September 28, 2001

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

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3 - EXEMPTION FROM THE REQUIREMENTS OF 10 CFR 50.55a(g)(6)(ii)(A)(2), INSERVICE EXAMINATION OF THE REACTOR PRESSURE VESSEL (TAC NOS. MB2172 AND MB2173)

Dear Mr. Kingsley:

The Commission has approved the enclosed exemption from the specific requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 50.55a(g)(6)(ii)(A)(2), for the Dresden Nuclear Power Station, Units 2 and 3. This action is in response to your letter of June 12, 2001, as supplemented by letter dated July 23, 2001.

A copy of the exemption and the supporting safety evaluation are enclosed. The exemption has been forwarded to the Office of the Federal Register for publication.

Sincerely,

***/RA by Douglas V. Pickett For/***

Lawrence W. Rossbach, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-237 and 50-249

Enclosures: Exemption
Safety Evaluation

cc w/encls: See next page

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*See KWichman to AMendiola memorandum dated August 16, 2001

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UNITED STATES NUCLEAR REGULATORY COMMISSION

EXELON GENERATION COMPANY, LLC

DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3

DOCKET NOS. 50-237 AND 50-249

EXEMPTION

## 1.0 BACKGROUND

The Exelon Generation Company, LLC, (Exelon, or the licensee) is the holder of Facility Operating License Nos. DPR-19 and DPR-25, which authorizes operation of the Dresden Nuclear Power Station (DNPS), Units 2 and 3, respectively. The licenses provide, among other things, that the facilities are subject to all rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (NRC, the Commission) now or hereafter in effect.

The facility consists of two boiling water reactors located in Grundy County, Illinois.

## 2.0 REQUEST/ACTION

Title 10 of the Code of Federal Regulations (10 CFR) Part 50, section 50.55a(g)(6)(ii)(A)(2) incorporates American Society of Mechanical Engineers (ASME) Code, Section XI, Table IWB-2500-1. Item B1.12 of ASME code, Section XI, Table IWB-2500-1 requires that all longitudinal reactor pressure vessel (RPV) shell welds be inspected during each ten-year inspection interval. Additionally, item B1.30 requires that the shell-to-flange weld be inspected during each inspection interval.

In its submittal dated June 12, 2001, as supplemented by a letter dated July 23, 2001, the licensee requested an exemption from the ASME Code, Section XI requirements, items B1.12

and B1.30 of Table IWB-2500-1. The licensee requested a one cycle extension of the requirement to inspect the RPV welds for the Dresden Units 2 and 3 per the provisions of 10 CFR 50.55a(a)(3)(ii). Specifically, the licensee concluded that compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Until recently, the licensee intended to use standard inspection techniques on RPV welds during the upcoming (17$^{th}$) refueling outages for both units. The outages are scheduled for October 2001 and September 2002 for Units 2 and 3, respectively. Using standard equipment, the licensee projects that they would be able to inspect approximately 60 percent of the length of vertical welds.

In order to improve and increase their capability to perform RPV weld examinations, the licensee proposes to implement the AIRIS 21 system. The AIRIS 21 system is a nondestructive examination (NDE) tool developed by IHI Southwest Technologies (ISWT). The licensee proposes to have ISWT install the new system and inspect vertical welds along the lower beltline course as well as the shell-to-flange weld during the 17$^{th}$ refueling outage for both units. Coverage of the lower beltline course is not obtainable using standard inspection techniques. Using the AIRIS 21 system, the licensee anticipates examining 14 of the 18 vertical welds as well as the shell-to-flange weld during the upcoming 17th refueling outage for both units. Approximately 90 percent of the shell-to-flange weld is expected to be examined while 50 to 100 percent of the vertical welds are expected to be examined. The licensee expects to complete examinations for the remaining four vertical welds using the AIRIS 21 system in the 18$^{th}$ refueling outage for both units.

The AIRIS 21 device will require additional refueling bridge support. Therefore, in order to inspect all of the welds required by the ASME Code during the 17th refueling outages, outage time would be increased by 64 hours according to the licensee's estimates. The licensee concludes that this considerable extension in outage time presents undue hardship.

3.0 DISCUSSION

Pursuant to 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR Part 50, when (1) the exemptions are authorized by law, will not present an undue risk to public health or safety, and are consistent with the common defense and security; and (2) when special circumstances are present. According to 10 CFR 50.12(a)(2)(iii), special circumstances are present whenever compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted. The requested schedular exemption is required to prevent an extended shutdown of the facility for the purpose of conducting RPV inservice examinations. In addition, according to 10 CFR 50.12(a)(2)(v), special circumstances are also present whenever the exemption would provide only temporary relief from the applicable regulation. The requested exemption is only needed for eight months for Unit 2 and 24 months for Unit 3 to achieve increased inspection coverage without an outage schedule impact.

As described in the staff's safety evaluation dated September 28, 2001, the staff finds that the deferral of the examinations of RPV welds for one cycle will not present undue risk to the public and the AIRIS 21 system is expected to result in a more complete inspection during future outages. The safety evaluation may be examined, and/or copied for a fee, at the NRC's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the

ADAMS Public Library component on the NRC Web site, http://www.nrc.gov (the Electronic Reading Room).

4.0 CONCLUSION

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12(a), the exemption is authorized by law, will not endanger life or property or common defense and security, and is, otherwise, in the public interest. Also, special circumstances are present. Therefore, the Commission hereby grants Exelon an exemption from the requirements of 10 CFR 50.55a(g)(6)(ii)(A)(2) for Dresden Nuclear Power Station, Units 2 and 3.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will not have a significant effect on the quality of the human environment (66 FR 49713).

This exemption is effective upon issuance.

Dated at Rockville, Maryland, this 28th day of September 2001.

FOR THE NUCLEAR REGULATORY COMMISSION

***/RA/***

John A. Zwolinski, Director
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

ALTERNATIVE TO INSPECTION OF REACTOR PRESSURE VESSEL

LONGITUDINAL WELDS

EXELON GENERATION COMPANY, LLC

DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3

DOCKET NOS. 50-237 and 50-249

## 1.0 INTRODUCTION

By letter dated June 12, 2001, as supplemented by a letter dated July 23, 2001, Exelon Generation Company, LLC (Exelon or the licensee) requested an alternative to performing the augmented reactor pressure vessel (RPV) axial shell weld examination requirements of both the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 1995 Edition, and the augmented examination requirements of 10 CFR 50.55a(g)(6)(ii)(A)(2) for Dresden Nuclear Power Station (DNPS), Units 2 and 3. The alternative proposed by Exelon is to extend the RPV weld inspection interval by one cycle for DNPS, Units 2 and 3.

Section 50.55a(g)(6)(ii)(A)(2) to Title 10 of the Code of Federal Regulations (10 CFR) requires that licensees perform an expanded RPV shell weld examination as specified in the 1989 Edition of Section XI of the ASME Code, on an "expedited" basis. "Expedited," in this context, effectively meant during the inspection interval when the rule was approved or the first period of the next inspection interval. The final rule was published in the FEDERAL REGISTER on August 6, 1992 (57 FR 34666). Table IWB-2500-1 of the ASME Code gives the RPV in-service inspection requirements for welds. Items B1.12 and B1.30 of the aforementioned table require longitudinal (vertical) and shell-to-flange welds, respectively, to be inspected during each ten-year interval.

## 2.0 LICENSEE TECHNICAL JUSTIFICATION

In its letter dated June 12, 2001, the licensee stated that the basis for requesting an exemption is undue hardship without a compensating increase in the level of quality and safety pursuant to 10 CFR 50.55a(a)(3)(ii). Current examination techniques employed at Dresden result in approximately 60 percent coverage.

In the upcoming outage for Dresden Units 2 and 3, Exelon will install the IHI Southwest Technologies (ISWT) AIRIS 21 nondestructive examination (NDE) system. The AIRIS 21 system is a thin ultrasonic device that moves along the primary (inner) side of the RPV. The

licensee anticipates that the new system will significantly increase their coverage of all vertical welds.

During the 17th refueling outage for both units, Exelon proposes to have ISWT install the AIRIS 21 device and inspect the vertical welds in the lower beltline region as well as a portion of the shell-to-flange weld. If Exelon were to inspect all welds required by the regulations (including vertical welds in the upper beltline region) the outage time for each unit would need to be extended by 64 hours. All welds that are not examined during the 17th refueling outage, including the upper beltline vertical welds, would be inspected using the AIRIS 21 system in the 18th refueling outages for both units.

Using the AIRIS 21 system, the licensee anticipates examining 14 of the 18 vertical welds as well as the shell-to-flange weld during the upcoming 17th refueling outage for both units. Approximately 90 percent of the shell-to-flange weld is expected to be examined while 50 to 100 percent of the vertical welds are expected to be examined. The licensee expects to complete examinations for the remaining four vertical welds using the AIRIS 21 system in the 18th refueling outage for both units. Given that the new system will provide increased coverage, and no service induced shell weld flaws have been detected to date, the licensee requests a schedular exemption to defer, for one cycle, inspection of the welds that will not be inspected during cycle 17.

## 3.0 STAFF REVIEW OF LICENSEE TECHNICAL JUSTIFICATION

The staff determined that the AIRIS 21 system may provide a better inspection with increased shell weld coverage. The AIRIS 21 system is expected to be capable of examining the lower beltline course, which, to this point, has been inaccessible to conventional inspection. The staff also agrees that an increase of 64 hours during the upcoming refueling outage presents undue hardship without a compensating increase in the level of quality or safety.

The staff reviewed the information provided by the licensee regarding Dresden Units 2 and 3. The probability for failure of a vertical RPV weld is low (roughly 2.7E-7 over 40 effective full-power years). Therefore, the staff concludes that deferral of this inspection for one cycle for Dresden Units 2 and 3, in order to achieve increased inspection coverage, is acceptable.

## 4.0 CONCLUSIONS

Based upon its review, the staff determined that the deferral of RPV weld examinations for one cycle for Dresden Units 2 and 3 is acceptable. The staff concludes that the requirements of 10 CFR 50.55a(g)(6)(ii)(A)(2) present an undue hardship to the licensee without a compensating increase in the level of quality and safety. Therefore, the proposed alternative RPV weld examination schedule for Dresden Units 2 and 3 is authorized pursuant to 10 CFR 50.55a(a)(3)(ii).

Principal Contributor: C. E. Carpenter

Date: September 28, 2001