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Vice President

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October 16, 1987

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

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

SUBJECT: Second Ten-Year Interval Inservice Inspection Program
Relief Request No. 25

By letter dated September 30, 1985, we submitted our ten-year Inservice Inspection Program for the second inspection interval (July 1, 1984 to July 30, 1994). Additional information in support of our program was submitted by letters dated July 17, 1987 and September 3, 1987. Attached is Relief request No. 25 which supplements that program. The relief request demonstrates the impracticality of volumetric examination of steam generator feedwater inlet nozzle and secondary-side steam outlet nozzle inside radius sections at Indian Point Unit No. 2 and provides an alternative method of examination consistent with plant operational safety. Pursuant to 10 CFR 170.12, Con Edison check No. E627733 for \$150.00 is enclosed.

If you have any questions, please do not hesitate to contact my office.

Very truly yours,

Murray Selman

24.190.10.5.2

cc: Ms. Marylee M. Slosson
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Division of Reactor Projects I/II
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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Relief Request 25

1. Components/Requirements For Which Relief Is Requested

- (a) Name: Nozzle Inside Radius sections
- (b) Function: Steam Generator Feedwater Inlet Nozzles and Steam Outlet Nozzles, Secondary Side
- (c) ASME Section XI Code Class 2

2. Reference Code Requirements That Have Been Determined To Be Impractical

Provisions of Section XI 80/W81 Table IWC-2500-1 Item C2.22 Volumetric examination of nozzle inside radius section.

3. Alternate Examination

In lieu of the above requirement for volumetric examinations the nozzle areas will be visually examined for evidence of leakage during system hydrostatic tests. In addition, if sufficient access is provided during normal steam generator maintenance, the inner radius section of one feedwater inlet nozzle will be visually examined once per interval to the extent permitted by a thermal sleeve connecting to a feedwater ring assembly. Given Con Edison's and the industry's overall history of satisfactory operation of steam generators, the requirement to perform a visual examination of the nozzle's inside surface once per interval, when suitable access is provided during normal steam generator maintenance, is considered sufficient to assure a continued overall satisfactory level of plant safety.

4. Basis For Requesting Relief And Alternate Examination

Each of four steam generators contain one steam outlet nozzle and one feedwater inlet nozzle.

Ultrasonic examination of the steam outlet nozzles is precluded by the complex geometry resulting from the combination of a small nozzle inside radius (1 3/4"R) and a large non-concentric outer nozzle radius section (5"R in parts). In addition, the short flat in the nozzle barrel section precludes scanning in the nozzle axial direction and the curved non-spherical top dome precludes scanning in the nozzle radial direction.

General access to the inside of the steam outlet nozzle requires that the plant be shut down, and the secondary side manway be opened. Specific access to the inside of the steam outlet nozzle for potential radiographic examinations or visual examinations is precluded by internally mounted swirl vane assemblies and mist extractors.

Ultrasonic examination of the feedwater nozzle inner radius is precluded by the complex geometry resulting from the combination of a

small nozzle inside radius (1 3/4"R) and a large non-concentric outer nozzle radius (5" R in parts). The geometry is also complicated by the intersection of the nozzle and the cylindrical shell section.

General access to the inside of the feedwater inlet nozzle is also limited by a combination of factors, including the need to shut down the plant, open the secondary side manway, grind out welded plates to gain access to the feed ring area and the confined area in the feedwater nozzle vicinity. In addition, a mechanically connected thermal sleeve in the nozzle precludes both film placement for possible radiography and meaningful surface examination. The existing configuration permits an extremely limited visual exam of only the vertical surfaces of the inner radius.

There is no change expected in the overall level of plant safety by performing the proposed alternate examinations. The plant was designed and built to comply with then existing ASME Code requirements. These codes did not require a capability for volumetric examination of the inner radius of nozzles. Moreover, the design of the inner radius sections minimizes stresses to assure satisfactory operation.

In the case of the feedwater nozzle thermal stress in the nozzle inside radius section is minimized by a thermal sleeve which prevents significant exposure of the hot inner radius to colder incoming feedwater. Thermal stresses are minimized in the steam generator nozzle inside radius section via direct exposure to main steam in combination with insulation on the nozzle outside surface.

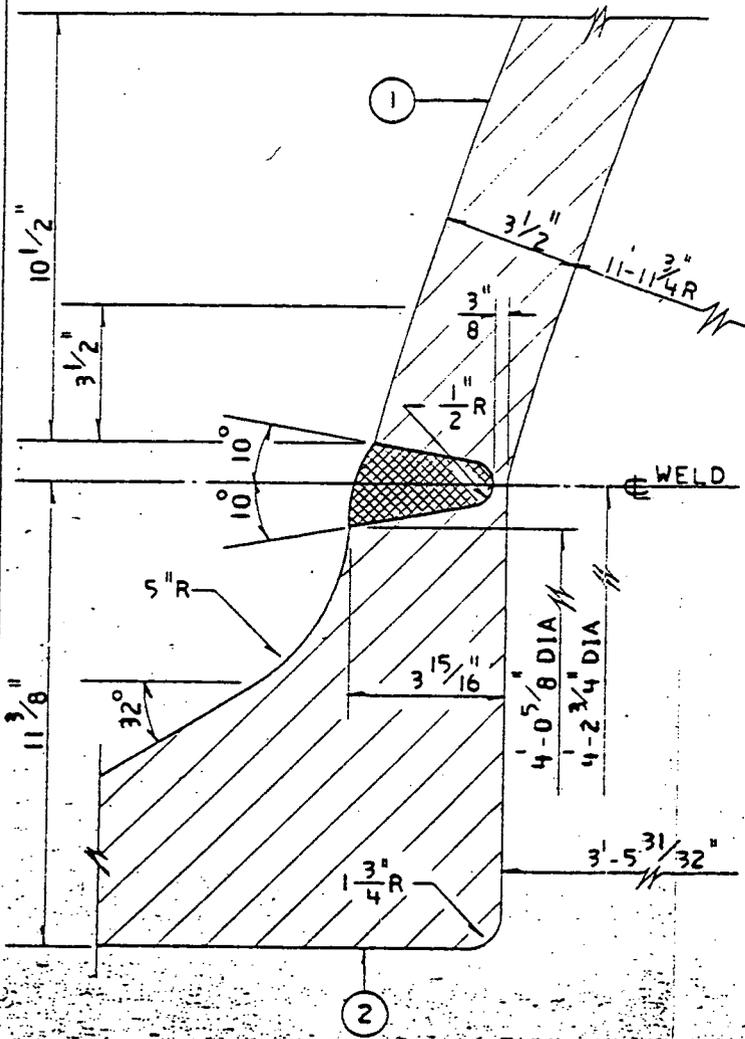
Steam generator nozzle inner radius sections have a history of satisfactory operation since initial plant operation.

The alternate inspections identified herein will be accomplished consistent with the original plant design and fabrication requirements.

Reference drawings attached:

Feedwater Inlet Nozzle D-207800
Steam Outlet Nozzle D-207799

STATION INDIAN POINT NO. 2
 DWG. NO. **D207799**



COMPONENT/LINE NO. STEAM GENERATOR NO. 21 REF. DWGS. A206914
 QUALITY GROUP B

MATERIALS				
NO.	PRODUCT FORM (CONFIGURATION)	MFG./WELD PROCESS	MATERIAL (TYPE)	MTL. SPEC (ASTM/SA)
1	TOP HEAD	PLATE	MN MO STL	SA 302 GR B
2	STM OUTLET	FORGING	ALLOY STL	SA 336

CALIBRATION BLOCK NO. _____
 FABRICATION SPEC. _____
 FABRICATION CODE _____ CLASS _____ EDITION _____ ADDENDA _____
 SURFACE COATING _____
 SURFACE FINISH _____
 CROWN CONDITION _____
 SCANNING LIMITATIONS _____
 ACCESS RESTRICTIONS _____
 WELD MARKINGS _____
 SCAFFOLDING ROOMTS. _____
 INSULATION DETS. _____

EXPOSURE LEVELS	mr	ON CONTACT	DATE	mr	@ X FT.	DATE

COMMENTS _____

**NOT FOR FABRICATION
 OR INSTALLATION**

THIS ISSUE IS NON-CLASSIFIED PER CJ 140-1. RELEASE FOR RECORD. PN 1076 11-3-78

STATION - INDIAN POINT NO. 2
 WELD DETAIL FOR INSERVICE INSPECTION
 WELD NO. SGN-21-1
 DRAWN BY DJC CHECKED NICHOLS
 SCALE 1-0 1-7076-001

CHIEF DESIGNER
 ENR
 DATE 11/1/78
 DWG. NO. D207799-0

CONSOLIDATED EDISON CO. OF N. Y., INC.
 DWG. NO. **D207799-0**
 RECORDED 11/27/78

