



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

*Copies  
Charlie  
Jason  
Chris* (Draft of 10/15/99)

*To: Farouk E. Elsharbaty  
Here is the NRR  
response (the memoing is  
attached) to NEI for  
your information  
Please pass on to  
Jason Schaperow*

Mr. Joseph F. Colvin  
President and Chief Executive Officer  
Nuclear Energy Institute  
1776 I Street, NW  
Suite 400  
Washington, DC 20006-3708

Dear Mr. Colvin:

I am responding to your letter of August 24, 1999, addressed to Chairman Dicus regarding the NRC draft study on the risk of spent fuel pool accidents at decommissioning nuclear power plants. My reading of your letter suggests that you may not have had the opportunity to appreciate the current status of the NRC's review, previous stakeholder involvement, and our intention for use of the study.

As noted in my phone call to you on October 8, 1999, we have discussed with the industry on several occasions, that the staff's risk assessment was intended as a scoping evaluation to help identify potential risk challenges needing further review by NRC and the industry. At a June 7, 1999, public meeting, the staff acknowledged that many areas contained in the draft report were difficult to analyze using probabilistic risk analysis methods, and therefore proposed to submit the report to external peer review before using it in the regulatory arena. At the meeting, NEI representatives requested that the staff make the draft report public in order to facilitate progress on resolving the regulatory issues involved in decommissioning. Responding to the stakeholder request, the staff used the document as the basis for a very productive public meeting held on July 15 and 16, 1999. Several follow-up telephone discussions were conducted and another public meeting was held on September 21, 1999.

One of the key goals of our agreement related to the early release of the draft report was that the industry and other stakeholders would review it, and where the industry believed that data would support different and perhaps less conservative analyses or conclusions, this information as well as other comments would be provided to the staff for its review and consideration. In contrast to your letter, I believe this mutually agreed upon process has merit and is working effectively to raise issues for consideration and resolution.

At this time, it is premature to judge the content of the study outcome. Clearly, it is our approach and intent that staff conclusions about near-term requests for exemptions from the regulations and longer term actions on rulemaking will be based on the best available probabilistic and deterministic analyses, tempered by good judgment.

*M/46*

In the future, the NRC staff intends to continue its policy of releasing preliminary technical information for public comment and for the benefit of involving stakeholders in NRC initiatives. We believe this policy leads to more productive public interaction and a more flexible approach to regulatory decision making. As I am sure you would agree, in order for this policy to be successful, it is necessary that the industry and other stakeholders acknowledge the preliminary nature of such information, engage in constructive involvement, and recognize that the NRC will not take regulatory action until it has considered all technical viewpoints. Without this understanding, the benefits of early interaction will be significantly diminished.

Sincerely,



Samuel J. Collins, Director  
Office of Nuclear Reactor Regulation



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Sincerely,

Samuel J. Collins, Director  
Office of Nuclear Reactor Regulation

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Tom, Ernie

your involvement  
in NEC calculations?

EDO Principal Correspondence Control  
your views  
views

?  
Ahhk

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FINAL REPLY:

Mr. F. Colvin  
Nuclear Energy Institute (NEI)

Chairman Dicus

YOUR SIGNATURE OF : \*\* GRN \*\*

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SC: PROBABILISTIC RISK ANALYSIS (PRA) OF  
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NRR Collins

SPECIAL INSTRUCTIONS OR REMARKS:  
For Appropriate Action.





NUCLEAR ENERGY INSTITUTE

4405

Joe F. Colvin  
PRESIDENT AND  
CHIEF EXECUTIVE OFFICER

August 24, 1999

The Honorable Greta J. Dicus  
Chairman  
U.S. Nuclear Regulatory Commission  
Mail Stop O-16 C1  
Washington, DC 20555-0001

Dear Chairman Dicus:

In performing a probabilistic risk analysis (PRA) of decommissioning facilities, the NRC staff concludes that the public health risk for a decommissioned facility is equivalent to that of an operating power reactor. This illogical conclusion was reached by treating fundamental aspects of the quantitative analysis in a manner that is not consistent with the Commission's PRA policy statement or the approach used for operating plant PRAs. These study results are summarized in SECY 99-168, Improving Decommissioning Regulations for Nuclear Power Plants.

The study concludes that a zirconium fire with offsite health consequences can occur when no action is taken to recover from a loss of pool water inventory. The conclusions of the draft study are in conflict with previous NRC studies of this issue, and result from the use of worst case assumptions and improper coupling of risk analysis with deterministic methods.

A fundamental tenet of PRA (as articulated in the Commission's policy statement) is the use of realistic, best estimate values for treatment of data, sequence analyses, human performance, and success criteria. We performed a detailed review of the assumptions used in the draft NRC study and compared them with similar assumptions used in operating plant PRAs. The draft study generally assumes worst case, or bounding assumptions, that are compounded through the quantitative process in such a manner to overstate by two orders of magnitude the likelihood of conditions leading to the zirconium fire.

The study couples this overstated probability value with a conservative thermal hydraulic analysis, including adiabatic heat up conditions, large conservatisms in the zirconium ignition point, and failure to take into account the time to boil off the coolant from the time of initial fuel uncovering until ignition of the zirconium. The end state of the NRC study does not equate to a public health impact, but rather to an intermediate point in the development of the scenario. This approach is again

**The Honorable Greta J. Dicus**  
**August 24, 1999**  
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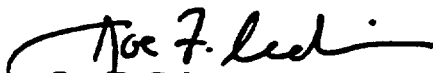
inconsistent with operating plant PRAs, which use realistic thermal hydraulic calculations and calculate end states (e.g., large release frequency) that can be related to public health effects and the NRC's safety goal policy statement.

NRC staff is proposing to use the study to justify regulatory requirements (such as emergency planning) for many years after the facility is permanently shut down. The continuation of these regulations is not justified on the basis of the draft NRC study.

The presentation of staff conclusions to the Commission needs to be given careful and thoughtful consideration. Although the results were acknowledged to be preliminary, the use of flawed analysis as a basis for any decision making is detrimental to the fidelity of the regulatory process. The success of risk-informed regulation is dependent on correct and consistent application of the Commission's policies.

We appreciate your consideration of this important matter, and would be pleased to meet with the Commission, or your technical assistants, to provide more detailed information.

Sincerely,

  
Joe F. Colvin

c: The Honorable Nils J. Diaz, Commissioner, NRC  
The Honorable Edward McGaffigan Jr., Commissioner, NRC  
The Honorable Jeffrey S. Merrifield, Commissioner, NRC  
Dr. William D. Travers, Executive Director for Operations, NRC