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June 29, 1984

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

Director of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

ATTN: Mr. Steven A. Varga, Chief  
Operating Reactors Branch No. 1  
Division of Licensing

Dear Mr. Varga:

Transmitted as Attachment A to this letter are five requests for relief from the ASME B&PV Code Section XI nondestructive examination requirements submitted as required by 10 CFR 50.55a (g). The provisions of these relief requests are intended for application during the current Indian Point Unit 2 refueling and Inservice Inspection (ISI) outage. Accordingly your early review and approval are requested.

Additional relief requests may be submitted in the near future as the need for them develops based on our inservice inspection (ISI) activities during this outage.

Should you or your staff have any questions, please contact us.

Very truly yours,



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Relief Request G\*

1. Components for Which Relief is Requested

(a) Name: Reactor Vessel Flange Ligaments  
between threaded stud holes

(b) Function: Reactor vessel flange ligaments

(c) ASME Section XI Code Class: 1

2. Reference Code Requirements That Have Been  
Determined to be Impractical

Provisions of Section XI 74/S75 Table IWB-2600 item Bl.9 - volumetric examination of ligaments between threaded stud holes.

3. Alternate Examinations

Provisions of Section XI 74/S75 Table IWB-2600 item Bl.9 will be applied during the first inspection interval to 50 of 54 reactor vessel flange ligaments in lieu of 54 of 54 ligaments, and 100% of the vessel flange stud holes will be visually examined.

4. Basis for Requesting Relief and Alternate  
Examinations

Two reactor vessel guide studs are required to remain in place prior to, during and after the automated reactor vessel examination to assure proper alignment during removal and replacement of the reactor head, inspection tool and lower internals. The placement of two guide studs precludes automated inspection of the two immediately adjacent ligaments for each guide stud (4 total). Fields of 1 to 3 R/HR in the flange vicinity inhibit manual ultrasonic examinations with the core installed. Access to the flange area is precluded by a high level of water in the refueling pool with the core removed. Satisfactory inspection of 50 of 54 ligaments will provide an adequate basis for concluding that all ligaments are satisfactory.

\* Relief requests A-F were transmitted to NRC by Con Edison letter dated May 11, 1984.

Relief Request H

1. Components for Which Relief is Requested

- (a) Name: Calibration Block
- (b) Function: Calibration for ultrasonic examination of piping welds.
- (c) ASME Code Class: N/A

2. Reference Code Requirements That Have been Determined to be Impractical

The provisions of Section XI 74/S75 IWA-2232 which invokes Section V Article 5. This article stipulates the characteristics of the calibration block used for piping examinations and in particular calls for a block with side drilled holes as the reflector surface.

3. Alternate Examinations

The ultrasonic examinations procedures for piping will be upgraded to Section V Article 5 1977 through summer 1978 addenda for the calibration block design.

4. Basis for Requesting Relief and Alternate Examinations

The specification of the later editions and addenda of Section V will allow the use of calibration blocks with notches as the calibration reflector in lieu of side drilled holes. The use of notches as the calibration reflector has been adopted as the industry standard for piping examinations in later editions of the Code. The notch reflector more closely approximates potential reflectors on the piping inside surface which is the area of prime inspection interest.

## Relief Request I

### 1. Component for Which Relief is Requested

- (a) Name: Welds on various components
- (b) Function: Weld joints
- (c) ASME Section XI Code Classes 1,2

### 2. Reference Code Requirements That Have Been Determined to be Impractical

Provisions of Section XI 74/S75 IWA-2232 which invokes Article 5, Section V. Article 5 paragraph T-532(e) references figure T-535.2(C) as a typical two search unit technique for detecting transverse discontinuities. Paragraph T-535.2(e) alternatively allows a one search unit technique if the weld surface is sufficiently smooth.

### 3. Alternate Examinations

Where joint geometry and/or the surface finish of the weld does not permit the techniques stipulated in paragraph T-535.2(e) for transverse discontinuities we will use an ultrasonic scanning technique which places the search unit on the surface adjacent to the weld with the sound beam directed into the material parallel to the weld axis. The search unit is then angled a maximum 15 degrees toward the weld to direct the beam into the weld material. The transducer is rotated from 0 to 15 degrees towards the weld while moving along the weld edge around the joint indexing with at least a 10 percent overlap. The examination is then repeated in the reverse direction along the same weld edge. Calibration of the technique will be done with the sound beam directed into the material normal to the axis of the calibration reflector.

### 4. Basis for Requesting Relief and Alternate Examinations

The Indian Point Unit 2 piping systems were designed and built to codes in effect in the late 1960's. These codes did not fully provide for inservice inspection considerations such as inspection access, weld joint geometry or weld surface finish. Examinations as stipulated in paragraph T-535.2(e) are impractical to accomplish in some cases. Generally these limitations exist at pipe to fitting welds where because of the fitting geometry the examinations can only be performed from one side and/or the as welded contour or surface finish of the weld crown precludes placing the search unit directly on the weld surface. Where these cases exist we will use the special technique described above for transverse discontinuities to provide as much inspection coverage as is reasonably achievable.

## Relief Request J

### 1. Component for Which Relief is Requested

- (a) Name: RHR Heat Exchangers 21 & 22
- (b) Function: Residual Heat Removal
- (c) ASME Section XI Code Class: 2

### 2. Reference Code Requirements That Have Been Determined to be Impractical

Provisions in Section XI 74/S75 IWC-2600

Item Cl.1, category C-A, Circumferential Butt Welds, Volumetric examination.

Item Cl.2, category C-B, Nozzle to vessel welds, Volumetric examination.

Item Cl.3, category C-C, Integrally welded supports, surface examination.

### 3. Alternate Examinations

In lieu of the above examination requirements the RHR heat exchangers will be visually examined for leakage during the system hydrostatic test.

### 4. Basis for Requesting Relief and Alternate Examinations

Access for examination of the RHR heat exchangers circumferential welds, integrally welded supports and nozzle to vessel welds is precluded by a combination of insulation design and high radiation fields. Specifically the insulation was not designed for removal and replacement to support examinations. The Residual Heat Removal (RHR) heat exchangers are vertically mounted. The bottom head is insulated. The insulation is designed as essentially one unit supported by shaping the insulation around the inlet and outlet piping. Removing that portion of the insulation required for examination access will result in removing vertical support for the insulation on the head. Careful controlled removal of insulation will require erection of scaffolding and significant work activity near the head where radiation fields are in the order of 30-35 R/HR. The effort to erect scaffolding, remove the insulation, prepare surfaces for examination, conduct the examinations, replace the insulation and disassemble the scaffolding is considered unwarranted in view of the high fields where these activities will take place. Considering the high fields, the visual examination during system hydrostatic testing is sufficient to demonstrate continuing integrity of the RHR heat exchangers.

Relief Request K

1. Components for Which Relief is Requested

(a) Name: 14" Motor Operated Gate Valves 730 and 731.

(b) Function: Residual Heat Removal  
System Isolation Valves

(c) ASME Section XI Code Class: 1

2. Reference Code Requirements That Have Been Determined to be Impractical

ASME Section XI 74/S75 Table IWB-2500, Item B6.7, category B-M-2, visual examination of internal pressure boundary surfaces.

3. Alternate Examinations

Subsequent to each refueling and prior to plant operation, the valves shall be visually examined for leakage during performance of the Reactor Coolant System hydrostatic test. In addition the valves shall be leak tested per IWV-3240 during reach refueling.

A visual examination of the internal pressure boundary surface will be accomplished to the extent permitted by valve disassembly in the event the valve is opened for required maintenance.

4. Basis for Requesting Relief and Alternate Examination

Valves 730 and 731 are identical 14" motor operated gate valves, one of which would normally be disassembled during the first inspection interval for examinations of the internal pressure boundary surfaces. Valve 731 is the first isolation valve off the Reactor Coolant System. Access to the valve internals is precluded by high radiation fields and the need to maintain a water level in the refueling canal for shielding personnel from the lower reactor internals. Although the fields in the area of valve 730 are significantly lower, it is considered that disassembly of either valve at this time is not warranted. Valve 730 is the second isolation valve. Opening this valve for inspection would result in only one isolation valve (731) between the opened valve 730 and the shielding water in the refueling canal. Maintaining only single valve isolation to support a visual examination is not considered prudent in this case. Although valve 731 has proven leak tight during various tests if leakage did develop in this valve there is the potential for lowering the refueling canal water level with personnel exposures resulting from uncovering the reactor lower internals. The intent of the Code specified internal visual examinations is to verify continued integrity of the valve pressure boundary. Valves 730 and 731 are visually examined for leakage after each refueling outage during the hydrostatic tests of the Reactor Coolant System (RCS) when these valves are subject to full RCS pressure. The integrity of the valves pressure boundary parts has therefore been well demonstrated by these continuing hydrostatic tests. Additionally the valves have been added to the ASME Section XI

Subsection IWV Inservice Testing Program and have been satisfactorily leak tested. These valves have also operated satisfactorily when required during plant operation since initial plant operation. The combination of hydrostatic tests, leak tests and satisfactory operation is sufficient to demonstrate continuing valve pressure boundary integrity without the need for valve disassembly. In the event that these valves are disassembled for maintenance they will be visually examined at that time. Considering these overall factors and in the interest of maintaining low personnel exposures it is in the best interest of plant operation to avoid valve disassembly until required.