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UNION OF
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SCIENTISTS

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Chief, Rules and Directives Branch
Division of Administrative Services
Office of Administration
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: COMMENTS ON DRAFT FINAL TECHNICAL STUDY OF SPENT FUEL POOL ACCIDENT RISK AT DECOMMISSIONING NUCLEAR POWER PLANTS

Good Day:

In response to the notice published in the *Federal Register* on February 22, 2000 (Vol. 65, No. 35), the Union of Concerned Scientists submits the following comments on the draft final technical study of spent fuel pool accident risk at decommissioning nuclear power plants:

1. At the behest of Mr. Francis Cameron of the NRC's Office of General Counsel, UCS participated in the July 15, 1999, public workshop on spent fuel pool risk at decommissioning plants. The primary concern that we expressed at the meeting was that the NRC staff was improperly ignoring the risk to nuclear plant workers. That concern was not addressed in Appendix 7, "Stateholder Interactions," of the draft report. We were assured by Mr. Cameron and other NRC managers at that workshop that stakeholder concerns would be addressed. We were misled, yet again. Industry stakeholders raised concerns during that workshop that the NRC staff addressed in Appendix 7 and throughout the draft report, but our primary concern - in fact, each and every single concern that we expressed at that workshop - was tossed out.

   The NRC staff owes its stakeholders the courtesy of addressing their concerns, particularly when comments are solicited by the NRC staff. Otherwise, the NRC staff must stop actively solicting public comment when it has no intention of considering.

2. To toss our primary concern from the July 1999 public workshop back in, the draft report fails to consider the risk to workers at permanently closed plants. As documented in NRC Bulletin 94-01, "Potential Fuel Pool Draindown Caused By Inadequate Maintenance Practices At Dresden Unit 1," dated April 14, 1994, a spent fuel pool at a nuclear power plant that has been shut down for over fifteen (15) years can be a hazard to workers. That NRC Bulletin stated:

   The loss of water shielding would have created onsite personnel hazards from the high radiation fields.

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The draft report completely ignores the "onsite personnel hazards" from spent fuel pools at permanently closed plants. The NRC has a responsibility under the law to protect workers and members of the public.

Potential drainage of the spent fuel pool leading to high onsite radiation fields is not the only hazard. For example, the Haddam Neck nuclear plant did a calculation for a postulated spent fuel pool demineralizer resin fire that indicated the radiation dose to control room operators would exceed federal limits. The calculation was revised to reduce the dose numbers below regulatory limits.

I told an NRC staffer about these calculations and asked about the radiation dose experienced by members of the fire brigade responding to the resin fire. The control room operators are protected by concrete and special ventilation systems, but the responders are not. The NRC staffer told me I had a good point. If good points were like the old S&H green stamps, I think I'd have enough for a very nice ski boat by now. But I don't want the ski boat - I want the NRC staff to address the radiological hazards to plant workers and members of the public from permanently closed plants.

The draft report must be revised to include credible hazards to plant workers at permanently closed plants.

3. The second paragraph on page two of the draft report's Executive Summary states:

> *...this report estimated the generic frequency of events leading to zirconium fires at decommissioning plants to be less than $3x10^{-6}$ per year for a plant that implements the design and operational characteristics assumed in the risk assessment performed by the staff.*

On pages 14 and 15 of the draft report, there are ten (10) Industry Decommissioning Commitments covering areas such as periodic testing of backup systems and seal designs that cannot drain the spent fuel pools.

What is the generic frequency of events leading to zirconium fires at decommissioning plants before the design and operational characteristics are implemented?

The question is relevant at permanently closed plants and at currently operating plant. The Industry Decommissioning Commitments are safety features that must be in place for the "acceptable" risk to be obtained.

What will the NRC staff do to protect plant workers and the public from spent fuel pool risks at permanently closed plants and operating plants before these design and operational characteristics being implemented?

4. Industry Decommissioning Commitment No. 5 (IDC #5) on pages 15 and 31 of the draft report state:

> *Spent fuel pool instrumentation will include readouts and alarms in the control room (or where personnel are stationed) for spent fuel pool temperature, water level, and area radiation levels.*

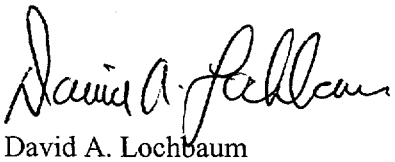
The objective of this commitment is laudable. Unfortunately, it is worded so vaguely as to be virtually useless. The loss of spent fuel pool cooling event at Browns Ferry in December 1998 that is described on pages 18 and 19 of the draft report had a duration of nearly two days because that plant's spent fuel pool temperature instrumentation did not indicate spent fuel pool temperature. The temperature element was located in the suction piping of the spent fuel pool cooling system's pumps.

If the system is not functioning properly, a temperature element in this location provides no meaningful indication of spent fuel pool temperature. Likewise, some plant designs may monitor spent fuel pool level by indirect means. For example, until a 10 CFR Part 21 report was submitted to the NRC, the Susquehanna Steam Electric Station design tracked spent fuel pool water level with a level instrument in the skimmer surge tank. When the spent fuel pool cooling system was not functioning properly (i.e., the precise condition it would be in if spent fuel pool level was decreasing), this level instrument location provided no meaningful indication of spent fuel pool level.

This commitment must be revised to require direct measurement of spent fuel pool temperature and water level.

I'd gladly surrender all of the good points that I've been awarded by NRC staffers over the past three years if just address these five items.

Sincerely,



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