

July 20, 2001

Mr. Oliver D. Kingsley, President  
Exelon Nuclear  
Exelon Generation Company  
Executive Towers West III  
1400 Opus Place, Suite 500  
Downers Grove, IL 60515

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2 - SECOND 10-YEAR INTERVAL  
INSERVICE INSPECTION PROGRAM PLAN REQUEST FOR RELIEF I2R-35,  
REVISION 1 (TAC NOS. MA7304 AND MA7305)

Dear Mr. Kingsley:

By letter dated October 16, 2000, Commonwealth Edison Company (ComEd) submitted the relief request I2R-35, "Alternative Requirements for Qualification of VT-2 Examination Personnel" to the 1989 edition of the American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code*, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components." This proposed relief modifies the qualification requirements of personnel who perform visual examinations to detect evidence of leakage from pressure retaining components during inservice inspections, that is, VT-2 examination personnel qualification. The alternative proposed by Braidwood Station utilizes ASME Code Case N-546, "Alternative Requirements for Qualification of VT-2 Examination Personnel Section XI, Division 1." The use of the alternative qualification requirements is being proposed under 10 CFR 50.55a(a)(3)(i).

During a teleconference with the licensee on December 19, 2000, the Nuclear Regulatory Commission (NRC) requested additional requirements to the proposed qualification program, including a provision to qualify VT-2 personnel by examination and to recertify personnel by examination every three years.

Subsequent to the date of the original amendment request, ComEd was merged into Exelon Generation Company, LLC (Exelon). By letter dated February 7, 2001, Exelon informed the NRC that it assumed responsibility for all pending NRC actions that were requested by ComEd.

On April 27, 2001, Exelon submitted a supplement to the original relief request, which revised the Inservice Inspection Program Relief Request I2-R35, to incorporate the additional provisions. The alternatives proposed in relief request I2R-35 are authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that it provides an acceptable level of quality and safety. Therefore, the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55(a)(3)(i) for the second 10-year interval or until such time Code Case N-546 is referenced in a future revision of Regulatory Guide (RG) 1.147. At that time, if the licensee intends to continue to implement Code Case N-546, the licensee should follow all provisions in the subject code case with the limitations (if any) listed in RG 1.147.

Mr. O. Kingsley

- 2 -

The bases for authorizing these reliefs are stated in the enclosed safety evaluation. This completes our review of the relief requests submitted in the aforementioned ComEd letters.

Sincerely,

***/GDick for/***

Anthony J. Mendiola, Chief, Section 2  
Project Directorate III  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-456 and STN 50-457

Enclosure: Safety Evaluation

cc w/encl: See next page

Mr. O. Kingsley

- 2 -

The bases for authorizing these reliefs are stated in the enclosed safety evaluation. This completes our review of the relief requests submitted in the aforementioned ComEd letters.

Sincerely,

**/RA/**

Anthony J. Mendiola, Chief, Section 2  
Project Directorate III  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-456 and STN 50-457

Enclosure: Safety Evaluation

cc w/encl: See next page

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- 2 -

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Units 1 and 2

88

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE SECOND 10-YEAR INTERVAL

INSERVICE INSPECTION PROGRAM PLAN

REQUEST FOR RELIEF I2R-35, REVISION 1

EXELON GENERATION COMPANY, LLC

BRAIDWOOD STATION, UNITS 1 AND 2

DOCKET NOS. STN 50-456 AND STN 50-457

1.0 INTRODUCTION

Inservice inspection of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components is to be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel (B&PV) Code and applicable addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if the licensee demonstrates that:

- (i) the proposed alternatives would provide an acceptable level of quality and safety or
- (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the pre-service examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection (ISI) of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first ten-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) twelve months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The Code of record for the Braidwood Station, Units 1 and 2 second 10-year ISI interval is the 1989 Edition of the ASME Boiler and Pressure Vessel Code.

2.0 EVALUATION

Subsequent to the date of the original amendment request, ComEd was merged into Exelon Generation Company, LLC (Exelon). By letter dated February 7, 2001, Exelon informed the NRC that it assumed responsibility for all pending NRC actions that were requested by ComEd.

The NRC staff has reviewed the information concerning inservice inspection (ISI) program Request for Relief No. I2R-35, Revision 1 for the second 10-year interval for Braidwood Station, Units 1 and 2 provided in Exelon Generation Company, LLC (the licensee) letters dated October 16, 2000, and April 27, 2001.

The information provided by the licensee in support of its request for relief from Code requirements has been evaluated and the basis for disposition is documented below.

2.1 Request for Relief No. I2R-35, Revision 1, IWA- 2300, Qualification of VT-2 Examination Personnel

Code Requirement: Section XI, IWA-2300, requires that personnel performing VT-2 visual examinations be qualified and certified using a written practice prepared in accordance with SNT-TC-1A and the additional requirements of this Division. Personnel performing nondestructive examinations not listed in SNT-TC-1A are to be qualified and certified to a comparable level of qualification as defined in SNT-TC-1A and the Employer's written practice.

Licensee's Proposed Alternative: In accordance with 10 CFR 50.55a(a)(3)(i), the licensee proposed the following alternative (as stated):

"Braidwood Station will use the provisions of Code Case N-546 as alternatives to the requirements of Section XI, IWA-2300 for qualifying VT-2 visual inspectors.

- VT-2 visual inspectors will have at least 40 hours plant walkdown experience, such as that gained by licensed and non-licensed operators, local leak rate personnel, system engineers, and inspection and nondestructive examination personnel,
- At least 4 hours of training on Section XI requirements and plant specific procedures for VT-2 visual examination, and
- Vision test requirements of IWA-2321, 1995 Edition of ASME Section XI.

Braidwood Station will add the following provisions to the qualification of VT-2 personnel.

- VT-2 personnel will be qualified by examination on Section XI requirements and plant specific procedures, and
- Personnel will be re-qualified by examination every three (3) years.

In addition, all VT-2 examinations are performed using a common VT-2 procedure ensuring consistent quality examinations, and all results are independently reviewed by a Braidwood Station Level III as well as the Authorized Nuclear Inservice Inspector."

Licensee's Basis for Proposed Alternative (as stated):

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

Section XI currently requires personnel conducting VT-2 examinations to be qualified and certified to comparable levels of qualification as defined in SNT-TC-1A and the Employer's written practice. However, unlike the nondestructive testing methods addressed within SNT-TC-1A, or VT-1 and VT-3 examination methods, VT-2 examination does not require any special knowledge of technical principals underlying its performance. It is only the straight forward examination for leakage. No special skills or technical training are required in order to observe water dripping from a component or bubbles forming on a joint wetted with leak detection solution. As such, VT-2 personnel should not be subject the same qualification and certification requirements that were established for nondestructive testing personnel. Code Case N-546 provides more applicable requirements for the qualification and certification of VT-2 inspection personnel.

Code Case N-546 requires that personnel performing VT-2 visual examinations have at least forty (40) hours of plant walkdown experience, receive a minimum of four (4) hours of training on Section XI requirements, and pass the vision test requirements of IWA-2321, 1995 Edition. This alternative to the existing Code requirements reduces the administrative burden of maintaining a Section XI qualification and certification program for VT-2 examiners and allows for the use of personnel most familiar with the walkdown of plant systems, such as licensed and non-licensed operators, local leak rate personnel, system engineers, and NDE personnel to perform VT-2 visual inspections. The quality of VT-2 visual examinations will be maintained by using the alternate qualification rules approved by ASME in Code Case N-546.

Code Case N-546 was approved by the ASME Boiler and Pressure Vessel Code Committee on August 24, 1995, but is not yet included in the most recent listing of NRC approved code cases provided in Revision 12 of Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability - ASME Section XI Division 1."

Evaluation:

The ASME Code, Section XI, IWA-2300, requires that personnel performing VT-2 visual examinations be qualified and certified using a written practice prepared in accordance with SNT-TC-1A and the additional requirements of this Division. The Code also requires that examination personnel be qualified for near and far distance vision acuity. Pursuant to 10 CFR 50.55a(a)(3)(i), the licensee proposed to use Code Case N-546 in lieu of the requirements of IWA-2300 for VT-2 visual examination personnel.

With regard to the selection of personnel to conduct the test, the Code Case states that licensed and non-licensed operators, local leak rate personnel, system engineers, and inspection and nondestructive examination personnel are eligible due to their plant experience. Those personnel typically have a sound working knowledge of plant components and piping layouts, making them acceptable candidates for performing VT-2 visual examinations. Furthermore, the licensee follows plant-specific procedures to obtain



consistent VT-2 visual examination results. The Code Case also requires a vision test for examination personnel to that of the 1995 Edition Code. However, in order for the NRC to consider the qualification requirements in Code Case N-546 to be comparable to those of the ASME Code, Section XI, Paragraph IWA-2300, for VT-2 visual examination personnel, it is necessary for VT-2 visual examination personnel to also demonstrate knowledge of Section XI, and plant specific procedures for VT-2 visual examinations, and to continued proficiency through qualification and periodic re-qualification in accordance with the frequency specified in IWA-2314 of the licensee's ISI ASME Code of record.

Since the licensee's proposed alternative is to use Code Case N-546 with the provision that VT-2 personnel will be qualified by examination on Section XI requirements and plant specific procedures, and such personnel will be re-qualified by examination every three years, the staff finds the licensee's proposed alternative to be acceptable.

### 3.0 CONCLUSION

For Request for Relief No. I2R-35, Revision 1, the staff concludes that the licensee's proposed alternative to use Code Case N-546 with the provision that VT-2 personnel will be qualified by examination on Section XI requirements and plant specific procedures, and such personnel will be re-qualified by examination every three years, provides an acceptable level of quality and safety. Therefore, the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the second 10-year interval or until such time Code Case N-546 is referenced in a future revision of Regulatory Guide (RG) 1.147. At that time, if the licensee intends to continue to implement Code Case N-546, the licensee should follow all provisions in the subject code case with the limitations (if any) listed in RG 1.147.

Principal Contributor: T. McLellan

Date: July 20, 2001