

Appendix 8 Stakeholder Interactions

The technical staff reviewed and evaluated available technical information and methods to use as the risk-informed technical basis for reviewing decommissioning exemption requests and rulemaking related to emergency preparedness, safeguards, indemnification, and other areas. When the draft report was released for public comment in June 1999, stakeholders identified concerns, which we addressed for inclusion in the final report. The early stakeholder input has improved the overall quality of the draft report. Meetings held with the stakeholders are provided below. Then we discuss stakeholder comments in various technical areas.

Public meetings on the Technical Working Group Study

March 17, 1999	Commission meeting in Rockville, MD
May 5, 1999	Stakeholder meeting with NRC staff in Rockville, MD
April 13, 1999	Stakeholder meeting with NRC staff in Rockville, MD
June 7, 1999	Stakeholder meeting with NRC staff in Rockville, MD
June 8, 1999	Stakeholder meeting with Sam Collins in Rockville, MD
June 21, 1999	Pre-workshop stakeholder meeting with NRC staff in Rockville, MD
July 15-16, 1999	Workshop on decommissioning plant spent fuel pool accident risk in Gaithersburg, MD
November 3, 1999	Stakeholder meeting with Sam Collins in Rockville, MD
November 5, 1999	ACRS meeting in Rockville, MD
November 8, 1999	Commission meeting in Rockville, MD
November 19, 1999	Stakeholder meeting with NRC staff in Rockville, MD

Probabilistic Risk Assessment (PRA)

An industry stakeholder raised the concern that the PRA was too conservative and that some of the assumptions were unrealistic. We refined the PRA analysis, incorporating industry commitments, and subjected the results to an independent technical review. The results are presented in Chapter 3 and summarized in Chapter 4. A more detailed description of the risk analysis is presented in Appendix 2.

Human Reliability Analysis

Industry stakeholders raised a concern that the June 1999 draft report did not give sufficient credit for operator actions in the area of human reliability analysis (HRA). Specifically, industry stated that the NRC draft report did not reflect the potential for actions such as self-checking, longer reaction times available, management oversight, design simplicity, second crew member check, additional shift attention in recovery, or additional cues causing increased attention.

We in turn, enlisted the support of HRA experts to refine the analysis in the June 1999 draft report. The HRA results were also subjected to an independent technical review. This topic is discussed in Appendix 2, section 2A.

4/13/06

Heavy Loads

Industry stakeholders raised a concern that the heavy load risk assessment in the draft report did not give sufficient credit for NUREG-0612 actions and used the conservative upper bound values.

To address these concerns, we employed more recent Navy data to requantify the fault tree, included the mean value estimate for compatibility with Regulatory Guide 1.174, and addressed industry voluntary commitment to Phase II of NUREG-0612. The results and conclusions are discussed in Appendix 2, section 2C.

Seismic Assessment

To take credit for the seismic design margins existent in spent fuel pools, we sought an appropriate method to identify potential structural vulnerabilities without having to perform a detailed fragility review. At a July 15-16, 1999 public workshop, industry proposed development of a simple spent fuel pool seismic checklist as a way of assessing seismic vulnerabilities without performing quantifying analyses.

In a letter dated August 18, 1999, NEI submitted a "seismic checklist" for screening. We consider it an excellent approach to plant-specific seismic assessments; however, we have identified some deficiencies in the checklist proposed by NEI. The "seismic checklist" and our concerns are discussed in Appendix 2, section 2B.

Criticality

A public stakeholder concluded that the June 1999 draft report did not address the potential for a criticality accident in the SFP of a decommissioned plant.

We therefore examined the mechanisms by which a criticality accident could occur to assess the potential for criticality, the consequences, and the likelihood of a criticality event. The results were subjected to an independent technical review where additional mechanisms were proposed and examined. The results are presented in Appendix 3.

Thermal-Hydraulic Assessment

Industry stakeholders raised a concern that the thermal-hydraulic assessment in the June 1999 draft report used overly conservative adiabatic heatup calculations and a maximum clad temperature that was too conservative for the zirconium ignition temperature.

We refined the thermal-hydraulic analysis presented in the draft report and subjected those results to an independent technical review. The results of the analysis are included in Appendix 1.

Concrete Aging of the SFP

A public stakeholder raised a concern that the June 1999 draft report did not address the potential for concrete aging in SFP's at decommissioned plants.

At the July 16, 1999, workshop, we committed to discussing the issue of concrete strength over time and the potential for aging or degradation for SFP's. The discussion is found in Appendix 2, section 2B.

Seismic Effects on SFP Integrity

A public stakeholder raised a concern that the June 1999 draft report did not examine vulnerabilities related to the transfer tube and other SFP design vulnerabilities resulting from a seismic event for decommissioned plants. A discussion of this topic is found in Appendix 2, section 2B.

Partial Draindown and Exothermic Reaction of SFP

An industry stakeholder stated that we did not consider the implications of a partial draindown as being as serious as or worse than a complete draindown. The stakeholder also stated that the draft report did not address the potential for a hydrogen explosion resulting from an exothermic reaction between steam and zirconium. A discussion of this topic is found in Appendix 1.

Impact of Decommissioning on Operating Units

A public stakeholder stated that we did not consider the impacts on operating units of removing the water from the SFP at a decommissioning site, such as Millstone and San Onofre. We view the effect of decommissioning on operating units.....

Safeguards

A public stakeholder stated that the draft report did not address the potential or threat for vehicle-borne bombs.

There are no specific regulations for relaxation of physical security requirements at power reactor licensees that have certified permanent cessation of operations and fuel removal to the spent fuel pool, in accordance with 10 CFR 50.82 and associated with the eventual termination of their Part 50 license. So that the NRC can address the license termination process for security programs at sites, licensees have submitted requests for exemptions from specific regulations in 10 CFR 73.55, justifying this approach on the basis that the number of target sets susceptible to sabotage attacks has been reduced and the remaining target sets, even if subject to sabotage attacks, pose a reduced hazard to the public health and safety. We have addressed this problem in the past by processing these exemption requests on a case-by-case basis. However, a regulation would provide a more uniform basis for our actions. Therefore, we proposed a rulemaking to revise security regulations instead of continuing to regulate by issuing license exemptions.

On January 20, 1999, the safeguards staff gave the Commission SECY-99-008, "Physical Security/Safeguards for Permanently Shutdown Power Reactors," which would amend 10 CFR PART 73 to include regulations for such sites. After a technical staff briefing on March 17, 1999 we received the staff requirements memorandum (SRM) dated June 23, 1999, asking the staff to consider an integrated, risk-informed decommissioning rule instead of individual rulemakings on financial protection requirements, emergency preparedness,

safeguards, backfits, and fitness-for-duty. On June 29, 1999, the safeguards staff received an additional SRM on SECY-99-008 which also directed the staff to include safeguards issues in a combined rulemaking. We responded to the Commission on June 30, 1999, with SECY-99-168, "Improving Decommissioning Regulations for Nuclear Power Plants," agreeing to prepare a combined rulemaking once the Technical Study of Spent Fuel Pool Accidents for Decommissioning Plants is finished on March 31, 2000.

Current licensees that have permanently shut down their reactor operations and have stored the spent fuel in the pool are required to meet the security requirements for operating reactors in 10 CFR 73.55 for protecting the site against the design basis threat defined in 10 CFR 73.1(a)(1). This level of security requires a site with a permanently shutdown reactor to provide protection at the same level as for an operating reactor site. Removing the fuel from the reactor and rendering the reactor inoperable significantly reduces risk to the public health and safety from reactor sabotage.

In an associated regulatory arena, 10 CFR 73.51, "Physical Protection for Spent Nuclear Fuel and High-Level Radioactive Waste," allows facilities not associated with an operating power reactor to store spent fuel at an independent spent fuel storage installation (ISFSI). This rule provides performance-based regulations specifically designed for these types of storage installations, i.e., fuel in dry cask containers or other storage formats. The objective of the 10 CFR 73.51 rule was to reduce the regulatory burden regarding security requirements without reducing protection levels to public health and safety for spent fuel storage not associated with an operating reactor. When drafted, 10 CFR 73.51 included permanently shutdown reactors, but these facilities were removed from the scope of the rule when NRR technical staff identified a potential safety issue addressed herein. 10 CFR 73.51 failed to account for the risk posed by vehicle-borne bombs at facilities where potential criticality and fuel heatup were still issues.

We intend to prepare a performance-based regulation similar to 10 CFR 73.51 that will not only reduce the regulatory burden and be appropriate for spent fuel storage at power reactor sites but also will account for the threat of vehicle-borne bombs. In addition security officers will be armed, but the bullet-resisting alarm station will not necessarily be in the protected area.

The proposed rulemaking would provide regulations specifically applicable to power reactor sites that have permanently ceased operations. The new rulemaking would codify and consolidate current regulations at a level commensurate with the reduced potential of sabotage at permanently shutdown sites. To develop this rulemaking, we will review existing regulations in 10 CFR 73.55 and determine what requirements are necessary for a permanently shutdown power reactor. After analyzing the security areas that need to be protected, we will eliminate requirements that are beyond the protection strategy needed for a permanently shutdown power reactor site and its capability to preclude a radiological release that could impact public health and safety.

As noted above, this new regulation will be very similar to 10 CFR 73.51 except for the use of armed security officers, the off-site bullet-resisting alarm station, and the retention of the vehicle barrier system. The following additional open or unresolved issues will be resolved during the formal rulemaking process: (1) the impact of this technical study as it relates to timing of the downgrading of requirements, (2) grandfathering sites that defueled before the vehicle barrier system rule, and (3) the use of vital and protected areas, as currently defined in the regulations.