

June 2, 2000

Mr. L. W. Myers
Senior Vice President
Beaver Valley Power Station
Post Office Box 4
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SUBJECT: BEAVER VALLEY 1 AND 2 - EVALUATION OF FIRST CONTAINMENT
INSPECTION INTERVAL IWE/IWL PROGRAM REQUEST FOR RELIEF (TAC
NOS. MA8473 AND MA8474)

Dear Mr. Myers:

By letter dated March 6, 2000, FirstEnergy Nuclear Operating Company (FENOC) submitted a request for relief (BV3-IWL1-1, Revision 1) from, and proposed alternatives to, certain requirements of Subsection IWL of Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code for the Beaver Valley Power Station, Unit Nos. 1 and 2. This relief request was submitted as part of the first 10-year primary containment inservice inspection program interval.

The NRC staff has completed its review of relief request BV3-IWL1-1, Revision 1, and the proposed alternatives. As described in the enclosed safety evaluation, the NRC staff has authorized the alternatives in this relief request for the first 10-year primary containment inservice inspection program interval pursuant to 10 CFR 50.55a(a)(3)(i) based on a determination that the proposed alternatives will provide an acceptable level of quality and safety.

If you have any questions regarding this evaluation, please contact the Beaver Valley Project Manager, Daniel Collins, at (301) 415-1427.

Sincerely,

/RA/

Marsha Gamberoni, Acting Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-334 and 50-412

Enclosure: Safety Evaluation

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
REGARDING A RELIEF REQUEST FOR THE FIRST 10-YEAR PRIMARY
CONTAINMENT INSERVICE INSPECTION PROGRAM INTERVAL
PENNSYLVANIA POWER COMPANY
OHIO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
THE TOLEDO EDISON COMPANY
FIRSTENERGY NUCLEAR OPERATING COMPANY
BEAVER VALLEY POWER STATION, UNIT NOS. 1 AND 2
DOCKET NOS. 50-334 AND 50-412

1.0 INTRODUCTION

In the Federal Register dated August 8, 1996 (61 FR 41303), the Nuclear Regulatory Commission (NRC) amended its regulations in Title 10 of the Code of Federal Regulations, Section 50.55a (10 CFR 50.55a; the rule) to incorporate by reference the 1992 edition with 1992 addenda of Subsections IWE and IWL of Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (B&PV Code). Subsections IWE and IWL provide the requirements for inservice inspection (ISI) of Class CC (concrete), and Class MC (metallic) containments of light-water cooled nuclear power plants. The effective date for the amended rule was September 9, 1996, and it requires licensees to incorporate the new requirements into their ISI plans and to complete the first containment inspection by September 9, 2001. However, a licensee may propose alternatives to, or submit a request for relief from, the requirements of the regulation pursuant to 10 CFR 50.55a(a)(3) and (g)(5). In order to obtain authorization or relief, the licensee must demonstrate that: (1) the proposed alternative provides an acceptable level of quality and safety; (2) compliance would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety; or (3) conformance is impractical for its facility.

By letter dated March 6, 2000 (L-00-028), FirstEnergy Nuclear Operating Company (FENOC) submitted a relief request (BV3-IWL1-1, Revision 1) and proposed alternatives to the requirements of Subsection IWL of Section XI of the ASME Code for the Beaver Valley Power Station, Unit Nos. 1 and 2 (BVPS-1 and 2). The NRC's findings authorizing the alternatives are discussed in this evaluation.

Enclosure

2.0 EVALUATION

2.1 Relief Request BV3-IWL1-1, Revision 1

Illumination and examination distance requirements for remote inspection of ASME Code Class CC concrete containments

Code Class	CC Concrete Containments
Code Reference	ASME Section XI, 1992 Edition, 1992 Addenda IWL-2310 and IWA-2210

2.1.1 Code Requirement:

ASME B&PV Code, Section XI, 1992 Edition, 1992 Addenda, requires in Paragraph IWL-2310 and IWA-2210 that specific minimum illumination and maximum distance requirements be met for performing direct examination of all Class CC concrete containment surfaces.

2.1.2 Specific Relief Requested:

In accordance with 10 CFR 50.55a(a)(3)(i), the licensee requests relief from the specific minimum illumination and maximum distance requirements of IWL-2310 and IWA-2210 when performing examination of Class CC concrete containments

2.1.3 Licensee's Basis for Requesting Relief (as stated):

"Accessibility to higher elevations of the concrete containments makes it very difficult to obtain the specific minimum illumination and maximum distance requirements for direct examination of its surfaces. The installation of extensive scaffolding would be necessary and would provide only limited access due to restrictions and equipment interference. Installation and removal of the necessary scaffolding within certain buildings or areas would increase personnel radiation exposure and further risk personnel safety.

The NRC already recognized the difficulty of obtaining the minimum illumination and maximum distance requirements for steel containment structures by providing an alternative in 10 CFR 50.55a(b)(2)(x)(B) [(old rule)] which states, "When performing the visual examinations required by Subsection IWE, the maximum direct examination distance specified in Table IWA-2210-1 may be extended and minimum illumination requirements specified in Table IWA-2210-1 may be decreased provided that the conditions or indications for which the visual examination is performed can be detected at the chosen distance and illumination." This proposed alternative for concrete containment examinations is similar to that already permitted for steel containment structures."

2.1.4 Licensee's Proposed Alternative (as stated):

"In lieu of using the Table IWA-2210-1 test chart characters, the Responsible Engineer will determine the resolution required to ensure indications of interest are detectable. The Responsible Engineer will also identify the minimum size for indications of interest. For remote visual examination, the examination method will be demonstrated capable of resolving these minimum indications to the satisfaction of the Responsible Engineer and the [American Nuclear Insurer Inspector] ANII."

2.1.5 Licensee's Proposed Implementation Schedule (as stated):

"This relief request is applicable to the initial interval of the Containment Inspection Program."

2.1.6 Staff Evaluation of BV3-IWL1-1:

The purpose of performing VT-3C visual examinations on the concrete containment, in accordance with the requirements specified in IWA-2210 and Table IWA-2210-1, is to determine if damage or degradation, including cracks, wear, corrosion, erosion or other physical damage, warrants additional evaluation or repair of the structure. Due to the nature of concrete, a concrete containment will have numerous small "shrinkage type" surface cracks or other imperfections that are not detrimental to the structural integrity of the containment. The NRC staff finds that the application of the code requirements (IWA-2210 and Table 2210-1) for identifying these insignificant "shrinkage-type cracks" or other imperfections is not necessary and could result in a large number of man-hours for erecting scaffolding, using lifts, and evaluating insignificant indications. In addition, performance of examinations on concrete surfaces using distances and illumination requirements determined by a knowledgeable Responsible Engineer will provide an acceptable level of quality and safety, and reasonable assurance of continued containment integrity. Furthermore, the NRC staff made some changes to the rule (10 CFR 50.55a(b)(2)(ix)(B); current rule) to allow the following: "When performing remotely the visual examination required by Subsection IWE, the maximum direct distance specified in Table IWA-2210-1 may be extended and the minimum illumination requirements specified in Table IWA-2210-1 may be decreased provided that the conditions or indications for which the visual examination is performed can be detected at the chosen distance and illumination."

3.0 CONCLUSION

The NRC staff has evaluated the licensee's March 6, 2000, submittal for BVPS-1 and 2. Based on the information provided in the request for relief BV3-IWL1-1, Revision 1, the NRC staff finds that the licensee's proposed alternatives will provide an acceptable level of quality and safety, and will provide reasonable assurance of containment integrity. Therefore, the proposed alternatives in Relief Request BV3-IWL1-1, Revision 1, are authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the first 10-year primary containment ISI program interval.

Principal Contributors: S. B. Kim
D. Collins

Date: June 2, 2000