

The NRC inspects licensees to assess the adequacy of their programs to perform safety evaluations in accordance with 10 CFR 72.48. Holders of an ISFSI license are required by 10 CFR 72.48 to perform a safety evaluation when changing a component or a procedure described in the ISFSI SAR and, in the case of a general licensee, the cask SAR. The licensee's determination that a modification to an ISFSI does not involve an unreviewed safety question provides confidence that the bases on which the NRC issued a license to operate an ISFSI are preserved.

An NRC-licensed ISFSI that uses dry-storage casks is a passive system in which its structural, criticality-control, thermal, and shielding performances depend on the detailed drawings and descriptions provided as the design bases in the SAR. It is important that the licensee perform an adequate 10 CFR 72.48 safety evaluation of any modification in the ISFSI SAR or cask SAR, including any changes in dimensions, materials, and procedures. In addition, one-time changes to the ISFSI SAR or the cask SAR constitute a modification that also requires an adequate 10 CFR 72.48 safety evaluation.

Related Generic Communications

IN 95-29, "Oversight of Design and Fabrication Activities for Metal Components Used in Spent Fuel Dry Storage Systems," dated June 7, 1995.

IN 96-34, "Hydrogen Gas Ignition During Closure Welding of a VSC-24 Multi-Assembly Sealed Basket," dated May 31, 1996.

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please contact one of the technical contacts listed below or the appropriate Office of Nuclear Material Safety and Safeguards (NMSS) project manager.



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Attachments:

1. List of Recently Issued NMSS Information Notices
2. List of Recently Issued NRC Information Notices

Attachment filed in Jacket

LIST OF RECENTLY ISSUED
NMSS INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
96-53, Supp. 1	Retrofit to Amersham 660 Posilock Radiography Camera to Correct Inconsistency in 10 CFR Part 34 Compatibility	06/23/97	All industrial radiography licensees
97-35	Retrofit to Industrial Nuclear Company (INC) IR100 Radiography Camera to Correct Inconsistency in 10 CFR Part 34 Compatibility	06/18/97	All industrial radiography licensees
97-30	Control of Licensed Material During Reorganizations, Employee-Management Disagreements, and Financial Crises	06/03/97	All material and fuel cycle licensees
97-24	Failure of Packing Nuts on One-Inch Uranium Hexafluoride Cylinder Valves	05/08/97	All U.S. Nuclear Regulatory Commission licensees and certificates authorized to handle uranium hexafluoride in 30- and 48-inch diameter cylinders
97-23	Evaluation and Reporting of Fires and Unplanned Chemical Reaction Events at Fuel Cycle Facilities	05/07/97	All fuel cycle conversion, enrichment, and fabrication facilities
97-20	Identification of Certain Uranium Hexafluoride Cylinders that do not Comply with ANSI N14.1 Fabrication Standards	04/17/97	Registered users of transportation packages for uranium hexafluoride

LIST OF RECENTLY ISSUED
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Information Notice No.	Subject	Date of Issuance	Issued to
97-38	Level-Sensing System Initiates Common-Mode Failure of High-Pressure-Injection Pumps	06/24/97	All holders of OLs or CPs for nuclear power reactors
96-53, Supp. 1	Retrofit to Amersham 660 Posilock Radiography Camera to Correct Inconsistency in 10 CFR Part 34 Compatibility	06/23/97	All industrial radiography licensees
97-37	Main Transformer Fault with Ensuing Oil Spill into Turbine Building	06/20/97	All holders of OLs or CPs for nuclear power reactors
97-36	Unplanned Intakes by Worker of Transuranic Airborne Radioactive Materials and External Exposure Due to Inadequate Control of Work	06/20/97	All holders of OLs and CPs permits. All licensees of nuclear power reactors in the decommissioning stage and fuel cycle
97-35	Retrofit to Industrial Nuclear Company (INC) IR100 Radiography Camera to Correct Inconsistency in 10 CFR Part 34 Compatibility	06/18/97	All industrial radiography licensees

OL = Operating License
CP = Construction Permit

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 Marylee M. Slosson, Acting Director
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Tech Editor has reviewed and concurred on 4/15/97

OFC	SFPO	E	SFPO	E	C:PECB	E	D:DRPM	E
NAME	MWaters 5/08/97* VHodge 5/23/97*		WKane*		AChaffee*		MSlosson	
DATE	5/97		05/28/97		06/03/97		/ /97	

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*NRR/PDB3
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NAME	MWaters:dd:vt		VHodge		WKane		AChaffee		MSlosson			
DATE	5/8/97		1/97		5/12/97		1/97		1/97			1/97

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