

January 22, 1990

Docket No. 50-213

Mr. Edward J. Mroczka  
Senior Vice President  
Nuclear Engineering and Operations  
Connecticut Yankee Atomic Power Company  
Northeast Nuclear Energy Company  
P. O. Box 270  
Hartford, Connecticut 06141-0270

Dear Mr. Mroczka:

SUBJECT: HADDAM NECK PLANT - REQUEST FOR ADDITIONAL INFORMATION  
REGARDING CONFORMANCE WITH APPENDIX R POST-FIRE ALTERNATE  
SHUTDOWN (TAC NO. 66169)

In April 1989, Connecticut Yankee Atomic Power Company (CYAPCO) provided the NRC with its submittal regarding post-fire safe shutdown capability for the Haddam Neck Plant in accordance with the requirements of Section III.G and III.L of 10 CFR Part 50, Appendix R. Based on the information provided by CYAPCO, we have determined that additional information is needed to complete our review. Enclosed are additional questions regarding your methodology for this review. Please respond within 60 days of the receipt of this letter.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than 10 respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

/s/

Alan B. Wang, Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosure:

As stated

cc w/enclosure:

See next page

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Mr. Edward J. Mroczka  
Connecticut Yankee Atomic Power Company

Haddam Neck Plant

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REQUEST FOR ADDITIONAL INFORMATION  
BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
APPENDIX R, POST-FIRE SAFE SHUTDOWN CAPABILITY  
HADDAM NECK NUCLEAR GENERATING PLANT  
DOCKET NO. 50-213

1. In Section 3.1.1 (Reactor Coolant System SK 80241-1) of the Compliance Review of April 1989, you state that "...The steam bubble in the pressurizer will maintain subcooled conditions." Provide information to justify this statement. Indicate what minimum subcooling you intend to maintain throughout the post-fire period. Discuss what plans you have to increase system pressure utilizing equipment undamaged by fire in the event unforeseen circumstances reduce the subcooling margin you intend to maintain.
2. In the shutdown summary regarding a fire in the cable spreading area (area S-3A), you specify that the PAB doors be opened during cold shutdown in order to provide for natural circulation cooling. Provide justification to show that such cooling is not required while the plant is maintained at hot standby. Further, you state (in Section 6.5, "Ventilation") that "the expected ambient temperature will be approximately 110°F..." Discuss how you arrived at this conclusion, providing details regarding your assumptions and calculations. Also, confirm that this calculation is for the worse case room heatup condition, or conduct a calculation for the worst case and report your conclusions, accordingly.
3. You note that fuel oil for extended operation can be obtained by allowing fuel oil to flow, by gravity, from the main storage tank, TK-33-1A, to individual EDG storage tanks, TK-33-2A and 2B. Provide further details to corroborate this conclusion which confirms that an adequate fuel oil supply is available.
4. Your review of a fire in area D-1 is unclear since you state that the switchgear room doors are to be opened for ventilation by means of portable fans if normal ventilation is lost. A note is then added, stating that the new switchgear building may be used for alternate shutdown. Clarify this inconsistency to note, for the worst case, whether normal switchgear room ventilation is lost and whether or not you need to rely on the new switchgear building for alternate shutdown.

If shutdown is to be effected by means of the existing switchgear room, discuss use of the portable fans and what maximum temperatures are to be expected when using them. If the new switchgear building is to be used, show how shutdown would be effected, if different from the means already reported. In addition, other fire areas should be reviewed in order to confirm that a similar inconsistency is not present elsewhere.

5. In the discussion of the PAB fire (A-1A), you discuss use of the charging metering pump for cooling RCP seals. Provide information to confirm the availability of a source of power for this pump under all conditions of use after the start of a fire.
6. In the event of fires in some areas, e.g., S2 (Switchgear Room) and S3A (Cable Spreading Area), you report the loss of 3 of the 4 containment air recirculation (CAR) fans and the need to restart at least one other CAR fan within 5 hours. Since repairs are not permitted for equipment required to maintain the plant in hot standby, confirm either that no repairs are required to start the second CAR fan or that the second CAR fan is not required to maintain the plant in hot standby.
7. Section 3.6.5 of the April 1989 "Compliance Review" states that operator action matrices assume that three operators are available to place the plant in hot standby but does not specify the number of operators needed to achieve and maintain cold shutdown. Discuss this, showing how many operators are required to bring the plant to cold shutdown condition under the most adverse conditions. Indicate how the operating crew will be constituted and maintained to assure its availability in the event of a fire for both hot standby and cold shutdown.
8. Describe how the plant can be brought to cold shutdown within 72 hours after a fire, under the most adverse conditions. Delineate the time expended in each step.
9. Discuss your plans to provide operational procedures for operator use in the event of a fire.
10. Provide technical specifications for the post-fire alternate shutdown systems to ensure their operability.
11. You state in analyzing the loss of HVAC equipment, in the event of a fire in containment (area R-3), that all four CAR fans are subject to loss of operability due to damage to control or power cables, damage from the direct effects of the fire, and to spurious action. In discussing the worst case effect, you state that the fire will have no effect on safe shutdown because at least two CAR fans will be operable. Explain this apparent inconsistency, and ensure that any necessary containment ventilation is provided for hot standby free of fire damage.
12. Discuss the tests you intend to conduct to qualify the kill switches in the control building. Also describe the tests you intend to conduct to ensure the capability to operate essential post-fire safe shutdown equipment from the new switchgear building.