September 29, 2003

Mr. John L. Skolds, President
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3 - ISSUANCE OF AMENDMENT (TAC NOS. MB6999 AND MB7000)

Dear Mr. Skolds:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 202 to Facility Operating License No. DPR-19 and Amendment No. 194 to Facility Operating License No. DPR-25 for Dresden Nuclear Power Station, Units 2 and 3. The amendments are in response to your application dated December 20, 2002, as supplemented by a letter dated May 30, 2003.

The amendments approve changes to the Dresden Nuclear Power Station, Units 2 and 3, as described in the Updated Final Safety Analysis Report. The amendments modify the basis for compliance with the requirements of Appendix H to Title 10 of the *Code of Federal Regulations* Part 50 (10 CFR 50 Appendix H), "Reactor Vessel Material Surveillance Program Requirements," by approving implementation of the Boiling Water Reactor Vessel and Internals Project reactor pressure vessel integrated surveillance program.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

Maitri Banerjee, 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: 1. Amendment No. 202 to DPR-19
2. Amendment No. 194 to DPR-25
3. Safety Evaluation

cc w/encls: See next page

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The amendments approve changes to the Dresden Nuclear Power Station, Units 2 and 3, as described in the Updated Final Safety Analysis Report. The amendments modify the basis for compliance with the requirements of Appendix H to Title 10 of the *Code of Federal Regulations* Part 50 (10 CFR 50 Appendix H), "Reactor Vessel Material Surveillance Program Requirements," by approving implementation of the Boiling Water Reactor Vessel and Internals Project reactor pressure vessel integrated surveillance program.

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MRing, RIII			

ADAMS Accession No.: ML032320569 *see previous concurrence

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NAME	MBanerjee	THarris for PCoates	SCoffin*	LZaccari	AMendiola
DATE	09/11/03	09/12/03	08/25/03	09/15/03	09/24/03

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EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-237

DRESDEN NUCLEAR POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 202
License No. DPR-19

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by the Exelon Generation Company, LLC (the licensee) dated December 20, 2002, as supplemented by a letter dated May 30, 2003, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended to authorize revision of the Updated Final Safety Analysis Report (UFSAR) as set forth in the application for amendment by the licensee, dated December 20, 2002, and as supplemented by a letter dated May 30, 2003. The licensee shall update the UFSAR by modifying the basis for compliance with the requirements of Appendix H to Title 10 of the Code of Federal Regulations Part 50 (10 CFR 50 Appendix H), "Reactor Vessel Material Surveillance Program Requirements," to implement the Boiling Water Reactor Vessel and Internals Project reactor pressure vessel integrated surveillance program, as authorized by this amendment and in accordance with 10 CFR 50.71(e).

3. This license amendment is effective as of the date of its issuance and shall be implemented prior to the next scheduled reactor vessel surveillance capsule removal at Dresden Nuclear Power Station.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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

Date of Issuance: September 29, 2003

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-249

DRESDEN NUCLEAR POWER STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 194
License No. DPR-25

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by the Exelon Generation Company, LLC (the licensee) dated December 20, 2002, as supplemented by a letter dated May 30, 2003, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended to authorize revision of the Updated Final Safety Analysis Report (UFSAR) as set forth in the application for amendment by the licensee, dated December 20, 2002, and as supplemented by a letter dated May 30, 2003. The licensee shall update the UFSAR by modifying the basis for compliance with the requirements of Appendix H to Title 10 of the *Code of Federal Regulations* Part 50 (10 CFR 50 Appendix H), "Reactor Vessel Material Surveillance Program Requirements," to implement the Boiling Water Reactor Vessel and Internals Project reactor pressure vessel integrated surveillance program, as authorized by this amendment and in accordance with 10 CFR 50.71(e).

3. This license amendment is effective as of the date of its issuance and shall be implemented prior to the next scheduled reactor vessel surveillance capsule removal at Dresden Nuclear Power Station.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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

Date of Issuance: September 29, 2003

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 202 TO FACILITY OPERATING LICENSE NO. DPR-19

AND AMENDMENT NO. 194 TO FACILITY OPERATING LICENSE NO. DPR-25

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 December 20, 2002 (Ref. 1), Exelon Generation Company, LLC (Exelon), the licensee for Dresden Nuclear Power Station (DNPS), Units 2 and 3, submitted a request for Nuclear Regulatory Commission (NRC) review and approval of a license amendment to modify the basis for their compliance with the requirements of Appendix H to Title 10 of the *Code of Federal Regulations* Part 50 (10 CFR 50 Appendix H), "Reactor Vessel Material Surveillance Program Requirements." In their license amendment submittal, Exelon requested that they be approved to implement the Boiling Water Reactor Vessel and Internals Project (BWRVIP) reactor pressure vessel (RPV) integrated surveillance program (ISP) as the basis for demonstrating the compliance of DNPS, Units 2 and 3 with the requirements of 10 CFR 50 Appendix H. In response to questions of clarification raised by the NRC staff during a teleconference on April 3, 2003, Exelon submitted additional information by letter dated May 30, 2003 (Ref. 2), to support their original request.

The BWRVIP submitted, for NRC staff review and approval, the RPV ISP in topical reports BWRVIP-78, "BWR Vessel and Internals Project, BWR Integrated Surveillance Program Plan," and BWRVIP-86, "BWR Vessel and Internals Project, BWR Integrated Surveillance Program Implementation Plan" (Refs. 3 and 4). Additional information necessary to establish the technical basis for, and proposed implementation of, the BWRVIP ISP was provided in letters from the BWRVIP to the NRC dated December 15, 2000, and May 30, 2001 (Refs. 5 and 6). The NRC staff approved the proposed BWRVIP ISP in a safety evaluation (SE) which was provided to the BWRVIP by letter dated February 1, 2002 (Ref. 7). However, the NRC staff's SE required that plant-specific information be provided by BWR licensees who wish to implement the BWRVIP ISP for their facilities. Exelon's December 20, 2002, and May 30, 2003, submittals addressed the plant-specific information required in the NRC staff's February 1, 2002, BWRVIP ISP SE.

Exelon's supplemental letter dated May 30, 2003, contained clarifying information and did not change the initial no significant hazards consideration determination and did not expand the scope of the original *Federal Register* Notice.

2.0 REGULATORY EVALUATION

Nuclear power plant licensees are required by 10 CFR 50 Appendix H to implement RPV surveillance programs to "monitor changes in the fracture toughness properties of ferritic materials in the reactor vessel beltline region ... which result from exposure of these materials to neutron irradiation and the thermal environment." Two specific alternatives are provided with regard to the design of a facility's RPV surveillance program which may be used to address the requirements of 10 CFR 50 Appendix H.

The first alternative is the implementation of a plant-specific RPV surveillance program consistent with the requirements of American Society for Testing and Materials (ASTM) Standard Practice E 185, "Standard Practice for Conducting Surveillance Tests for Light-Water Cooled Nuclear Power Reactor Vessels." In the design of a plant-specific RPV surveillance program, a licensee may use the edition of ASTM Standard Practice E 185 which was current on the issue date of the American Society of Mechanical Engineers (ASME) Code to which the reactor vessel was purchased, or later editions through the 1982 edition.

The second alternative provided in 10 CFR 50 Appendix H is the implementation of an ISP. An ISP is defined in 10 CFR 50 Appendix H as occurring when, "the representative materials chosen for surveillance for a reactor are irradiated in one or more other reactors that have similar design and operating features." Five specific criteria are stated in Section III.C.1 of 10 CFR 50 Appendix H which must be met to support approval of an ISP:

a. The reactor in which the materials will be irradiated and the reactor for which the materials are being irradiated must have sufficiently similar design and operating features to permit accurate comparisons of the predicted amount of radiation damage.

b. Each reactor must have an adequate dosimetry program.

c. There must be adequate arrangement for data sharing between plants.

d. There must be a contingency plan to assure that the surveillance program for each reactor will not be jeopardized by operation at reduced power level or by an extended outage of another reactor from which data are expected.

e. There must be substantial advantages to be gained, such as reduced power outages or reduced personnel exposure to radiation, as a direct result of not requiring surveillance capsules in all reactors in the set.

As noted in Section 1.0 of this SE, the NRC staff approved the proposed BWRVIP ISP in a SE which was issued to the BWRVIP by letter dated February 1, 2002 (Ref. 7). All of the criteria cited above for approval of the ISP were addressed either completely or partially in Ref 7. For those criteria which could not be fully addressed in Ref. 7, plant-specific information would be required from licensees who wished to implement the BWRVIP for their facilities. As stated in Ref. 7:

> [L]icensees who wish to participate in the BWR ISP must provide, for NRC staff review and approval, information which defines how they will determine RPV

> and/or surveillance capsule fluences based on the dosimetry data which will be available for their facilities. This information must be submitted concurrently with each licensee's submittal to replace their existing plant-specific surveillance program with the BWR ISP as part of their facility's licensing basis. The information submitted must be sufficient for the staff to determine that:
>
> (1) RPV and surveillance capsule fluences will be established as based on the use of an NRC-approved fluence methodology that will provide acceptable results based on the available dosimetry data,
>
> (2) if one methodology is used to determine the neutron fluence values for a licensee's RPV and one or more different methodologies are used to establish the neutron fluence values for the ISP surveillance capsules which "represent" that RPV in the ISP, the results of these differing methodologies are compatible (i.e., within acceptable levels of uncertainty for each calculation).

This plant-specific information was required by the NRC staff to ensure that criterion III.C.1.b of 10 CFR 50 Appendix H for an ISP could be met by each facility, and to confirm that data which would be shared as part of the BWRVIP ISP could be effectively utilized by each licensee for the monitoring of RPV embrittlement for their facility.

3.0 TECHNICAL EVALUATION

In their letters dated December 20, 2002, and May 30, 2003, Exelon submitted information for DNPS, Units 2 and 3, which addressed the information requested in the NRC staff's February 1, 2002, BWRVIP ISP SE (Ref. 7). Exelon submitted a revised Section 5.3.1.4.8 of the DNPS, Units 2 and 3, UFSAR by Ref. 2, which stated:

> Regulatory Guide (RG) 1.190 provides state of the art calculation and measurement procedures that are acceptable to the NRC for determining Reactor Pressure Vessel (RPV) neutron fluence. RPV fluence has been evaluated using a method in accordance with the recommendations of RG 1.190. Future evaluations of RPV fluence will be completed using a method in accordance with the recommendations of RG 1.190 [...].

The NRC staff has concluded that the inclusion of this statement in the DNPS, Units 2 and 3, UFSAR is sufficient to address both items (1) and (2) from Ref. 7. Regarding item (1), the licensee's use of a methodology for determining the DNPS, Units 2 and 3, RPV neutron fluence values which are consistent with the attributes of RG 1.190 and has been approved by the NRC staff will provide acceptable results based upon the available dosimetry data. Regarding item (2), RPV surveillance capsules tested under the BWRVIP ISP will have their fluences determined by the use of a methodology which is consistent with the attributes of RG 1.190 and has been approved by the NRC staff. The NRC staff has concluded that any two (or more) different fluence methodologies will provide "compatible" (as defined in Ref. 7) results provided that the best estimate fluence values are within each other's uncertainty bounds.

Exelon provided a revised Section 5.3.1.6 of the DNPS, Units 2 and 3, UFSAR by Reference 2 which documented the licensee's incorporation of the BWRVIP ISP into the DNPS, Units 2 and 3, licensing basis:

> In 2003, the NRC approved Dresden's participation in the BWR Vessel and Internals Project (BWRVIP) Integrated Surveillance Program (ISP) as described in BWRVIP-78 and BWRVIP-86 [...BWRVIP-86-A: "BWR Vessel and Internals Project, Updated BWR Integrated Surveillance Program (ISP)," Final Report, October 2002]. The NRC approved the ISP for the industry [...] and approved Dresden's participation [...]. The ISP meets the requirements of 10 CFR 50 Appendix H and provides several advantages over the original program [...]. The current withdrawal schedule for both units is based on the NRC-approved revision of BWRVIP-86 [...].

In addition, Exelon provided the withdrawal schedule for DNPS, Units 2 and 3, in Table 5.3-1 of the DNPS UFSAR. The NRC staff noted that for DNPS, Unit 3, 245^{o} location surveillance capsule will be removed in 2016 in lieu of the 215^{o} location surveillance capsule specified by BWRVIP-86-A. The 215^{o} location surveillance capsule was previously removed in 1981. In response to NRC staff questions raised during a teleconference on April 3, 2003, Exelon's letter dated May 30, 2003, stated that the fluence at the 245^{o} location will be approximately the same as the fluence at the 215^{o} location. Because of this, the NRC staff finds the use of the 245^{o} location surveillance capsule is technically equivalent to the BWRVIP-86 requirements and will follow up with the BWRVIP to incorporate this change in the next revision of BWRVIP-86. The NRC staff has concluded that the information provided in the revised DNPS, Units 2 and 3, UFSAR is adequate to document the licensee's intent to appropriately implement the BWRVIP ISP as the method for demonstrating the compliance of DNPS, Units 2 and 3, with the requirements of 10 CFR 50 Appendix H.

The NRC staff has concluded that the information provided by Exelon was sufficient to conclude that the BWRVIP ISP, as approved in Ref. 7, can be implemented for DNPS, Units 2 and 3, as the basis for demonstrating the facility's continued compliance with the requirements of 10 CFR 50 Appendix H. As part of the implementation and documentation of the licensee's intent to utilize the BWRVIP ISP for this purpose, the licensee shall modify the DNPS, Units 2 and 3, UFSAR as noted above and as stated in their December 20, 2002, and May 30, 2003, submittals.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes an inspection or a surveillance requirement. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (68 FR 5669). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public. Therefore, the licensee's proposed changes are acceptable.

7.0 REFERENCES

1. M. P. Gallagher (Exelon and AmerGen) to U.S. NRC Document Control Desk, "Request for License Amendment Regarding Reactor Vessel Specimen Removal Schedule," December 20, 2002.

2. K. R. Jury (Exelon and AmerGen) to U.S. NRC Document Control Desk, "Additional Information Supporting the Request for License Amendment Regarding Reactor Vessel Specimen Removal Schedule," May 30, 2003.

3. C. Terry (BWRVIP) to U.S. NRC Document Control Desk, "Project No. 704 - BWR Vessel and Internals Project, BWR Integrated Surveillance Program Plan (BWRVIP-78)," December 22, 1999.

4. C. Terry (BWRVIP) to U.S. NRC Document Control Desk, "Project No. 704 - BWRVIP-86: BWR Vessel and Internals Project, BWR Integrated Surveillance Program Implementation Plan," EPRI Technical Report 1000888, December 22, 2000.

5. C. Terry (BWRVIP) to U.S. NRC Document Control Desk, "PROJECT NO. 704 - BWRVIP Response to NRC Request for Additional Information Regarding BWRVIP-78," December 15, 2000.

6. C. Terry (BWRVIP) to U.S. NRC Document Control Desk, "PROJECT NO. 704 - BWRVIP Response to Second NRC Request for Additional Information on the BWR Integrated Surveillance Program," May 30, 2001.

7. W. H. Bateman (USNRC) to C. Terry, "Safety Evaluation Regarding EPRI Proprietary Reports 'BWR Vessel and Internals Project, BWR Integrated Surveillance Program Plan (BWRVIP-78)' and 'BWRVIP-86: BWR Vessel and Internals Project, BWR Integrated Surveillance Program Implementation Plan'," February 1, 2002.

Principal Contributor: J. Honcharik, EMCB/DE

Date: September 29, 2003

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