

10 CFR 72.48 Implementation Guidance

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Spent Fuel Storage and Nuclear Safety

- Licensees and CoC holders are ultimately responsible for ensuring the safety of spent nuclear fuel storage at ISFSIs
- Over 30 years, 2,400 casks have been placed into service and continue to operate safely
- The cask designers are the technical experts and must have the ability to make some safety improvements without NRC approval – this is the purpose of the 10 CFR 72.48 rule
 - Licensees and CoC holders internally audit 72.48 program implementation
 - Licensees also oversee CoC holder work
- The NRC's inspection program provides additional oversight of licensee and CoC holder activities affecting nuclear safety

Treatment of UFSAR Information

- Industry treats all information in the ISFSI or cask UFSAR as approved by the NRC
- As such, descriptions of MOEs in the UFSAR are considered approved
- Industry considers the ISFSI and cask FSARs as enforceable requirements
- Compliance with FSAR requirements and license or CoC requirements is treated the same

Guidance Work to Date

- NEI guidance for implementation of 10 CFR 50.59 and 10 CFR 72.48 were NRC-endorsed in 2001 after rule change
 - NEI 96-07 (50.59) and 96-07, Appendix B (72.48)
- After 10+ years of experience, Industry and NRC agreed the 72.48 guidance would benefit from an update
- Industry developed updated 72.48 guidance, NEI 12-04
- Objective of NEI 12-04 is to clarify and enhanced already-endorsed guidance
- Meeting held in March 2016 with NRC to discuss issues where alignment was needed for endorsement

Fundamental Issues

1. Definition and use of the word “implementation”
2. General licensee processing of CoC holder 72.48s
3. Purpose and scope of 72.48 versus QA program
4. Approval of cask design and use of methods of evaluation described in the ISFSI or cask FSAR

Key Issues

1. Use of the word “change”
2. Changing site-specific processes
3. Mixing general licensee and specific licensee guidance
4. CoC holder 72.48 reviews for licensee-approved 72.48s
5. Answering 72.48 Questions 1-7 versus only Question 8
6. Documenting 72.48 evaluations
7. Reporting 72.48 evaluations

Latest Developments

- NEI summarized the March public meeting on the fundamental issues and included clarifications on the additional key issues in an August letter to the NRC
 - ML16251A025 - Letter
 - ML16251A028 - Attachment
- Industry believes alignment was reached on all but one issue – method of evaluation (MOE)
- NRC response needed to assure predictability going forward

Method of Evaluation (MOE)

- NRC comment on NEI 12-04:

“Licensees and CoC holders have construed 10 CFR 72.48(a)(2)(ii) to mean that MOEs in FSARs for approved ISFSI and cask designs are approved MOEs. Under this view, such MOEs are “approved by NRC for the intended application,” and can be used to make changes without having to obtain prior NRC approval under 10 CFR 72.48(c)(2)(viii). The staff does not agree with this view.”

- 72.48(a)(2)(ii):

“Departure from a method of evaluation means...changing from a method described in the FSAR to another method unless that method has been approved by NRC for the intended application”

Discussion from March 2016 Public Meeting

- NRC approves cask designs, but not the methods of evaluation used by the designers to analyze the cask designs
 - MOEs described in FSAR are not “approved”
 - Generic MOE approval may be sought via topical report
- NRC expanded the definition of the term “intended application” to include the license application, i.e.:
 - MOEs described in specific FSAR revisions only apply to the cask design as described in the CoC version connected to that FSAR revision
 - Licensees and CoC holders cannot apply MOEs across licenses, across CoCs, or across amendments for the same CoC

How Should NEI-12-04 Address MOE?

- MOEs are reviewed and approved by the NRC within narrow confines of licensing actions unless a broader action is requested for review by the applicant
- Industry's view is that this narrow NRC approval does not:
 - prohibit use of new or different MOEs without generic NRC approval, or
 - prohibit use of those MOEs across licenses and CoCs, or across amendments within the same CoCs
- NEI 96-07 addresses this topic in detail to guide the user and the NRC
- NEI 12-04 can better define those confines, remaining consistent with the intent of the previously endorsed guidance for both 50.59 and 72.48 regarding “intended application”

Method of Evaluation Guidance

- NEI 96-07 (50.59) and Appendix B (72.48) refine the definition of method of evaluation as:

▀ B3.10 METHODS OF EVALUATION ¶

Definition: ¶

Methods of evaluation means the calculational framework used for evaluating behavior or response of the ISFSI facility, cask design, or an SSC. ¶

Changes to MOEs

- 10 CFR 72.48(c)(2)(viii) permits changes to an MOE without prior NRC approval in one of two ways:
 1. A change to an element of an existing MOE that yields results that are essentially the same or conservative
 2. Use of a new or different MOE that has been approved by the NRC for the intended application

Using New or Different MOEs

- An MOE need not be generically approved by the NRC to be considered “approved by the NRC for the intended application”
- NEI 96-07, Appendix B, Section B.4.3.8.2:
“A new method is approved by the NRC for intended application if it is approved for the type of analysis being conducted, and applicable terms, conditions and limitations for its use are satisfied”

Using New or Different MOEs

- MOEs can be used across different amendments of a CoC and different licenses/CoCs provided the 72.48 guidance for use of a different MOE is followed
- Key criteria for using a new/different MOE:
 - Appropriate for the physical problem being analyzed
 - Within applicable limitations and constraints
- NEI 96-07, Appendix B, Section B4.3.8 includes a complete list of considerations to determine if an MOE change requires NRC approval

Approved for the Intended Application

- Topic of much discussion with NRC during guidance development and endorsement process
- NRC internal meeting summary of November 11, 1999 provides restrictions on this concept for 50.59
 - Qualification process for users of the MOE akin to Generic Letter 83-11, Supplement 1
 - Identify all conditions under which the MOE received approval
 - Type of analysis
 - Manner analysis was applied
 - Facility configuration
 - Licensing basis restrictions
 - Cannot adopt less restrictive licensing basis assumptions

Practical Considerations

- General licensees may use any approved version of a cask CoC and maintain that licensing basis indefinitely
- Changes to older cask designs may not be able to be evaluated using the contemporaneous MOE version due to software evolution (code or version)
- Older codes or versions may no longer be supported by the owners of the codes

Practical Considerations

- A dramatic increase in amendments and exemptions will result requests if:
 - MOEs described in the FSAR are not considered approved - technical impacts of facility and cask changes cannot be evaluated using that MOE
 - MOEs become obsolete and cannot be replaced with new or different MOEs by the cask designer
- These licensing actions will be inconsequential from a public health and safety standpoint
- This increased in regulatory burden would contradict the goals of Project AIM and the delivering Nuclear Promise

Summary

- Use of an MOE approved under one license on a different license was discussed between Industry and NRC in public meetings when NEI 96-07 was endorsed for 50.59
- 72.48 guidance mimics 50.59 guidance
- Discussions between Industry and NRC on the topic of “intended application” during guidance endorsement process are documented
- Currently endorsed guidance supports 15 years of industry practice and successful NRC inspections

Conclusion

- Industry and NRC are close to alignment on the main issues to permit the endorsement of NEI 12-04 to move forward
- The issue of MOE is the remaining issue where differences exist
- Industry and NRC need closure on NEI 12-04 endorsement to ensure a stable and predictable regulatory environment