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November 22, 1999

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

Document Control Desk
US Nuclear Regulatory Commission
Mail Station P1-137
Washington, DC 20555-0001

Subject: Supplemental Information Regarding ASME Code Relief Request
Nos. 37 and 39

Reference: 1) Con Edison Letter to USNRC dated June 8, 1999
2) November 9, 1999 Conference Call Between Con Edison and
NRC
3) Con Edison Letter to USNRC dated February 2, 1990

Pursuant to 10 CFR 50.55a(a)(3), Consolidated Edison Company of New York, Inc. (Con Edison) previously submitted via Reference 1, a request for approval of alternatives to the ASME Boiler & Pressure Vessel Code Section XI requirements for Inservice Inspections.

On November 9, 1999, discussions between members of your staff and Con Edison were held, specifically in regard to Relief Request No. 39. This request proposed an alternative to the ASME B&PV Code, Section XI, 1992 Edition, with 1992 Addenda requirements regarding surface and volumetric examination of Class 2 piping. The piping welds affected are limited to the Service Water System, which receives radiographic inspections for erosion/corrosion as a result of concerns identified in NRC Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment." The justification for Relief Request No. 39 is based upon the implementation of our Service Water Radiography Program. Reference 3 documents Con Edison's commitment to this program, which was in response to Required Action III. Per your request, information regarding the Service Water Radiography Program's examination purpose, scope, and acceptance criteria, are provided as Attachment I to this letter.

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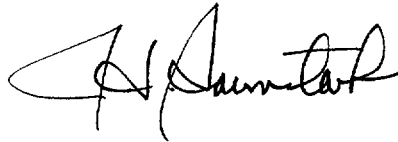
POC A000R 0500247

In addition, Relief Request Nos. 37 and 39 were revised to include the expedited examination of containment requirement cited within 10 CFR 50.55a(g)(6)(ii)(B)(1), the definition of Quality Group "E", and to correct a typographical error. Both Relief Request Nos. 37 and 39 are hereby provided as Attachment II, in their entirety.

No new regulatory commitments are being made by Con Edison in this correspondence.

Should you or your staff have any questions regarding this matter, please contact Mr. John McCann, Manager, Nuclear Safety & Licensing.

Very truly yours,

A handwritten signature in black ink, appearing to read "J. J. Santora". The signature is fluid and cursive, with a large initial "J" and a long, sweeping underline.

Attachments

C: Mr. Hubert J. Miller
Regional Administrator-Region I
US Nuclear Regulatory Commission
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King of Prussia, PA 19406

Mr. Jefferey F. Harold, Project Manager
Project directorate I-1
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ATTACHMENT I

Service Water Radiography Inspection

(Four pages total)

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
November 1999

SERVICE WATER INSPECTION PROGRAM

Immediately prior to and during each outage, the following examinations are planned for the Service Water System.

Inside Containment

10 Inch Piping

Radiographically examine 20% of the welds that have shown moderate scalloping.

Radiographically examine 5% of the welds that have shown scalloping.

Radiographically examine 1% of the welds that have shown minor scalloping.

Radiographically examine 1% of previously accepted or repaired welds.

Visually examine 1 "High Hat", if not examined within the last 3 previous outages.

Fan Cooler Piping (2" CuNi)

Ultrasonic examine 30% of piping within fan coolers prior to completion of the 1993 RFO.

Beyond 1993, ultrasonic examine 10% of the remaining small bore piping and 5% of those areas previously examined.

Piping that shows indications of serious erosion will be radiographed or repaired.

Outside Containment

Identify critical welds, welds that have been previously identified as having minimum to moderate scalloping, and piping systems configured in a manor similar to those which have had problems in the past and examine as described below.

Service Water Pumps and Zurn Strainer Pit

Radiographically examine 10% of those welds identified above.

Radiographically examine 1% of those welds that have been previously accepted or repaired.

Radiographically examine 2 additional non suspect welds.

Turbine Hall

Radiographically examine 10% of those welds identified above.

Radiographically examine 1% of those welds that have been previously accepted or repaired.

Radiographically examine 2 additional non suspect welds.

Primary Auxiliary Building (PAB)

Radiographically examine 10% of those welds identified above.

Radiographically examine 1% of those welds that have been previously accepted or repaired.

Radiographically examine 2 additional non suspect welds.

Visually examine 1 "High Hat", if not examined within the last 3 previous outages.

Diesel Generator Building

Radiographically examine 10% of those welds identified above.

Radiographically examine 1% of those welds that have been previously accepted or repaired.

Radiographically examine 2 additional non suspect welds.

Visually examine 1 "High Hat", if not examined within the last 3 previous outages.

Service Water Chase

Radiographically examine 10% of those welds identified above.

Radiographically examine 1% of those welds that have been previously accepted or repaired.

Radiographically examine 2 additional non suspect welds.

Underground Piping

Visually examine balance of 24 inch piping and begin inspection of 18 inch using camera during the 1993 RFO.

Visually examine balance of 18, 16, and 10 inch piping using video camera during the 1995 RFO.

Re-examine piping at least once during the next 10 year interval.

Bernice C. Keller
SW System Engineer

P. E. Reed
NDE Level III

ADDENDUM 12.1

Page 1 of 1

Directions for Evaluating Service Water Radiographs

1. The through wall percentage of Scalloping shall be evaluated using the attached Addenda 12.1 THROUGH 12.9.
2. The appropriate Table shall be selected according to pipe diameter and radiographic film used. A density reading shall be taken in an unaffected area of the base metal close to the scalloped area. This will establish the base metal density. A density reading shall be taken in the darkest area of the scalloping. This will establish the scalloped density.
3. The base metal reading shall then be located in the first vertical column of the appropriate table. The scalloped density shall be identified by moving horizontally across the chart. The approximate through wall dimension in % is determined by looking at the top of the table. By looking at the bottom horizontal numbers, the approximate remaining wall is indicated.
4. Results shall be identified on the radiographic reader sheets and noted in the comments section of the Service Water Radiography Program database.
5. Welds identified as having no Scalloping shall be considered acceptable.
6. Welds identified as having minor Scalloping shall also be considered acceptable. Welds in this category shall be monitored in accordance with the Service Water Inspection Program.
7. Welds identified as having Scalloping shall be considered acceptable at this time; but due to the advancing nature of the Scalloping, these welds shall be monitored on a more frequent basis in accordance with the Service Water Inspection Program. Thickness readings using ultrasonics shall be required for all areas estimated to have 30% or greater wall loss. Scalloping wells shall be brought to the attention of the Cognizant System Engineer within 72 hours of the evaluation.
8. Welds identified as having moderate Scalloping shall be considered unacceptable. Thickness readings, using ultrasonics, shall be required and the results given to the system engineer for final evaluation for continued operation within 24 hours of the evaluation.

RADIOGRAPHIC PERFORMANCE AND EVALUATION CRITERIA FOR EROSION
CORROSION INSPECTION OF SERVICE WATER PIPE WELDS

1.0 PURPOSE

- 1.1 To establish the performance AND evaluation criteria, for the erosion/corrosion radiographic examination of Service Water pipe welds.
- 1.2 This procedure serves as a screening mechanism to identify eroded/corroded pipe. Areas found to be unacceptable in accordance with the evaluation criteria of this procedure shall be further investigated using the ultrasonic technique for thickness measurement.
- 1.3 The history of the Service Water Radiography Program is discussed in Attachment 11.1. There have been changes over the years, AND it is important to understand why the program exists in its current format.

2.0 DEFINITIONS

- 2.1 Corrosion - The gradual deterioration or wearing away by chemical and electro chemical reaction.
- 2.2 Erosion - The gradual wearing away of a material by abrasion.
- 2.3 RWP - Radiation Work Permit
- 2.4 Scalping - The erosion of base metal, usually close to the weld, that has a scalloped appearance when viewed visually or by radiography. Scalping shall be classified as follows:
- 2.4.1 No Scalping - Good weld, no erosion
- 2.4.2 Minor Scalping - Slight density change in the scalloped area, when compared to the base metal density. Wall loss estimated to be $\leq 20\%$ through wall.
- 2.4.3 Scalping - Noticeable density change in scalloped area when compared to the base metal density. Loss of wall thickness is estimated to be $> 20\%$ and $\leq 50\%$ through wall.
- 2.4.4 Moderate Scalping - Very noticeable density change in scalloped area WHEN compared to the base metal density. Loss of wall thickness is estimated to be $> 50\%$ through wall.

3.0 EQUIPMENT AND MATERIALS

- 3.1 Radiation Source - A gamma ray source consisting of Iridium (Ir-192) shall be used to perform the inspection of the Service Water Piping.

ATTACHMENT II

Relief Request Nos. 37 and 39

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
November 1999

RELIEF REQUEST NUMBER 37

(Page 1 of 3)

COMPONENT IDENTIFICATION

Code Class: (None)
References: IWE-1220(d)
Subsection: IWB & IWC

CODE REQUIREMENTS

Per IWE-1220(d) piping, pumps, and valves that are part of the containment system, or which penetrate, or are attached to the containment vessel shall be examined in accordance with the rules of IWB or IWC, as appropriate to the classification defined by their design specifications. Per 10 CFR 50.55a(g)(6)(ii)(B) licensees of all operating nuclear power plants shall implement the inservice examinations specified for the first period of the first inspection interval in Subsection IWE of the 1992 Edition with the 1992 addenda in conjunction with the modifications specified in §50.55a(b)(2)(ix) by September 9, 2001.

BASIS FOR RELIEF

Pursuant to 10 CFR 50.55a(a)(3)(i), relief is requested on the basis that the proposed alternative would provide an acceptable level of quality and safety.

When the Federal Register published the rules for inservice inspection of containment, ASME B&PV Code, Section XI, 1992 edition with 1992 addenda and specifically subsection IWE, became applicable for inservice inspection of containment. At a minimum, the Code requires all containment penetrations to be Class 2, and that the piping should be examined to the requirements of Subsections IWB or IWC. The Code does not address pre-existing Code requirements. Relief is sought in order to reconcile the differences regarding Quality Groups within the editions of the Code.

The initial Inservice Inspection Program designated plant components and piping, including containment penetrations, as Quality Group A, B, C and None in accordance with NRC Regulatory Guide 1.26, Rev. 3. Quality Group A, B and C piping systems are examined and tested to the requirements of Section XI 1989 edition, as published in the Federal Register. Containment penetrations were classified based on the designation of the associated system. The NRC approved the Inservice Inspection Program for the Third Interval in a letter to Con Edison dated June 3, 1997. This program, per 10 CFR 50.55(a) is written to the ASME Section XI, 1989 edition with no addenda. Non-code piping was subjected to pressure testing per 10 CFR 50, Appendix J.

RELIEF REQUEST NUMBER 37

(Page 2 of 3)

BASIS (continued)

The 1992 edition of the ASME Code with 1992 addenda requires that all piping penetrating or attached to the containment vessel be examined in accordance with the rules of IWB or IWC. The rules for Class 2 in the 1992 edition, 1992 addenda, of Section XI have not been approved for inspection of piping and components at Indian Point. These Codes may only become applicable one year prior to the end of our current interval, provided they have been published in the Federal Register.

Rather than maintain two programs for the inspection of piping and related components, the requirements of ASME Section XI, 1989 edition will be used for the inservice inspection of Quality Group A, B & C and the previously non-Code components.

The inservice inspection of the containment, including repair and replacement will be to the requirements of the ASME Section XI, 1992 edition, including 1992 addenda.

PROPOSED ALTERNATE EXAMINATIONS

Inservice inspection, including Code repair and replacement of previously non-Code piping, pumps and valves that are part of the containment system, or which penetrate or are attached to the containment vessel, are newly designated Class 2. This designation is in accordance with the rules of the 1992 Code, with 1992 addenda. These new Class 2 components are identified as Quality Group E* and will be inspected and maintained to the rules of ASME Section XI, 1989 edition and the inservice inspection program as required for Class 1, 2 & 3 components. In accordance with the current inservice inspection program inspection interval, these inspections will be performed during the 2002 refueling outage, or as permitted by IWA-2430d, no later than January 18, 2003.

* Quality Group "E" is a designation identifying the previously non-code piping, at containment penetrations, that are now included in the inservice inspection program, as Class 2. This designation allows for the separation of Code requirements. The boundary is from the first weld inside of containment to the outermost containment isolation valve, as identified in the IP-2 UFSAR. Quality Group C closed systems will be designated Quality Group E from the first weld inside containment to the first weld outside containment. This is to specifically address the Component Cooling Water System, which, if left upgraded, would be exempt from NDE, based upon the operating pressure and temperature of the system. Currently the Component Cooling Water System is designated Quality Group C and is subject to examination of integrally welded pipe attachments and pressure testing.

RELIEF REQUEST NUMBER 37

(Page 3 of 3)

PERIOD FOR WHICH RELIEF IS REQUESTED

Relief is requested for the third inspection interval, July 1, 1994 through June 30, 2004. Furthermore, this interval has been extended to May 18, 2005 as discussed in Con Edison Letter to USNRC dated April 9, 1999.

JUSTIFICATION FOR RELIEF

Inservice inspections of Quality Group E, previously non-code piping and components that penetrate or are attached to containment, to the same Code edition as required for examination of Class 1, 2 & 3 components, will provide an acceptable level of safety and quality.

The new requirements for the inspection of containment address the examination of Class 1 and 2 piping, components and their supports to the requirements in the 1992 edition, 1992 addenda, of the Code. These requirements have not been approved for the inspection of Class 1 and 2 piping, components and their supports. The current inservice inspection program for Quality Group A, B and C components are required to be performed in accordance to the rules of ASME Section XI, 1989 edition, no addenda. The current inservice inspection program at IP-2 has been previously reviewed and approved by the NRC.

RELIEF REQUEST NUMBER 39
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class: Quality Group B (identified as Quality Group E* for piping upgraded as a result of incorporating the containment code rules)
References: Table IWC-2500-1
Examination Category: C-F-2
Item: C5.50 & C5.60
Description: Pressure Retaining Welds
System: Service Water

CODE REQUIREMENT

The Code requires the performance of surface and volumetric examination of pipe welds.

Per 10 CFR 50.55a(g)(6)(ii)(B) licensees of all operating nuclear power plants shall implement the inservice examinations specified for the first period of the first inspection interval in Subsection IWE of the 1992 Edition with the 1992 addenda in conjunction with the modifications specified in §50.55a(b)(2)(ix) by September 9, 2001.

BASIS FOR RELIEF

Piping in the service water system was originally identified as Quality Group D and received the examinations as required by Section XI. In our response to NRC Generic Letter 89-13, Con Edison committed to performance of a program that including radiography. This was identified in Con Edison Letter to the NRC dated February 2, 1990.

The portion of piping from the first weld inside containment to the second containment isolation valve has now been re-designated Quality Group E* (Class 2) due to the incorporation of the rules for IWE & IWL in the Federal Register. This classification requires the performance of surface and volumetric examination. The piping in the service water system is fabricated using partial penetration welds, square butt preparation with concrete lining, per Con Edison Specification 9321-248-35. This weld configuration does not support volumetric examination as required by the Code.

* Quality Group "E" is a designation identifying the previously non-code piping, at containment penetrations, that are now included in the inservice inspection program, as Class 2. This designation allows for the separation of Code requirements. The boundary is from the first weld inside of containment to the outermost containment isolation valve, as identified in the IP-2 UFSAR. Quality Group C closed systems will be designated Quality Group E from the first weld inside containment to the first weld outside containment.

RELIEF REQUEST NUMBER 39

(Page 2 of 2)

A radiographic technique for the measurement of wall thinning was developed. This technique identifies corrosion problems, unique to this system, and is used to monitor the condition of the system. The 10" service water piping has been examined 100% using this technique. Based on tracking and trending of the conditions identified they are corrected, as required.

PROPOSED ALTERNATIVE PROVISIONS

The surface examination will be performed as required by Code.

Based on the tracking and trending of previously identified conditions, recommendations will be made on the number and locations of welds to be examined. These welds will be examined using the radiographic technique for wall thinning.

In accordance with the current inservice inspection program inspection interval, these inspections will be performed during the 2002 refueling outage, or as permitted by IWA-2430d, no later than January 18, 2003.

PERIOD FOR WHICH RELIEF IS REQUESTED

Relief is requested for the third inspection interval, July 1, 1994 through June 30, 2004. Furthermore, this interval has been extended to May 18, 2005 as discussed in Con Edison Letter to USNRC letter dated April 9, 1999.

JUSTIFICATION FOR RELIEF

The Service Water System has been the focus of examinations beyond that required by Section XI, as identified in our response to Generic Letter 89-13. The Class 2 (Quality Group E) portion represents a small portion (less than 5%) of the system. It will benefit from the examination and evaluation of the overall Service Water System.