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NORTHEAST UTILITIES SERVICE COMPANY
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February 20, 1991

Docket No. 50-213
A09287

Re: 10CFR2.201

Mr. T. T. Martin, Regional Administrator
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

Gentlemen:

Haddam Neck Plant
Response to Notices of Violation and Deviation
NRC Region I Inspection No. 50-213/90-16

By letter dated January 10, 1991,⁽¹⁾ the NRC transmitted its Inspection Report No. 50-213/90-16 and associated Notices of Violation and Deviation. The violation involves failure to environmentally qualify certain auxiliary feedwater flow instruments and containment pressure transmitters. The deviation involves routing of four auxiliary feedwater flow transmitter instrument cables in one common conduit. The Staff requested that Connecticut Yankee Atomic Power Company (CYAPCO) respond to these Notices within 30 days of the date of the transmittal letter. In a telephone conversation in late January 1991, the NRC Staff agreed to extend the response due date to 30 days from receipt of the Staff's inspection report since the January 10, 1991 report was not received until January 21, 1991. CYAPCO hereby submits its response to the Notice of Violation as Attachment 1, and to the Notice of Deviation as Attachment 2.

Please contact us if you have any questions.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY

FOR: E. J. Mrocza
Senior Vice President

BY: E. A. DeBarba
E. A. DeBarba
Vice President

Attachments

(1) J. P. Durr letter to E. J. Mrocza, "NRC Region I Inspection No. 50-213/90-16," dated January 10, 1991.

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Attachment No. 1

Haddam Neck Plant

NRC Region I Inspection No. 50-213/90-16
Response to Notice of Violation

February 1991

Statement of Violation:

"10 CFR 50.49 Paragraph f requires that electric equipment important to safety be environmentally qualified by type testing, analysis, or a combination of both.

The auxiliary feedwater flow instruments and the containment pressure transmitters are classified by the licensee as Type A variable instruments for RG 1.97 implementation. Type A variable instruments (RG 1.97 Category 1 instruments) are considered electric equipment important to safety as specified in Paragraph b.2 of 10 CFR 50.49.

Contrary to the above, on October 5, 1990, all four auxiliary feedwater flow transmitters and the associated terminal blocks, and the containment pressure transmitters, were not environmentally qualified.

This is a Severity Level IV Violation (Supplement 1)."

CYAPCO Position

o Auxiliary Feedwater Flow

CYAPCO acknowledges that the auxiliary feedwater instrumentation was not in compliance with 10CFR50.49(b)(3) since startup from the 1990 refueling outage in late August 1990 once the plant exceeded 10 percent power. This instrumentation will only be governed by 10CFR50.49(b)(3) for the current operating cycle (Cycle 16). Credit for operator action based on indication of auxiliary feedwater flow was not taken before, and will no longer be required following this cycle of operation. (2)

o Containment Pressure

As previously discussed with the Staff, containment pressure instrumentation was erroneously identified as a Type A variable in the September 30, 1986 Regulatory Guide 1.97 submittal. Specifically, discussions during the audit in October 1990, and telephone conversations following the audit, clarified CYAPCO's position that the Type A classification was an error. This position was further elucidated in a December 21, 1990 letter to the Staff. The containment pressure instrumentation is not a

(2) For details regarding crediting operator action for the auxiliary feedwater system for Cycle 16 see E. J. Mroczka letter to U.S. Nuclear Regulatory Commission, "Proposed Changes to Technical Specifications," dated August 25, 1990; and A. B. Wang letter to E. J. Mroczka, "Issuance of Amendment," dated October 22, 1990.

Type A variable because it provides no information to the control room operator which would cause the operator to take specific manual action to mitigate a design basis accident. As such, the previous classification as a Type A variable was in error. Accordingly, because the containment pressure variable should never have been classified as a Type A variable, CYAPCO does not agree that a violation of 10CFR50.49 existed.

Nonetheless, even though this instrumentation is not considered a RG 1.97 Type A variable, it is classified by PG 1.97 as a Type B variable. Since RG 1.97 recommends that Type B variables be environmentally qualified and containment pressure instruments are qualifiable, CYAPCO is in the process of qualifying this instrument and it will be included in the next revision to the EQ Master List, currently scheduled for issuance by April 11, 1991. As such, we have taken responsive measures to address this qualification concern. Since we do not believe a violation of 10CFR50.49(b)(3) has occurred for this parameter, associated root cause and corrective actions identified below apply only to the AFW flow instruments.

Root Cause:

The need to environmentally qualify the AFW flow instruments arose due to a singular change in the assumptions of a design basis analysis (i.e., operator action based upon AFW flow was now being credited). The changed assumption did not result in any hardware or procedural changes. This situation resulted in this change being implemented in accordance with NEO 4.02, "Proposed Technical Specification Change Requests and Emergency Waiver Requests." Accordingly, this specific design basis analysis change was not reviewed as part of our existing, multi-discipline design change review process. Had the latter process been utilized, a broader multi-disciplined review would have been required and all appropriate disciplines would have been involved.

A contributing factor associated with the failure to identify the need to environmentally qualify AFW flow during the design basis analysis review and approval process is the fact that the limiting design criteria for auxiliary feedwater system performance are typically established by the loss of main feedwater event. As such, other less limiting accidents were not considered in sufficient detail to identify the environmental qualification concern. Steam line break accidents are cooldown and not heatup events. Assumed auxiliary feedwater system operation in the analysis is considered to make the consequences more severe since it can increase the RCS cooldown and mass and energy release into containment. Thus, the longer-term role of auxiliary feedwater for decay heat removal and, in particular, the use of the AFW flow instrumentation was not evaluated under the potential harsh environment conditions and reliance on the unqualified AFW flow transmitters was not identified.

Corrective Actions Taken:

A determination was made that the transmitters are operable as installed, however the same determination could not be made for transmitter terminations, and they were therefore replaced with fully qualified splices. The auxiliary feedwater flow transmitters have been added to the Haddam Neck Plant EQ Master List.

Action to Prevent Recurrence:

More explicit guidance will be issued by April 30, 1991 regarding the use of the existing design change review process for these type of design basis changes.

Date of Full Compliance:

At this time, the AFW transmitters are considered operable and the terminations are in fact qualified. When the AFW system dependence on instrument air and manual action is removed, the system will be fully automated and manual control using AFW flow indication will no longer be required. The primary flow indication will be the steam generator wide-range level indication. This conforms to the NUREG 0737 criteria for Westinghouse plants. In addition, the AFW flow indicators will be reclassified as an RG 1.97 Type D variable.

Upon startup from the next refueling outage, presently scheduled for November 1991, the AFW system will be fully automated and manual control using AFW flow indication will no longer be required.

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Attachment No. 2

Haddam Neck Plant

NRC Region I Inspection No. 50-213/90-16
Response to Notice of Deviation

February 1991

Statement of Deviation:

"In the licensee's submittal, dated September 30, 1986, to the NRC for the implementation of Regulatory Guide, Revision 2, the auxiliary feedwater flow was specified as a Category 1 variable. The design criteria of RG 1.97, Revision 2, as specified in Section 1.3.1, item b, states that "No single failure within either the accident-monitoring instrumentation, its auxiliary supporting features, or its power sources concurrent with the failures that are a condition or result of a specific accident should prevent the operators from being presented the information necessary for them to determine the safety status of the plant and to bring the plant to and maintain it in a safe condition following that accident."

Contrary to the above, on October 5, 1990, the instrument cables of all four auxiliary feedwater flow transmitters were routed in one common conduit for a relatively long distance. A single failure along the cable routing could cause all four transmitters to be inoperable.

This is a deviation."

CYAPCO Position

CYAPCO acknowledges that the instrument cables of all four auxiliary feedwater (AFW) flow transmitters are routed for some distance in a common conduit. Based upon the following information, it is arguable that this condition does not represent a deviation from the above RG 1.97 guidance. As a minimum, if a deviation does exist, it is justified.

Because the cables for all 4 AFW flow transmitters are routed in a common area, it is possible for a single failure to result in the loss of total AFW flow indication. However, if this is the assumed single failure, then two AFW pumps would be assumed to be available and AFW flow indication would not be essential for any short term operator actions. (Operator action, and therefore the Type A Category 1 classification, is only required when the single failure results in an inoperable AFW pump). In the longer term, steam generator level could be used for monitoring the performance of the AFW system. Thus, a redundant means of monitoring AFW system performance would still be available.

During the 1991 refueling outage, a modification to the AFW pump governors will make the AFW system fully automated and remove the necessity for manual operator action to control the system. The AFW flow indication will then be re-classified as a Category 2, Type D variable and will no longer be subject to the RG 1.97 guidance concerning single failures.