From: Tanya Eaton, NRR
To: Robert Skelton
Date: Tue, Sep 5, 2000 1:35 PM
Subject: Security Input to SFP Decomm. Report

Good afternoon,

I am not sure if you are in today. I am leaving this email in regards to our conversation last week regarding Skip Young's input to the public comments on Security. You said that you thought a discussion was needed to clarify a sentence in Skip's response about "wet fuel" (see below). Once his response is clarified to your satisfaction, I need to meet with you to clarify the section of the report (Section 4.3.2, "Security") which caused the initial confusion to the member of the public who raised the concern.

I think the concern would be clarified if we merge Skip's Security write-up into the last paragraph of Section 4.3.2 (see attached file to see Security write-up from Section 4.3.2 of the SFP decommissioning report); however, I need your assistance to make sure it's merged correctly. Please contact me soon so that we can discuss. If I am not available, please contact George Hubbard.

Thank you for your time,

Tanya Eaton
415-3610

IOLB Public Comment #1: The NRC staff agrees that Section 4.3.2, Security, as written, appears to be inconsistent with the changes to Part 73 as described in FRN 26955 dated May 15,1998. The description of risk associated with potential criticality and fuel heat up is for spent nuclear fuel (SNF) recently discharged from the reactor vessel and not SNF stored at an ISFSI. The staff acknowledges that this section needs to be rewritten to properly described the staff's understanding of these two risks.

The staff believes that as written 10 CFR 73.51, provides proper physical protection for the storage of all spent nuclear fuel (wet or dry storage) at an ISFSI. The design basis threat for radiological sabotage of power reactors under 10 CFR 73.1 is not considered appropriate for the types of facilities subject to 73.51 and therefore, a separate protection goal is defined for these facilities. The protection goal states that "The physical protection system must be designed to protect against loss of contol of the facility that could be sufficient to cause radiation exposure exceeding the dose as described in 10 CFR 72.106 and referenced by 73.51(b)(3)".

With regard to protection against malevolent use of land-based vehicle, NRC continues to believe there is no compelling justification for requiring a vehicle barrier as perimeter protection at this time. The staff will however, continue to review the requirements to ensure that proper level of security is provided for new cask designs and other changing technologies.

CC: Diane Jackson, Francis Young, George Hubbard

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Security Write-up from Draft Report

4.3.2 Security

Currently licensees that have permanently shutdown reactor operations and have offloaded the spent fuel into the SFP are still required to meet all the security requirements for operating reactors in 10 CFR 73.55 [Ref 7]. This level of security would require a site with a permanently shutdown reactor to provide security protection at the same level as that for an operating reactor site. The industry has asked the NRC to consider whether the risk of radiological release from decommissioning plants due to sabotage is low enough to justify modification of safeguards requirements for SFPs at decommissioning plants.

In the past, decommissioning licensees have requested exemptions from specific regulations in 10 CFR 73.55, justifying their requests on the basis of a reduction in the number of target sets susceptible to sabotage attacks, and the consequent reduced hazard to public health and safety. Limited exemptions based on these assertions have been granted. The risk analysis in this report does not take exception to the reduced target set argument; however, the analysis does not support the assertion of a lesser hazard to public health and safety, given the consequences that can occur from a sabotage induced uncovery of fuel in the SFP when a zirconium fire potential exists. Further, the risk analysis in this report did not evaluate the potential consequences of a sabotage event that could directly cause off-site fission product dispersion, for example from a vehicle bomb that was driven into or otherwise significantly damaged the SFP, even if a zirconium fire was no longer possible. However, this report would support a regulatory framework that relieves licensees from selected requirements in 10 CFR 73.55 on the basis of target set reduction when all fuel has been placed in the SFP.

The risk estimates contained in this report are based on accidents initiated by random equipment failures, human errors or external events. PRA practitioners have developed and used dependable methods for estimating the frequency of such random events. By contrast, this analysis, and PRA analyses in general, do not include events due to sabotage. No established method exists for estimating the likelihood of a sabotage event. Nor is there a method for analyzing the effect of security provisions on that likelihood. Security regulations are based on a zero tolerance for sabotage involving special nuclear material - which includes spent fuel. The regulations are designed and structured to remove sabotage from design basis threats at a commercial nuclear power plant, regardless of the probability or consequences.

The technical information contained in this report shows that the consequences of a zirconium fire would be high enough to justify provisions to prevent sabotage. Moreover, the risk analysis could be used effectively to assist in determining priorities for, and details of, the security capability at a plant. However, there is no information in the analysis that bears on the level of security necessary to limit the risk from sabotage events. Those decisions will continue to be made based on a deterministic assessment of the level of threat and the difficulty of protecting a specific facility.

10 CFR 72 [Ref. 8] allows facilities not associated with an operating power reactor to store spent fuel at an independent spent fuel storage installation (ISFSI). 10 CFR 73.51 did not consider the risk posed by vehicle-borne bombs at facilities where potential criticality and fuel heat-up were still issues. The staff also noted that the applicability of 10 CFR 26 [Ref 9] has not been thoroughly evaluated for decommissioning reactors once the fuel has been removed from the reactor vessel and placed in the SFP, and specifically does not apply to ISFSIs

licensed under 10 CFR 72. Given the importance of a vehicle bomb threat to the integrity of SFP, and the significance of HRA to the conclusions reached in the SFP risk analysis, the staff recommends that for coherency in the regulations, both of these subjects be revisited during the overall integration of rules for decommissioning reactors.