

NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY
THE HARTFORD ELECTRIC LIGHT COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
NORTHEAST WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST UTILITIES (NEECO) COMPANY

P.O. BOX 270
HARTFORD, CONNECTICUT 06101
(203) 666-6911

January 3, 1979

Docket No. 50-336

Director of Nuclear Reactor Regulation
Attn: Mr. R. Reid, Chief
Operating Reactors Branch #4
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

- References:
- (1) Eldon J. Brunner letter to W. G. Council dated October 23, 1978.
 - (2) R. Reid letter to W. G. Council dated November 29, 1978.
 - (3) W. G. Council letter to Eldon J. Brunner dated December 22, 1978.
 - (4) W. G. Council letter to R. Reid dated August 15, 1978.

Gentlemen:

Millstone Nuclear Power Station, Unit No. 2
Containment Purging

In Reference (1), the NRC Office of Inspection and Enforcement documented the results of an inspection concerning the containment purging situation at Millstone Unit No. 2. In Reference (2), the NRC Staff raised a generic concern relative to potential failures of automatic isolation of large diameter containment purge penetrations used during power operation. Reference (2) made two requests of NNECO, specifically: (a) a commitment to cease all containment purging during operation or a justification for continuing purging, and (b) a review of the design of all safety actuation signal circuits.

It is noted that Reference (3) responds in part to the Staff concerns of Item (b) above, however, the following information is intended to respond fully to the requests of Reference (2).

At this time, it is the intention of NNECO to pursue Option (3) of Reference (2), namely to justify unlimited purging. To accomplish this task, the following activities have been identified as necessary:

- (a) Determination of the limiting case concerning mass/energy releases from the primary system during a DBE, and an evaluation of subsequent operation of the purge isolation valves.
- (b) Evaluation of the radiological consequences of having the valves open for a limited period of time.

790090254

- (c) Subsequent impact on ECCS performance as a result of decreased containment backpressure.

Preliminary evaluations of Items (b) and (c) above indicate that if containment isolation can be achieved approximately ten seconds following rupture, favorable results can be achieved. However, detailed information cannot be provided at this time because the analysis of Item (a) is currently in progress, and valve response must be determined prior to evaluating radiological consequences and ECCS performance. Although this analysis is in progress on a priority basis, results are not anticipated to be available prior to plant shutdown for the second refueling outage. Since the plant will be in the cold shutdown condition during that time, the Staff concern is not applicable during that period. NNECO's schedule for providing the justification for unlimited purging is, therefore, to provide the information to the Staff prior to the start of Cycle 3 operation, currently scheduled for May 15, 1979. In the interim, NNECO hereby commits to limit purging to an absolute minimum, not to exceed 90 hours per year. It is noted that due to a lack of NRC response to Reference (4), containment purging is currently administratively precluded. This situation is most undesirable in that inappropriate radiation setpoints in Technical Specifications have resulted in unnecessary personnel exposure during containment entries, in opposition to the ALARA philosophy. Expeditious Staff response to Reference (4) is respectfully requested. Note that the administrative control precluding any containment purging cannot be removed until a license amendment concerning the radiation setpoints is issued.

NNECO has also conducted a review of the design of all safety injection signal circuits which incorporate a manual override feature, and hereby provides the following information.

The Millstone Unit No. 2 design does not include a protective function bypass at the system level, but rather at each of the components which are commanded by the various protective functions. This provision does not require bypassing all the associated system components in order to reposition certain components following their response to an actuation signal.

Channel bypass is provided at the ESFAS logic level for each protective system input, however, only one of the four protective channels may be in bypass at any one time and the protective function is obtained on a two-out-of-three basis.

Unless an actuation signal is present, operation of manual override will not render inoperative or bypass the safeguards function of the equipment selected for override. This is a key feature, which differentiates override from other situations which can effect equipment bypass.

If subsequent to an actuation signal, the safeguards equipment has assumed its safe position, operation of the manual override will permit the equipment to be placed in other positions, with the actuation signal still present. This condition will be indicated by the status light on the status panel. In this configuration, any further automatic operation of the equipment can only occur if the actuation signal (when reset) operates again, when the manual override will itself be overridden.

The initial design assumed that manual override would be used following an accident situation, where it was required to manually reposition equipment

subsequent to its initial automatic operation without having to reset the accident signal. In this context, manual override could not have prevented a safeguards function and did not require a unique indication that override had been selected. Recognizing the possibility of other events rendering equipment inoperable prior to an accident situation, equipment circuit design does include unique annunciation for events such as removal of operating power, etc., which are continuously indicated in the control room, in compliance with IEEE 279-1971 (4.13).

In the event that manual override is used during normal operation to defeat a false actuation signal, only the status light will indicate that the equipment had been placed in other than its accident mode position. However, the presence of the initiating safety actuation signal would also be alarmed and indicated on the main control board. The combination of the annunciated actuation signal and the status light indication provides positive and continuous indication that the equipment has been bypassed with respect to the actuation signal.

In certain specific instances, an equipment has the capability to respond to two actuation signals (e.g., High Radiation and CIAS). Operation into the override mode when in receipt of one actuation signal will also result in override for the second condition, without an indication of that situation. Plant administrative controls have been established such that the physical features provided by one actuation signal being annunciated, together with the equipment status light indicating other than its safe position, will provide information enabling the operator to be fully aware of additional actuation signals which would also have been bypassed.

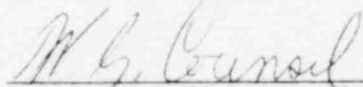
Additionally, on a once per shift basis, an administrative control requires a survey of control board and status panel indications to be made, enabling complete identification of override or bypass situations.

In summary, NNECO has concluded that our present indication schemes, together with the appropriate administrative controls and plant alarm identification information, establishes a satisfactory basis for the recognition and evaluation of bypass and override conditions. All procedural changes have been implemented, assuring correction of the concerns regarding safety actuation signal circuits identified in Reference (2).

We trust the above information is responsive to your requests, and reiterate our need for action regarding Reference (4).

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



W. G. Council
Vice President