

John D. O'Toole  
Vice President

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October 9, 1985

Re: Indian Point Unit No. 2  
Docket No. 50-247

Director of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

ATTN: Mr. Steven A. Varga, Chief  
Operating Reactors Branch No. 1  
Division of Licensing

Dear Mr. Varga:

This is in response to your September 9, 1985 letter transmitting the staff's conclusion following review of our May 10, 1985 response to the staff position requiring reactor trip bypass breaker status indication on the Indian Point 2 (IP-2) main control board. In that letter the staff found our position (i.e that bypass breaker status indication on the main control board is unnecessary for IP-2) unacceptable, based on unspecified human factors considerations resulting from the Salem ATWS event. In our May 10, 1985 response we identified several factors that led us to conclude that the installation of bypass breaker status indication on the main control board will provide no significant increase in overall reactor safety and is therefore unwarranted and unnecessary. Some of the factors that led us to that conclusion are:

- o The bypass breakers are maintained under strict administrative control and are placed in service only when one train of the RPS is in test. As such, the only circumstance in which the bypass breaker could affect RPS unavailability is when one train is in test and a signal is generated in the redundant train, and the series reactor trip breaker fails to open. Since testing occurs once per month, total RPS unavailability is quite insensitive to a bypass breaker failing to open on demand; therefore the potential value of bypass breaker position indication on the main control board is insignificant at best.

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- o By procedure, upon indication of a valid trip demand, the operator must verify that the reactor has tripped. A reactor trip is verified only if the rod bottom indicating lights are lit, reactor trip breakers are open, rod position indicators are at zero, and neutron flux is decreasing. If each and all of these responses are not obtained the operator is directed to manually trip the reactor. Thus, regardless of whether some reactor trip breaker position indication confirms the trip breakers to be open, the operator will insert a manual reactor trip if the other three trip verification criteria have not been satisfied. If at the time the trip demand is received, one train of the RPS is in test, a bypass breaker will be in service. Verification of reactor trip will still require the operator to verify the rod bottom indicating lights are lit, the reactor trip breaker in service has opened, the rod position indicators are at zero, and neutron flux is decreasing. As above, if any one of these responses is not obtained, the operator is directed to manually trip the reactor. Thus operator action to verify that the reactor has in fact tripped upon indication of a valid trip demand will be essentially unaffected by the presence or absence of bypass breaker position indication on the main control board. We note that the other three trip verification criteria are final actuation criteria, which are more direct indicators of a reactor trip than breaker position indication.
  
- o If at the time a valid trip demand is received one train of the RPS is in test, a bypass breaker will be in service. Prior to having been placed in service the bypass breaker will have been verified operable by local actuation of the shunt trip device, providing additional assurance that the bypass breaker will trip if demanded to do so. Reactor trip breaker testing is performed from the logic test panel at the rear of the control room. Bypass breaker position indication is available at the logic test panel, and the technicians performing the reactor trip breaker testing can easily communicate bypass breaker status to the operators at the main control board, should it ever become necessary to do so.

Having reviewed the documentation available to the industry concerning the Salem AIWS events, including NUREG-0977 ("NRC Fact-Finding Task Force Report on the AIWS Events at Salem Nuclear Generating Station, Unit 1, on February 22 and 25, 1983") and NUREG-1000 ("Generic Implications of AIWS Events at the Salem Nuclear Power Plant"), we have been unable to ascertain any human factors implications of those events that would suggest a measurable increase in reactor safety from the installation of bypass breaker status indication on the main control board.

From our perspective, and based on the factors noted above, the installation of additional indication on the main control board could well have a negative impact on human factors considerations, since

operators will be confronted with more instrumentation having the potential to divert their attention in a counter-productive manner. The installation of additional instrumentation will likely require repositioning of existing instrumentation to facilitate human factors considerations. To the extent that any control board layout represents a compromise between space available, the number of discrete indicators needed to provide the required information to the operator, and the arrangement that best assures operator recognition of available information, additional instrumentation must provide a significant benefit.

Your September 9, 1985 letter disagreeing with our position, requested our commitment to install such indication and a schedule for installation. Prior to committing we respectfully request the staff provide justification that details those human factors implications of the Salem ATWS events suggesting that installation of bypass breaker status indication on the main control board materially enhances operator response, and an evaluation demonstrating that the installation would significantly increase overall reactor safety.

Very truly yours,



John D. O'Toole  
Vice President