

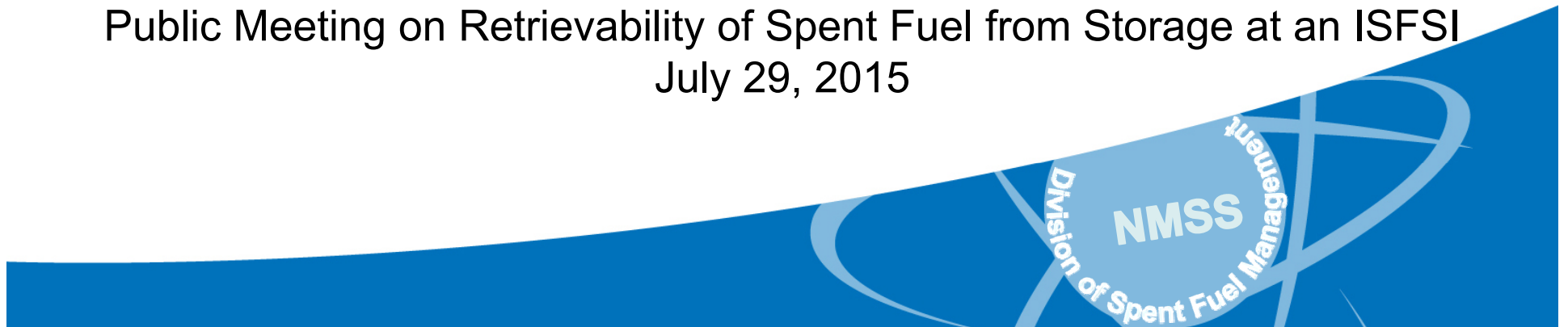


Fuel Retrievability for Storage Under Part 72

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Public Meeting on Retrievability of Spent Fuel from Storage at an ISFSI
July 29, 2015



Outline

- Applicable Regulations
- Current Guidance
- Current Storage Period
- Extended Storage Period
- Public Interactions
- Retrievability Considerations
- Proposed Guidance for Ready Retrieval
- Proposed Additional Guidance
- Proposed Path Forward

Applicable Regulations



- Applies to general and specific licensed ISFSIs
- 10 CFR 72.122(I) - retrievability

“Storage systems must be designed to allow ready retrieval of spent fuel, high level radioactive waste, and reactor-related GTCC waste for further processing or disposal”

Applicable Regulations(con't)



- 10 CFR 72.122(h)(1)

“The spent fuel cladding must be protected during storage against degradation that leads to gross rupture or the fuel must be otherwise confined such that degradation of the fuel *will not pose operational safety problems with respect to its removal from storage*. This may be accomplished by canning of consolidated fuel rods or unconsolidated assemblies or other means as appropriate.”



Applicable Regulations(con't)



- Certificate of compliance for storage
- 10 CFR 72.236(m)

“To the extent practicable in the design of storage casks, consideration should be given to compatibility with removal of the stored spent fuel from the reactor site, transportation, and ultimate disposition by the Department of Energy.”



Current Guidance

- ISG-2 Revision 1 and NUREG-1536
- Ready retrieval:
 - The cask/canister containing the spent fuel must be able to be packaged for transport, or moved to a location where the spent fuel can be removed
 - Individual spent fuel assemblies & canned fuel must be able to be removed from the cask/canister by normal means (i.e., crane and grapple)

Current Storage Period

- Current licensing basis is maintained
- In as-loaded condition according to the TS
 - Dry and inert environment
 - Maximum fuel clad temperature limits
 - Thermal cycling is limited
 - Known loaded fuel condition and configuration

Extended Storage Period



- Aging of internal components
 - Long term performance
 - Ongoing agency and industry research
- Unintended consequences of current guidance
 - Difficulties in assessing internals may lead to unnecessarily opening the cask/canister
 - Unintended impacts: May increase worker dose & degrade/eliminate the confinement boundary

Public Interactions

- Public meetings (2011/2012) to solicit feedback
- FRN for public comment (2013)
 - Storage retrievability
 - Current position or canister-based?
 - Majority favored change in position
 - Transportation retrievability
 - Explicit retrievability requirement not supported
- Interactions put on hold for higher priority activities



Retrievability Considerations



- Continue to protect public health and safety
- Ensure spent fuel can be retrieved from storage safely to be transported offsite for further processing or disposal
- Use of normal means



Proposed Guidance for Ready Retrieval



The ability to remove the spent fuel from storage by normal means for further processing or disposal.

Proposed Additional Guidance

“Removing the spent fuel from storage” can mean:

- A. transferring a dual-purpose canister into a transportation packaging for transport offsite,
- B. transporting a dual-purpose cask offsite, or
- C. removing spent fuel assemblies using normal means for placement into a transportation packaging.

Proposed Path Forward



- Potential draft guidance on Fuel Retrievability
- Determine implications on regulatory framework
- Public meeting – tentatively 9/22/15
- ACRS subcommittee meeting on “Update on Storage and Transportation” – 11/20/15
- Revised guidance (if any) out for public comment



Questions/Comments



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References



- ISG-2, Revision 1, "Fuel Retrievability," ML100550861
- NUREG-1536, Revision 1, "Standard Review Plan for Spent Fuel Dry Cask Storage Systems at a General Facility," ML091060180
- NUREG-1567, Revision 0, "Standard Review Plan for Spent Fuel Dry Storage Facilities," ML003686776
- NUREG-1927, Revision 0, "Standard Review Plan for Renewal of Specific Licenses and Certificates of Compliance for Dry Storage of Spent Nuclear Fuel," ML111020115
- NUREG/CR 7198, "Mechanical Fatigue Testing of High-Burnup Fuel for Transportation Applications," ML15139A389
- FRN requesting public comment (78 FR 3853) and comments, ML15110A370



Abbreviations



- ISFSI – Independent Spent Fuel Storage Installation
- CFR – Code of Federal Regulations
- GTCC – Greater than Class C
- ISG – Interim Staff Guidance
- TS – Technical Specifications
- FRN – Federal Register Notice
- ACRS – Advisory Committee on Reactor Safeguards

