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December 14, 1983

<sup>213</sup>  
Docket No. 50-214  
B10953

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) Integrated Plant Safety Assessment, Haddam Neck Plant,  
NUREG-0826, June, 1983.
- (2) D. M. Crutchfield letter to W. G. Counsil, dated October 20,  
1982.

Gentlemen:

Haddam Neck Plant  
SEP Topic VII-1.A, Isolation of Reactor Protection  
System from Non-Safety Systems, Including  
Qualifications of Isolation Devices

Section 4.26 of Reference (1) identified a concern related to electrical isolation between the reactor protection system (RPS) monitoring channels and meters, the data logger, and/or process recorders. Specifically, the NRC found the following RPS subsystems to have inadequate isolation:

- o Pressurizer Pressure
- o High Pressurizer Level
- o Steam Flow
- o Feedwater Flow
- o Steam Generator Level

Connecticut Yankee Atomic Power Company (CYAPCO) has reviewed the Staff's Final Safety Evaluation Report (SER) for this topic, Reference (2), and our conclusions are as follows.

o Pressurizer Pressure

Reference (2) states that there is no isolation between the data logger and the pressurizer pressure channels. CYAPCO is planing to replace the existing plant process computer. This aspect of system separation will be a consideration in the purchase of new replacement equipment.<sup>(1)</sup>

- (1) Details provided in W. G. Counsil letter to D. G. Eisenhut, dated November 28, 1983.

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Reference (2) also identified a lack of isolation between pressure channel #1 and a process recorder. It should be noted that a failure of pressure channel #1 would leave the two remaining channels to provide the necessary protective trips. The only time this criterion would be compromised is during surveillance testing. This surveillance testing is of short duration and occurs infrequently. Therefore, it has minimum impact on overall plant safety. Also, the input stage of this recorder (Taylor Model 800) is a voltage divider/operational amplifier unit. The arrangement is similar to a separate stand-alone isolation device. Therefore, there would be no increase in isolation to be gained by installation of a separate isolation device. The recorder is the originally purchased equipment and has an excellent history of reliability. Also, it is mounted in the main control room, a mild environment area. For these reasons, no modifications are warranted.

o Pressurizer Level

The pressurizer level channels are similar in arrangement to the pressurizer pressure channels and the NRC's findings are identical. That is, there is no isolation between channel #1 and the strip chart recorder, and the data logger is not isolated from the three pressurizer level channels. CYAPCO's response on this is identical to the response on the pressurizer pressure channels, above. Again, no modifications are warranted.

o Steam Flow/Feedwater Flow/Steam Generator Level

Reference (2) indicates that the steam flow, feedwater flow, and steam generator level circuits provide inputs to both the RPS and a process recorder and controller without isolation. In the case of the process recorder, it is a Taylor Model 800 analog recorder. It is of the same type, vintage, and circuitry as the recorder described above in connection with the pressurizer pressure channels. For the same reasons as above, no further isolation is necessary or practical.

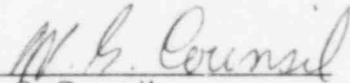
In the case of the controller, the feed signal is isolated from the steam signals by an isolation amplifier, and the output of the controller is isolated from the input by an operational amplifier. It is CYAPCO's conclusion that this provides adequate isolation and no modifications are needed.

We also note that the limited risk assessment performed by the Staff for this topic concluded that failures of the RPS as a result of the lack of isolation did not contribute to the overall RPS failure rate. This further supports our conclusion that modifications to provide additional isolation would not result in a commensurate increase in safety.

We trust the Staff will find the above information sufficient to resolve the concerns identified in Section 4.26 of Reference (1) and concur in our determination that no modifications are necessary. Based on this, we consider SEP Topic VII-1.A to be resolved for the Haddam Neck Plant.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY

A handwritten signature in cursive script, appearing to read "W. G. Council", is written over a horizontal line.

W. G. Council  
Senior Vice President