

February 11, 2005

MEMORANDUM TO: Biweekly Notice Coordinator

FROM: Theodore B. Smith, Project Manager **/RA/**  
Reactor Decommissioning Section  
Decommissioning Directorate  
Division of Waste Management  
and Environmental Protection  
Office of Nuclear Material Safety  
and Safeguards

SUBJECT: REQUEST FOR PUBLICATION IN BIWEEKLY FR NOTICE - NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE, PROPOSED NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION, AND OPPORTUNITY FOR A HEARING (TAC NO. L60567)

Connecticut Yankee Atomic Power Company, Docket No. 50-213, Haddam Neck Plant,

Middlesex County, Connecticut

Date of amendment request: December 1, 2004

Description of amendment requests:

The Haddam Neck Plant (HNP) is currently undergoing active decommissioning. The proposed amendment would revise the License Termination Plan (LTP) to revise the buried debris dose model and surface contamination release limits for various piping sizes. Specifically Connecticut Yankee Atomic Power Company (CYAPCO) proposes to:

1. Modify the dose model for volumetrically contaminated concrete, rebar (hereafter referred to as simply "concrete"), the containment liner and embedded piping in basements that are to remain in place at the HNP site. The revised approach results in the offsite disposal of a larger percentage of the concrete structures (approximately 75% of that which would remain under the current approach). The overall effect results in a smaller amount of radioactivity contained in concrete to remain on-site than is allowed by the current LTP. The method of calculating the future groundwater pathway dose using the concrete debris model is being revised to an inventory based approach which will include activity inventories from the containment liner, embedded piping inside surfaces and radioactivity released from volumetrically contaminated concrete (which is controlled by diffusion rate through basement walls and flowable fill). The concrete that will remain is in the containment lower walls and floor mat, the in-core instrumentation sump, and the lower walls and floor of the spent fuel pool in the fuel building. The Basement Fill Model will also be used for other basements and footings that will remain on site using the results of future characterization surveys.
2. Additionally, CYAPCO proposes to include surface contamination release levels for other pipe diameters that may be encountered during the decommissioning beyond that currently

included in the LTP for 4 inch piping.

Basis for proposed no significant hazards consideration determination:

As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

In accordance with 10 CFR 50.92, CYAPCO has reviewed the amendment request and concluded that the amendment request does not involve a Significant Hazards Consideration (SHC). The basis for this conclusion is that the three criteria of 10 CFR 50.92(c) are not compromised. The amendment request does not involve an SHC because the amendment request would not:

**A. Involve a significant increase in the probability or consequences of an accident previously evaluated.**

The activities included in the amendment request are within the bounds of those contained in the HNP Updated Final Safety Analysis Report (UFSAR). The HNP UFSAR Chapter 15 provides a discussion of the radiological events postulated to occur as a result of decommissioning activities with bounding consequences resulting from a resin container accident. This accident is expected to contain more potential airborne activity than can be released from other decommissioning events. The radionuclide distribution assumed for the resin container has a greater inventory of transuranics radionuclides (major dose contributor) than the distribution of plant derived radionuclides in the components involved in other decommissioning activities. The HNP UFSAR also discusses a fuel handling accident in the fuel building, involving the drop of a spent fuel assembly onto the fuel racks. The postulated drop assumes the rupture of all fuel rods in the associated assembly. The probability or consequences of this accident would not be increased during any future fuel operations in the spent fuel building related to decommissioning. Transfer of the spent fuel to canisters for dry cask storage involves additional restrictions contained in the cask certificate of compliance in order to maintain decommissioning activities within the assumptions of and consequences of the fuel handling accident. No systems, structures, or components that could initiate or be required to mitigate consequences of an accident are affected by the amendment request in any way not previously evaluated in the HNP UFSAR. Therefore, the amendment request does not involve any increase in the probability or consequences of any accident previously evaluated.

**B. Create the possibility of a new or different kind of accident from any accident previously evaluated.**

Accident analyses related to decommissioning activities are addressed in the HNP UFSAR. The activities included in the amendment request are within the bounds of those considered in the HNP UFSAR. Thus, the amendment request does not affect plant systems, structures, or components in any way previously evaluated in the HNP UFSAR. The amendment request does not introduce any new failure modes. Therefore, the amendment request will not create the possibility of a new or different kind of accident from any previously evaluated.

**C. Involve a significant reduction in a margin of safety.**

The HNP LTP is a plan for demonstrating compliance with radiological criteria for license termination as provided in 10 CFR 20.1402. The margin of safety defined in the statements of consideration for the final rule on the Radiological Criteria for License Termination is described as the margin between 100 mrem/yr public dose limit established in 10 CFR 20.1301 for licensed operation and the 25 mrem/yr dose limit to the average member of the critical group at a site considered acceptable for unrestricted use (one of the criteria of 10 CFR 20.1402). This margin of safety accounts for the potential effects of multiple sources of radiation exposure to the critical group. Since the HNP LTP was designed to comply with the radiological criteria for license termination for unrestricted use, this license amendment request supports this margin of safety. Also, as previously discussed, the bounding accident for decommissioning is the resin container accident. Since the bounding decommissioning accident results in more airborne radioactivity than can be released from the other decommissioning events, the margin of safety associated with consequences of decommissioning accidents is not reduced by this amendment request. Thus, the amendment request does not involve a significant reduction in the margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

NRC Section Chief: Claudia Craig