NORTHEAST UTILITIES

THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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May 14, 1985

Docket No. 50-423
B11543

Director of Nuclear Reactor Regulation
Mr. B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

References: (1) The NRC Instrumentation and Control Systems Branch (ICSB) Site Audit at Millstone 3, May 6-8, 1985.

(2) B. J. Youngblood to W. G. Counsil, SER for Millstone Nuclear Power Station, Unit No. 3, July 1984.

(3) W. G. Counsil letter to B. J. Youngblood, Responses to SER Confirmatory Items, dated September 11, 1984.

(4) W. G. Counsil letter to B. J. Youngblood, Response to SER Confirmatory Items, dated September 21, 1984.

Dear Mr. Youngblood:

Millstone Nuclear Power Station, Unit No. 3
Transmittal of Responses to SER Confirmatory Items

At the ICSB Site Audit (Reference (1)), the representatives from Northeast Nuclear Energy Company (NNECO) met with the NRC Staff to discuss eight (8) SER confirmatory items contained in Reference (2). Attachment I provides a summary of status of SER confirmatory items discussed at the ICSB audit. Enclosed are NNECO's responses to SER Confirmatory Items 30, 34, 36, 40, and 42. Reference (3) and (4) transmitted responses to SER Confirmatory Items 35, 39 and 41.

If there are any questions, please contact our licensing representative directly.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY
et. al.

BY NORTHEAST NUCLEAR ENERGY COMPANY
Their Agent

J. F. Opeka
Senior Vice President

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STATE OF CONNECTICUT)
) ss. Berlin
COUNTY OF HARTFORD)

Then personally appeared before me J. F. Opeka, who being duly sworn, did state that he is Senior Vice President of Northeast Nuclear Energy Company, an Applicant herein, that he is authorized to execute and file the foregoing information in the name and on behalf of the Applicants herein and that the statements contained in said information are true and correct to the best of his knowledge and belief.

Lorraine J. D'Amico
Notary Public

My Commission Expires March 31, 1988

Attachment I

Status of ICSB Confirmatory Items

Item No.	Description	Status
30	Design modification for automatic reactor trip using shunt coil trip attachment	Closed
34	Steam generator level control and protection	Closed
35	Confirmatory test related to IE Bulletin 80-06	Closed
36	Control building isolation reset	Closed
39	Non-Class 1E control signals to Class 1E control circuits	Closed
40	Sequencer deficiency report	Closed
41	Balance-of-plant instrumentation and control system testing capability	Closed
42	Instrument accuracy related to Positions (4), (5) and (6), NUREG-0737, Item II.F.1	Closed

Millstone Unit No. 3
Confirmatory Items
Instrumentation and Control Systems Branch

SER-C30 Design Modification for Automatic Reactor Trip Using Shunt Coil Trip Attachment (SER 7.2.2.1)

The Westinghouse Owners Group (WOG) has submitted a generic design modification to provide automatic reactor trip system (RTS) actuation of the breaker shunt trip attachments in response to Salem ATWS events. The staff has reviewed and accepted the generic design modification and has identified additional information required on a plant-specific basis. By a letter dated May 4, 1984, the applicant addressed the staff's concern on plant-specific questions. The staff finds that the applicant's commitments are acceptable subject to a detailed review of the electrical schematic/elementary diagrams. This is a confirmatory item.

Response:

A detailed review of the electrical schematic diagrams (ESK 11A and 11B) and logic diagram (FSAR Figure 7.2-1, Sheet 2) regarding the design modification for automatic reactor trip using shunt coil trip attachment was performed by the NRC Staff at the May 6-8, 1985, ICSB audit. The NRC staff accepted the above schematic diagrams/logic diagram concerning shunt coil trip attachment.

Millstone Unit No. 3
Confirmatory Items
Instrumentation and Control Systems Branch

SER-C34 Steam Generator Level Control and Protection (SER 7.3.3.4)

Three steam generator level channels are used in a two-out-of-three logic for isolation of feedwater on high steam generator level. One of the three level channels is used for control. This design for actuation of feedwater isolation does not meet the requirements of Paragraph 4.7 of IEEE Std. 279 on "Control and Protection System Interaction" in that the failure of the level channel used for control could require protective action and the remainder of the protection system channels would not satisfy the single-failure criterion. By a letter dated May 4, 1984, the applicant stated that the high steam generator level trip will be changed to two-out-of-four logic. The staff finds that the applicant's commitment for design modification is acceptable. This is a confirmatory item subject to documentation of these changes in the FSAR system description and the related drawings.

Response:

A detailed review of revised FSAR Figure 7.2-1, sheet 7 regarding the high steam generator level trip (two-out-of-four logic) was performed by the NRC staff at the May 6-8, 1985 ICSB audit. The NRC staff accepted the above logic concerning steam generator level control and protection. Revised FSAR Figure 7.2-1, sheet 8 will be incorporated into a future FSAR amendment.

Millstone Unit No. 3
Confirmatory Items
Instrumentation and Control Systems Branch

SER-C36 Control Building Isolation Reset (SER 7.3.3.8)

The staff raised a concern on the design of the reset/override features used for control building isolation signals. Because that design for this safety function is based on one-out-of-two logic for some of the initiating conditions, single failures in instrument channels associated with these functions may result in system actuation. The use of the reset/override feature was designed so that the override of one initiating signal would defeat system initiation by all other initiating signals. In response to this concern, the applicant modified the design so that the use of the reset/override features, which blocks an initiating signal for one condition, will not defeat system initiation by other initiating signals. Therefore, on the basis of this modification to the design of the control building isolation reset/override features, the staff finds that the design is acceptable. This is a confirmatory item subject to revision of Sheet 8 of FSAR Figure 7.2.1.

Response:

A detailed review of revised FSAR Figure 7.2-1, sheet 8 regarding control building isolation reset features/override features was performed by the NRC staff at the May 6-8, 1985, ICSB audit. The NRC staff accepted the above logic diagram. The Revised FSAR figure 7.2-1, sheet 8 will be incorporated in a future FSAR amendment.

Millstone Unit No. 3
Confirmatory Items
Instrumentation and Control Systems Branch

SER-C40 Sequencer Deficiency Report (SER 7.3.3.13)

On August 19, 1985, Vitro Laboratories, the manufacturer of the Millstone emergency power loading sequencer, filed a 10 CFR 21 deficiency report. The report indicated that the design of the auto test circuitry does not permit the proper output in response to loss-of-coolant accident (LOCA) events in some circumstances. Specifically, one reset function was omitted from the input LOCA time delay. The result is that LOCA events occurring during the portion of the auto test cycle will not actuate some output relays. The applicant has also filed a 10 CFR 50.55(e) report to note this deficiency. This item is a confirmatory item subject to implementation of the required corrective action.

Response:

A design modification package concerning the emergency diesel generator load sequencer prepared by Vitro Laboratories has been incorporated into the sequencer and successfully tested at Millstone Unit 3. (Reference 1).

Reference(1) W. G. Counsil letter to Dr. Thomas E. Murley, Emergency Generator Load Sequencer (SD-45), dated April 30, 1985.

Millstone Unit No. 3

Confirmatory Items

Instrumentation and Control Systems Branch

SER-C42 NUREG-0737, Item II.F.1, Accident Monitoring Instrumentation, Positions (4), (5), and (6) (SER 7.5.2.4)

Positions (4), (5), and (6) of this Action Plan item require installation of extended range containment pressure monitors, containment water level monitors, and containment hydrogen concentration monitors. Table 7.5-1 of the FSAR indicated that the information on these parameters is as follows:

(1) containment pressure (extended range)

(a) The instruments are environmentally and seismically qualified.
(b) The instrument range extended from 0 to 200 psia.
(c) Two channels are provided.
(d) Two indicators and one dual recorder are provided in the control room.

(2) containment water level (wide range)

(a) The instruments are environmentally and seismically qualified.
(b) The instrument range extended from 0 to 1,500,000 gal.
(c) Two indicators are provided.
(d) Two indicators and one recorder are provided in the control room.

(3) containment hydrogen monitor

(a) The instruments are environmentally and seismically qualified.
(b) The instrument range extended from 0% to 10%.
(c) Two channels are provided.
(d) Two indicators and one recorder are provided.

The information listed above satisfies the requirements of NUREG-0737, Item II.F.1, Positions (4), (5), and (6), except for the instrument accuracy requirement. This information should be provided and justified to be adequate for the intended function. This is a confirmatory item.

Response (3/85)

(1) Containment Pressure (extended range):

Instrument loop accuracy during accident conditions = $\pm$7.8% of span.

If during accident conditions the containment pressure exceeds 60 psia, then these instruments will provide the operators with trending information to aid them in determining the effectiveness of the engineered safety features. Therefore, this accuracy is acceptable.

(2) Containment water level (wide range):

Instrument span = 16 feet starting at approximately 1 foot above the bottom of the containment recirculation sump. This range is equivalent to approximately 4000 gallons to just over 1,500,000 gallons.

Instrument loop accuracy = $\pm$5.0 inches.

This instrument is used by the operators during an accident to verify that water is in the containment sump before allowing the containment spray recirculation pumps to start automatically. Before the recirculation pumps start, over 9000 gallons (approximately 8 inches of indication) will be in the sump and the corresponding level indicated in the control room. Therefore, this range and accuracy are acceptable.

(3) Containment hydrogen monitor:

Instrument accuracy = $\pm$2% of full scale for a range of 0-10% hydrogen.

The containment hydrogen monitor is used only for monitoring purposes; there are no automatic trip functions associated with it. Therefore the accuracy must be small enough such that the operator is provided with unambiguous indication. Based upon the above stated accuracy the operator can monitor the hydrogen concentration inside of the containment to within $\pm$ 0.2% hydrogen. Because the minimum flammability concentration of hydrogen in air is approximately 4%, the accuracy is adequate to enable the operator to determine how close the containment hydrogen concentration is to the flammability concentration and to monitor the function of the hydrogen recombiners.

The above information should fully resolve the staff's concern regarding Confirmatory Item 42.