



**Northeast
Utilities System**

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Hartford, CT 06141-0270
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December 16, 1994

Docket No. 50-423
B15064

Re: 10CFR50.55a(g)

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Millstone Nuclear Power Station, Unit No. 3
Inservice Inspection Program - Relief Request from
Performing Volumetric Examination of Inner Radius
of Steam Generator Main Steam Nozzle

Technical Specification 4.0.5 for Millstone Unit No. 3 states that the Inservice Inspection and Testing of the American Society of Mechanical Engineers (ASME) Code Class 1, 2 and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and Applicable Addenda as required by 10CFR50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10CFR50.55a(g)(6)(i). The purpose of this letter is for Northeast Nuclear Energy Company (NNECO) to submit a relief request from performing the required volumetric examination of the inside radius sections of steam generator main steam nozzles at Millstone Unit No. 3. The applicable edition of Section XI of the ASME Code for the Millstone Unit No. 3, first 10-year inservice inspection (ISI) interval is the 1983 Edition, through Summer 1983 Addenda.

10CFR50.55a(g)(5) states that if the licensee determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for its facility, information should be submitted to the Commission in support of that determination and a request be made for relief from the ASME Code requirement. Accordingly, pursuant to 10CFR50.55a(g)(5)(iii), NNECO is hereby requesting relief from performing the in-service volumetric examination of the inner radius sections of the steam generator main steam nozzles at Millstone Unit No. 3. The relief request is included as Attachment 1.

ASME Section XI 1983 Edition through the Summer 1983 Addenda Table IWC-2500-1, item C2.22 requires a 100 percent volumetric

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examination of the inside radius sections of nozzles without a reinforcing plate in vessels (e.g., steam generators) greater than $\frac{1}{2}$ inch nominal thickness, as defined by Figure IWC-2500-4 (a) or (b). The inside radius section of the four main steam nozzles per ASME Section XI are considered susceptible to flaw initiation and growth due to high thermal and mechanical stresses associated with the vessel and connected piping systems. However, for the Millstone Unit No. 3 steam generator main steam nozzles, each nozzle is a one-piece forging containing a set of seven holes bored parallel to the nozzle centerline.

NNECO believes that this nozzle design does not fall under the criteria of a "radiused nozzle" as defined in Figure IWC-2500-4. Since the ligaments between the holes distribute the loads throughout the nozzle forging, the primary stress resulting from pressure is significantly lower than the expected for a typical nozzle inner radius region. The thermal stresses for this type of nozzle are also lower than those for a typical nozzle since the plate ligaments provide both reinforcement and additional insulation by directing the flow away from the nozzle inner radius. Furthermore, the local stresses resulting from the thermal gradients in the inner radius are expected to be low since the nozzle is only exposed to saturated steam resulting in a low heat transfer between the nozzle and the coolant. In lieu of a 100 percent volumetric examination, NNECO proposes to perform visual examinations during system leakage tests required by ASME Section XI and Code Case N-498. It is noted that a similar request was approved by the NRC on Indian Point 3 docket (Docket No. 50-286) on November 7, 1991.⁽¹⁾

To allow implementation of the proposed alternative examination provided in the relief request during the next scheduled refueling outage, NNECO hereby requests the NRC Staff approve this relief

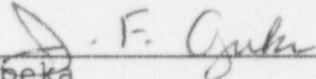
(1) R. A. Capra (NRC) letter to R. E. Beedle, "Safety Evaluation of Second Ten-Year Interval Inservice Inspection Plan and Associated Relief Requests for Indian Point Nuclear Generation Unit No. 3," dated November 7, 1991.

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request prior to April 14, 1995. If you have any questions on this request, please contact Mr. R. G. Joshi at (203) 440-2080.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



J. F. Opeka
Executive Vice President

cc: T. T. Martin, Region I Administrator
V. L. Rooney, NRC Project Manager, Millstone Unit No. 3
P. D. Swetland, Senior Resident Inspector, Millstone Unit
Nos. 1, 2, and 3

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Attachment 1

Millstone Nuclear Power Station, Unit No. 3
Relief IR-19, Inner Radius of the Main Steam Nozzles

December 1994

Millstone Unit No. 3
Relief From In-Service Inspection Requirements

Relief Request: IR-19

Inner Radius of the Main Steam Nozzles of the Steam Generators.

Component Identification:

Code Class: 2 Examination Category: C-B

Code Requirement:

ASME Section XI 1983 Edition through the Summer 1983 Addenda Table IWC-2500-1, Item C2.22 requires a 100% volumetric examination of the nozzle inside radius of nozzles without reinforcing plate in vessels greater than $\frac{1}{2}$ inch nominal thickness, as defined by Figure IWC-2500-4 (a) or (b). In the case of multiple vessels of similar design, size, and service (i.e., steam generators), the required examinations may be limited to one vessel or distributed among the vessels.

Code Relief Request:

Pursuant to 10CFR50.55a(g)5(iii), relief is requested from performing the in-service volumetric examination of the Inner Radius of the Main Steam Nozzles.

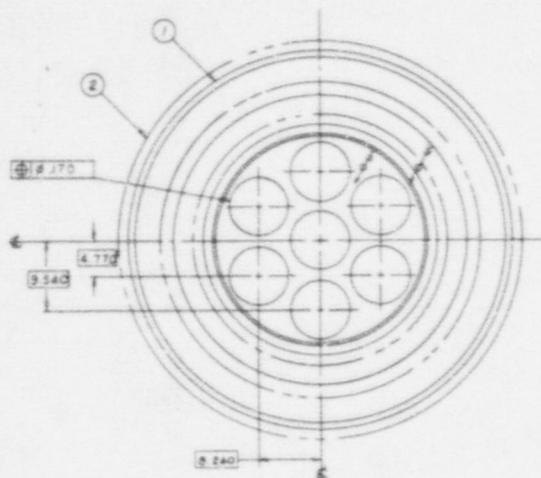
Proposed Alternative Examinations:

NNECO will perform visual examination during system leakage tests as required by Section XI and Code Case N-498.

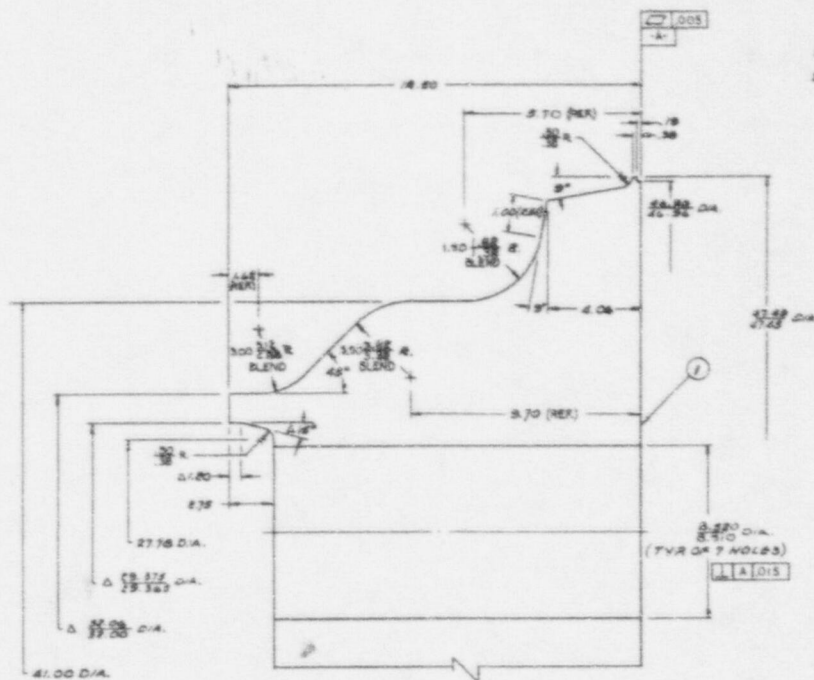
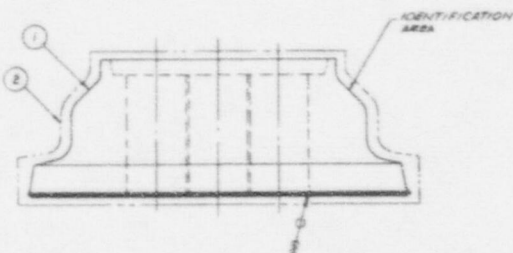
Basis for Requesting Relief:

NNECO believes that, in evaluating the above referenced ASME Code, the concern is that the inside radius of the four Main Steam Nozzles are considered susceptible to flaw initiation and growth due to high thermal and mechanical stresses associated with the vessel and connected piping systems. In the case of the Millstone Unit No. 3 steam generator nozzles, the nozzle is a one-piece forging containing a set of seven holes bored parallel to the nozzle centerline (refer to figure). NNECO believes that this nozzle design does not fall under the criteria of a "radiused

nozzle" as defined in Figure IWC-2500-4 (referenced above). Since the ligaments between the holes distribute the loads throughout the nozzle forging, the primary stress resulting from pressure is significantly lower than the expected for a typical nozzle inner radius region. The thermal stresses for this type of nozzle are also lower than those for a typical nozzle since the plate ligaments provide both reinforcement and additional insulation by directing the flow away from the nozzle inner radius. Furthermore, the local stresses resulting from the thermal gradients in the inner radius are expected to be low since the nozzle is only exposed to saturated steam resulting in a low heat transfer between the nozzle and the coolant.



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