

# NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY  
THE HARTFORD ELECTRIC LIGHT COMPANY  
WESTERN MASSACHUSETTS ELECTRIC COMPANY  
NEW YORK WATER POWER COMPANY  
NORTHEAST UTILITIES SERVICE COMPANY  
NORTHEAST NUCLEAR ENERGY COMPANY

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April 14, 1982

Docket No. 50-336  
A02327

Director of Nuclear Reactor Regulation  
Attn: Mr. Robert A. Clark  
Chief Operating Reactors Branch #3  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555



- References:
- (1) W. G. Council letter to R. Reid, dated January 25, 1979.
  - (2) W. G. Council letter to R. Reid, dated June 25, 1979.
  - (3) R. A. Clark letter to W. G. Council, dated February 26, 1982.

Gentlemen:

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2  
ADDITIONAL INFORMATION - INSERVICE  
INSPECTION AND TESTING PROGRAM

In Reference (3), the NRC Staff requested Northeast Nuclear Energy Company (NNECO) to provide additional information regarding the proposed Inservice Inspection (ISI) program for Millstone Unit No. 2. The following information is hereby provided in response to that request.

1. Under the change in regulation 10CFR50.55a effective November 1, 1979, your ISI program, when finally approved, will cover the last eighty months of your current 10-year inspection interval, i.e., from April 26, 1979 to December 26, 1985. Does this result in any changes you wish to make in your relief requests? Do you require other ISI relief?

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Response

The relief requests docketed in References (1) and (2) remain applicable to Millstone Unit No. 2. Portions of the Inservice Inspection (ISI) and Inservice Testing (IST) programs have been updated to later editions of the applicable codes as permitted by 10CFR50.55a(g)4(iv) to allow NNECO to use the most recent techniques in examination procedures, evaluations, repairs and replacements. NNECO has deleted snubber attachment welds to the steam generators (Category C-C) as these snubber lugs are not subjected to loading during normal operations and, therefore, not considered supports. Consequently, no examination is required. NNECO has also deleted the examination of Class 2 bolting of 2 inches and below. This is in accordance with the 1977 Edition S78 addenda (Category C-D) which has been amended to require examination of pressure retaining bolting exceeding 2 inches. Millstone Unit No. 2 does not have Class 2 bolting exceeding 2 inches.

2. In regards to vessel shell welds N-2 and N-6, you stated in Reference 2 that both volumetric and surface examination of the lower half is precluded by inaccessibility. What kind of visual examination "for signs of structural distress" (as stated in Reference 1) is thus possible? What progress have you made in your study of methods to conduct remote examinations of these areas? Have you identified a feasible method and are you prepared to commit to doing it by 1985?

Response

NNECO hereby withdraws this relief request. Nozzle-to-vessel welds N-2, N-4 and N-6 will be examined.

3. In regards to casing welds on recirculating coolant pumps, have you made any visual inservice inspections of these pumps? If so, document results by reference to previous NRC submittals? Have you identified a feasible method for volumetric inspection and are you prepared to commit to doing it by 1985?

Response

No visual inservice inspections have been performed on the Millstone Unit No. 2 reactor coolant pumps (RCP's) to date. Millstone Unit No. 2 utilizes Byron-Jackson-Borg-Warner Type DFSS pumps manufactured in 1972. Figures 1 and 2 illustrate the dual casings which comprise these pumps. Due to this double wall construction, use of the MINAC for examinations is not possible since placement of either the radiographic source or film on the inside of the welds under examination is impossible.

Ultrasonic examination of these heavy wall castings using current techniques would be of questionable benefit due to the grain size and back reflection problems.

The reactor coolant pumps presently being examined using the MINAC are of a different design which enables single wall radiographs. No deterioration of pump casings has been reported to date. The examinations result in large expenditures in time and radiation exposure and are extremely expensive.

With the current state-of-the-art, NNECO hereby requests relief from the ISI requirements for RCP's since no valid examination technique is available. If, before 1985, a reasonable examination technique is developed for Byron-Jackson type pumps, NNECO will reevaluate this relief request.

4. In regards to the nozzle-to-vessel welds on the shutdown heat exchangers, please supply information (or document by reference to previous submittals) to support the contention that "the nozzles are not subjected to high stresses under any mode of operation" (in comparison to design stresses). Please estimate the potential radiation exposure (in man-rem, etc.) of doing a limited volumetric examination. What portion of the welds can be volumetrically examined?

Response

This relief request is withdrawn. NNECO will perform ultrasonic examinations to the extent practical on the shutdown cooling heat exchanger nozzle-to-vessel welds. In the event a code-acceptable examination utilizing ultrasonic techniques cannot be performed, this inspection will be supplemented by a surface examination. The nozzle-to-vessel welds in question are illustrated in Figure 3.

5. The exemption criteria in Paragraph IWC-1220 have been modified in the 1977 Edition of Section XI. Pipe cracking in affected systems has been the subject of several I & E Bulletins and NRC study groups. The Section XI exemption criteria are being superseded by augmented examination requirements on a case-by-case basis during the reviews of ISI programs. The basic principle in these modifications is that emergency core cooling, residual heat removal and containment heat removal systems should not be completely exempted from inservice examination based on Section XI criteria.

Your ISI program must contain periodic volumetric and/or surface examinations of a representative sample of welds in the ECCS, RHRS, and CHRS. Please develop an examination program to meet this requirement and submit it for review and approval. If you have previously done so, please document by reference.

Response

ECCS, RERS, and CHRS piping are now and have been inspected except for (1) IWC1220(c) components that are 4 inches and less in diameter and (2) IWC1220(a) piping from the RWST to the pumps suction which remains flooded and pressurized to the head of the RWST. This program is contained within our Class 2 Inspection Manual and is in compliance with the exemption criteria of the 1977 Edition Summer 1978 Addenda.

In addition to the responses provided to the Reference (3) information request, NNECO hereby provides, as Attachment 1, a revised page 4 to the Reference (2) ISI/IST relief request. This revision incorporates experience gained to date during pump vibration monitoring.

The change in velocity spectrum range will provide more meaningful data on low speed pumps such as the service water pumps. Essentially, all bearing defects can be seen in the selected range. Improved resolution is obtained by using a narrower frequency range for low speed pumps.

The revision to the acceptance criteria will eliminate unnecessary testing caused by random, meaningless changes in individual peaks of the vibration signature. Experience has demonstrated that many units exhibit random signature changes in excess of 6 dB which are not indicative of deteriorating pump conditions. On subsequent testing, these changes frequently disappear. Using RMS amplitude changes for "alert" levels will provide adequate assurance that deteriorating pumps are monitored more frequently.

We trust you find this information responsive to the Reference (3) requests and concur with the attached revision to our relief request for Millstone Unit No. 2.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

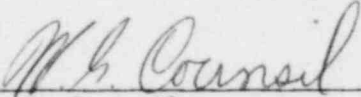
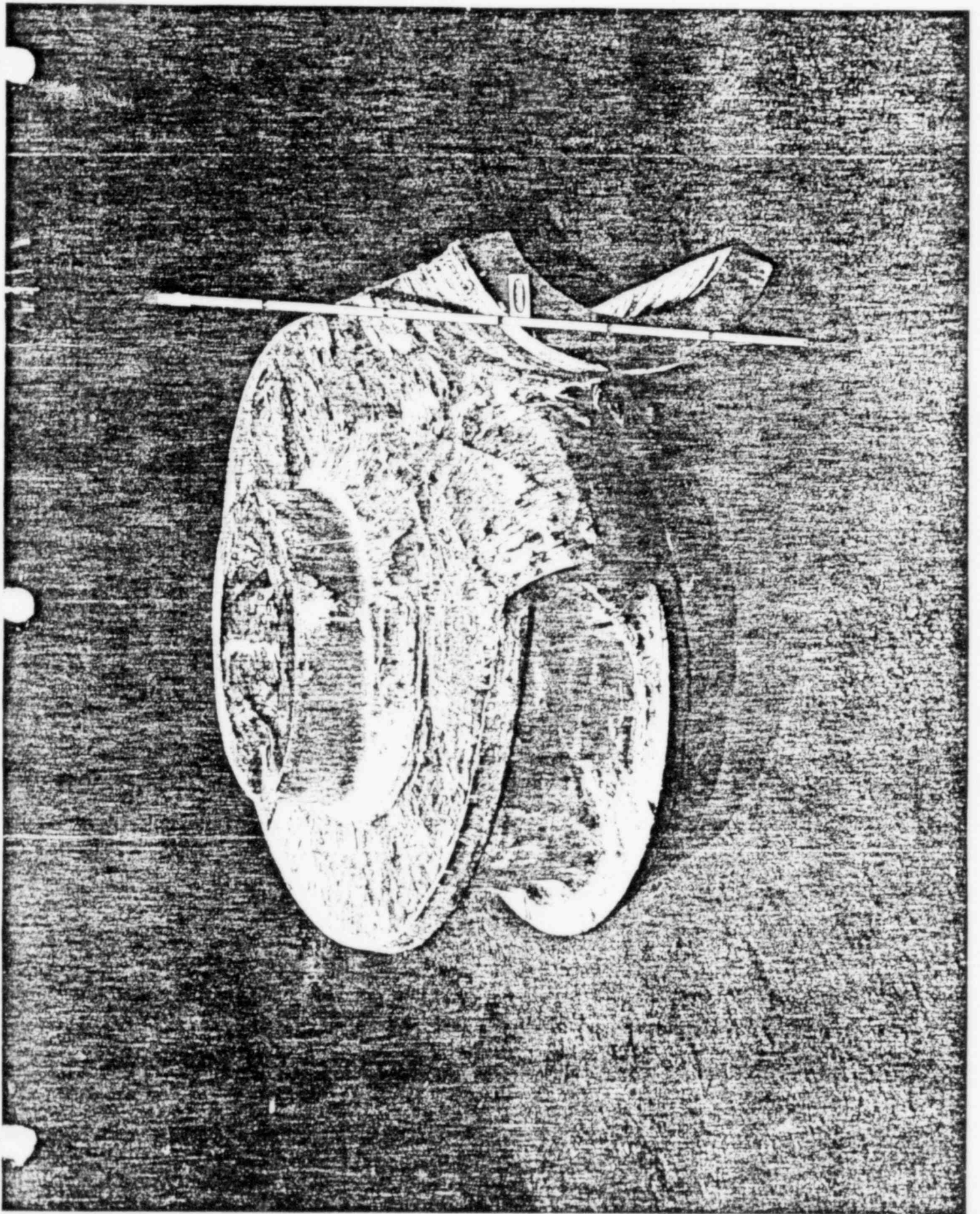
  
\_\_\_\_\_  
W. G. Council  
Senior Vice President

FIGURE 1



BGE

FIGURE 2



BGE

FIGURE 3  
MILLSTONE UNIT NO. 2 SHUTDOWN HEAT EXCHANGER

