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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE NRC STAFF

OFFICE OF SECRETARY
RULEMAKING AND
ADJUDICATION STAFF

In the Matter of)
)
CAROLINA POWER & LIGHT)
(Shearon Harris Nuclear)
Power Plant))
)

Docket No. 50-400 - LA

ORANGE COUNTY'S MOTION FOR LEAVE TO COMMENT
ON JUNE 20, 2000 ACRS LETTER

Orange County hereby requests an opportunity to comment on the relevance to its pending environmental contentions of a recent letter from the Advisory Committee on Reactor Safeguards ("ACRS") to the NRC Commissioners. See Letter from Dana A. Powers, Chairman, ACRS, to Hon. Richard A. Meserve, Chairman, NRC, re: Proposed Resolution of Generic Safety Issue-173A, "Spent Fuel Storage Pool for Operating Facilities" (June 20, 2000) (copy attached). The County believes the letter is relevant to the contentions because it addresses various matters relating to the risks of spent fuel pool storage accidents at operating reactors, including the relevance of the NRC Staff's recent draft technical study regarding the risks of spent fuel pool accidents at decommissioning reactors.

Given the subject matter of the June 20 ACRS letter, and given that the Board has previously sought comment on the Staff's draft technical study and the April 13 ACRS letter regarding spent fuel pool accident risks at decommissioning reactors (see Memorandum and Orders (Requesting Additional Information) dated March 21 and May 5, 2000), Orange County submits that an additional opportunity for comment is warranted here.

Template = SECY-041

SECY-02

Respectfully submitted,



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UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D.C. 20555-0001

June 20, 2000

The Honorable Richard A. Meserve
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Meserve:

**SUBJECT: PROPOSED RESOLUTION OF GENERIC SAFETY ISSUE-173A,
"SPENT FUEL STORAGE POOL FOR OPERATING FACILITIES"**

During the 473rd meeting of the Advisory Committee on Reactor Safeguards, June 7-9, 2000, we met with representatives of the NRC staff to discuss the proposed resolution of Generic Safety Issue (GSI)-173A, "Spent Fuel Storage Pool for Operating Facilities." We also had the benefit of the referenced documents.

Recommendations

1. The staff should defer closing out GSI-173A until the re-evaluation associated with spent fuel pool (SFP) accidents for decommissioning plants has been completed.
2. The staff should develop screening criteria for regulatory analyses that are appropriate for SFP accidents at operating reactors.

Discussion

The principal concerns of GSI-173A involve the potential for a sustained loss of SFP cooling capability and a potential for a substantial loss of SFP coolant inventory.

The staff had previously developed and implemented a generic spent fuel storage pool action plan to resolve concerns related to GSI-173A. This plan included plant-specific evaluations and regulatory analyses for safety enhancement backfits for plants that are more vulnerable to the GSI-173A concerns.

The staff has completed the review and evaluation of design features related to the SFP associated with each operating reactor. It found that existing structures, systems, and components related to storage of irradiated fuel provide adequate protection of public health and safety. Consequently,

- the staff pursued regulatory analyses for safety enhancement backfits on a plant-specific basis. For these regulatory analyses, the staff used screening criteria for the frequency of "uncovery to within one foot of the top of fuel" or "loss of cooling for eight hours."

The screening criteria were:

$\leq 10^{-6}$ /yr	No action justified
10^{-6} /yr to 10^{-5} /yr	Further evaluation needed
$\geq 10^{-5}$ /yr	Proceed to value-impact evaluation

With this choice of screening criteria, the staff determined that no further regulatory actions were warranted.

The screening criteria, which constituted the primary basis for the staff's findings, are essentially equivalent to the criteria in the Regulatory Analysis Guidelines. The criteria in the Regulatory Analysis Guidelines are derived from the prompt fatality quantitative health objective (QHO) of the Safety Goal Policy Statement. These are appropriate surrogates for this QHO for reactor accident source terms (fission product releases) driven by steam-zircaloy oxidation. As noted in our report of April 13, 2000, which is related to SFP accident risk at decommissioning nuclear power plants, it is very likely that the source terms for SFP accidents will be significantly different from those for operating reactor accidents. The fission product release from spent fuel accidents is most likely driven by air oxidation of the zircaloy clad. Under such circumstances, there is convincing evidence that there may be substantial release of the ruthenium inventory as the volatile oxide, as well as release of significant quantities of "fuel fines" through a decrepitation process.

Such differences in source terms have significant implications. Ruthenium has relatively long half-life isotopes, its inventory in spent fuel is substantial, and its biological consequences are severe. In connection with decommissioning plants, the staff estimated that prompt fatalities due to an SFP fire could increase by as much as two orders of magnitude if the source term is assumed to include 100-percent release of ruthenium compared to essentially zero release. In addition, the societal dose could double and the cancer fatalities could increase four-fold for this estimated source term. The consequences of actinide releases associated with either fuel decrepitation or matrix-stripping have not yet been evaluated. With emergency response measures, the limiting consideration might well no longer be prompt fatalities. The staff should assess the impact of the different source term on latent fatalities and land contamination.

Because of these differences in the source term, the screening criteria used in this application appear to be inappropriate as surrogates for the prompt fatality QHO related to SFP accidents at operating reactors. A proper surrogate could lead to changes in the conclusions that the staff has reached.

Before closing out GSI-173A and developing the Standard Review Plan and regulatory guidance, the staff should await the results of the proposed re-evaluation of SFP accidents for decommissioning plants and should re-evaluate the regulatory analysis screening criteria for application to SFP accidents at operating reactors.

Sincerely,



Dana A. Powers
Chairman

References:

1. Memorandum dated July 26, 1996, from James M. Taylor, Executive Director for Operations, NRC, to NRC Chairman Jackson and Commissioners Rogers and Dicus, Subject: Resolution of Spent Fuel Storage Pool Action Plan Issues.
2. Memorandum dated September 30, 1997, from L. Joseph Callan, Executive Director for Operations, NRC, to NRC Chairman Jackson and Commissioners Diaz, Dicus, and McGaffigan, Subject: Followup Activities on the Spent Fuel Pool Action Plan.
3. Office for Analysis and Evaluation of Operational Data, NRC, AEOD/S96-02, "Assessment of Spent Fuel Cooling," September 1996.
4. Report dated April 13, 2000, from Dana A. Powers, Chairman, ACRS, to Richard A. Meserve, Chairman, NRC, Subject: Draft Final Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants.

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of)	
CAROLINA POWER & LIGHT)	Docket No. 50-400 -OLA
(Shearon Harris Nuclear)	ASLBP No. 99-762-02-LA
Power Plant))	

CERTIFICATE OF SERVICE

I certify that on July 12, 2000, copies of Orange County's Motion for Leave to Comment on June 2000 ACRS Letter were served on the service list below by e-mail and/or first class mail as indicated below:

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