

December 20, 2000

Mr. David A. Lochbaum
Nuclear Safety Engineer
Union of Concerned Scientists
1707 H Street NW, Suite 600
Washington, DC 20006-3919

Dear Mr. Lochbaum:

Thank you for your letter of November 21, 2000, which cited two examples of spent fuel pool heat-ups that went unrecognized by the plant staff for a long period of time. One example you mentioned was a December 1998 Browns Ferry Unit 3 event that has already been the subject of separate correspondence between the Commission and you in a Commission letter dated October 8, 1999. In addition, you described an event at Duane Arnold in January of this year where a rise in spent fuel pool water temperature went undetected for approximately 2 days. Duane Arnold Inspection Report 50-331/99015 dated March 7, 2000, documented the staff's inspection of the event. The licensee was issued a non-cited violation by the NRC for this event. We agree with you that both the Browns Ferry and the Duane Arnold events are relevant to the staff's assessment of risk associated with decommissioning spent fuel pools. In fact, the staff discussed these events in its February 2000 draft technical study on spent pool accident risk at decommissioning nuclear power plants.

In your letter, you expressed concern about the potential safety implications of these events. The staff determined in the draft spent fuel pool risk study that the conditional probability of uncovering the spent fuel is low given a loss of spent fuel pool cooling event. This conclusion was based on a thorough probabilistic risk assessment (PRA) in which both the Browns Ferry and Duane Arnold events were explicitly considered. The staff notes that its PRA models human performance that reflects these lapses in recognition of a problem, whether it is due to operator error or instrument malfunction. The staff extended its PRA sequences to longer than 48 hours and used human reliability analysis (HRA) estimates appropriate for such long duration sequences and the conditions associated with them.

Your letter also expressed concern about unwarranted erosion of safety margins related to spent fuel pool issues at plants being decommissioned. The NRC has not yet proposed any decommissioning rulemaking which would change the current regulatory requirements for decommissioning plant spent fuel pools. The staff's draft technical study of spent fuel pool risk concludes that for the envelope of design and operational conditions considered, the overall risk from spent fuel pools is low. Future rulemaking activities will include controls for assuring the risk study envelope is fully considered. The Browns Ferry and Duane Arnold events illustrate the importance of industry commitments and staff assumptions captured in the risk study. Specifically, these events reinforce the benefit of direct measurement of spent fuel pool temperature and water level measurement in the decommissioning plant control room, as well as regular walk-downs of the spent fuel pool once per shift. The NRC intends to ensure that risk-informed initiatives are implemented in a manner that maintains safety.

You stated that the NRC should consider all industry experience - both good and bad - before rendering safety decisions based on risk-informed regulation. The NRC endeavors to consider all relevant industry and operating experience when conducting its regulatory activities. As you noted in your letter, a good general summary of the spent fuel pool cooling operating experience is provided in an NRC report dated February 1997 (NUREG-1275, Vol. 12). However, we are not limited to system specific data when assessing risk. System reliability and human reliability data used in our PRAs rely on more generalized operating data taken from other systems and are not limited to spent fuel pool equipment or incidents.

Finally, you observed that the Duane Arnold event was not reported as a License Event Report (LER) and implied that this could result in inaccurate PRA event frequencies. You are correct that the Duane Arnold event was not reported as an LER. During the staff's inspection of the event, it was determined that 10 CFR 50.73 does not require an LER for extended loss of spent fuel pool cooling. It should be noted that LERs are just one of several resources the NRC uses when searching for specific data for developing event frequencies for PRAs. As demonstrated in this instance, lack of an LER did not preclude the staff from being knowledgeable of the Duane Arnold event or assessing its impact in the staff's spent fuel pool risk study.

Thank you again for your perspective on decommissioning spent fuel pool risks and examples of the industry's performance problems in this area. Any further questions or discussion on this issue may be addressed to Bill Huffman of my staff at 301-415-1141.

Sincerely,

/RA/

Stuart A. Richards, Director
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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Stuart A. Richards, Director
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