CONNECTICUT YANKEE ATOMIC POWER COMPANY

Docket No. 50-213

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BERLIN, CONNECTICUT P. O. BOX 270 HARTFORD, CONNECTICUT 06101 August 27, 1981

Director of Nuclear Reactor Regulation Attn: Mr. Dennis M. Crutchfield, Chief Operating Reactors Branch #5 U. S. Nuclear Regulatory Commission Washington, D.C. 20555

- References: (1) D. M. Crutchfield letter to W. G. Counsil, July 1, 1981.
  - (2) D. G. Eisenhut letter to W. G. Counsil, dated October 11, 1979.

(3) W. G. Counsil letter to J. Hendrie, dated November 30, 1979.

Gentlemen:

Haddam Neck Plant NUREG-0737 Item II.E.1.1, Auxiliary Feedwater System

In Reference (1), the Staff concluded that the auxiliary feedwater system at the Haddam Neck Plant does not meet the power source diversity requirement of Standard Review Plan Section 10.4.9. The Staff requested Connecticut Yankee Atomic Power Company (CYAPCO) to propose modifications to the auxiliary feedwater system necessary to meet the power source diversity requirement. CYAPCO has reviewed the existing auxiliary feedwater system and potential modifications and made the following determinations.

Following the accident at Three Mile Island Unit No. 2, the Bulletins and Orders Task Force conducted reviews of the auxiliary feedwater systems of operating reactors. The results and recommendations of the B & O Task Force review of the Haddam Neck auxiliary feedwater system were forwarded via Reference (2). This review did not identify the lack of power source diversity as being an item of concern which required modification. Some 20 months following the B & O Task Force review, the NRC Staff amended its position to suggest that non-conformance to the above-referenced provision of the SRP was of sufficient concern to warrant backfitting. The Staff's reliability analysis which was the basis for Reference (2), (identified as Item II.E.1.1 of NUREG-0737), did not reveal that the lack of power source diversity was of sufficient significance to warrant corrective action. As stated in NUREC-0737, the reliability analyses for NUREG-0737 Item II.E.1.1 have been completed for all Westinghouse plants, yet Reference (1) appears to discount the results of the Haddam Neck reliability study.

8109030081 PDR ADOCK 05000213 PDR We are raising this concern because of the advantages of and our desire to integrate all required backfits to the auxiliary feedwater system. At present, the following issues all require consideration of potential backfits to the AFWS;

- o Long term recommendations of the B & O Task Force review
- Implementation of the NUREG-0737 requirement for automatic initiation of auxiliary feedwater
- Installation of safety-grade auxiliary feedwater flow indication
- Scismic qualification of the auxiliary feedwater system, Generic Letter 81-14
- o Long term decay heat removal, Unresolved Safety Issue A-45

CYAPCO is concerned that implementing backfits without continuity or coordination of those required modifications could potentially degrade the reliability of the system. However, CYAPCO has reviewed the Staff's recommendation in Reference (1) and intends to implement the following modifications.

The spool pieces on the suction and discharge sides of the electric pump will be permanently installed and the piping in the vicinity of the spool pieces will be resupported so that permanent installation of the spool pieces will not degrade the integrity of the turbine driven trains in the event of a design basis earthquake. CYAPCO intends to complete these modifications during the 1981 refueling outage, currently scheduled to begin in September, 1981.

CYAPCO has investigated the feasibility of modifying the electric pump to permit initiation and flow control from the control room and identified two options. The first option involves replacement of gate valve FW-V-181 with a check valve and installation of a safety grade motor operator on the motor driven auxiliary feedwater pump condensate storage tank isolation valve DC-V-633. Installation of this motor operator would provide the capability to isolate seismically qualified portions of the AFWS from the motor driven pump piping. The estimated cost for this option is \$50,000. The second option involves seismically supporting the motor driven auxiliary feedwater pump and its associated piping. This would allow the suction and discharge valves to remain open during normal operation thus requiring no operator action to align the system. The estimated cost for this second option is \$100,000. These estimates do not include costs related to seismic and environmental qualification of the motor driven pump. Both options would require control room modifications which are estimated to cost about \$20,000.

Considering the factors associated with each alternative, CYAPCO has concluded that the Staff's recommendation to provide control room initiation and flow control is not justified in terms of increased plant safety. The existing auxiliary feedwater system, consisting of two redundant steam-driven trains, is entirely adequate to ensure continued safe operation of the Haddam Neck Plant. Although the AFWS does not comply with the Standard Review Plan guideline for power-source diversity, there is no credible single failure which could disable both steam-driven trains. Therefore, there is assurance that auxiliary feedwater flow can be initiated and controlled from the control room when required.

The motor driven pump was originally installed to provide a source of water for filling and hydrostatically testing the steam generators when the main foodwater system was unavailable and there was no steam available to run the turbine driven pumps. The electric pump also facilitated startup after an extended shutdown when steam was not available. The installed motor driven auxiliary feedwater pump is neither seismically nor environmentally qualified. Thus, even if CYAPCO were to comply with the Staff's recommendations concerning this pump, it could not be credited in accident analyses. The motor driven auxiliary feedwater pump must be manually initiated. CYAPCO has determined that, in the event of a loss of main feedwater, a minimum of 27 minutes exists before stcam generator dryout, assuming ANS + 20% for decay heat. As documented in Reference (3), depending on the availability of offsite power, a minimum of 33 or 43 minutes is available, assuming ANS + 0% for decay heat. This allows sufficient time for the operator to locally align the required valves and start the motor driven pump if conditions so required.

In summary, CYAPCO intends to permanently install the spool pieces and resupport adjacent piping so that the integrity of the turbine driven trains will not be degraded in the event of a design basis earthquake. This modification will serve to increase the reliability of the Haddam Neck auxiliary feedwater system. Based upon the associated cost, the long steam generator dry-out times, and the lack of qualification, CYAPCO does not intend to modify the motor driven pump to permit initiation and firsw control from the control room. CYAPCO has determined that this recommendation is not justified in terms of increased plant safety since there is assurance that auxiliary feedwater will be available when required.

CYAPCO does not consider the implementation schedule associated with NUREG-0737 Item II.E.1.1 to be applicable to the Reference (1) recommendations.

We trust the Staff will find this information sufficient to resclve this concern.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY

W. G. Counsil

Senior Vice President