PROPRIETARY INFORMATION
November 26, 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 AMENDMENTS REGARDING PRESSURE AND TEMPERATURE LIMITS (TAC NOS. MB7850 AND MB7851)

Dear Mr. Skolds:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 205 to Facility Operating License No. DPR-19 and Amendment No. 197 to Facility Operating License No. DPR-25 for Dresden Nuclear Power Station (DNPS), Units 2 and 3. The amendments are in response to your application dated February 27, 2003, as supplemented on July 17, July 31, September 11, and November 25, 2003. The supplements provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on August 5, 2003 (68 FR 46242).

The amendments would revise Technical Specification (TS) Section 3.4.9, "Reactor Coolant System Pressure and Temperature (P/T) Limits," incorporating revisions to the P/T limit curves. The proposed change also deletes the license conditions specified in DNPS Unit 2 Facility Operating License Section 2.C(8) and DNPS Unit 3 Facility Operating License Section 3.P, "Pressure-Temperature Limit Curves." These conditions were put in place to limit the curves' applicability while an updated fluence evaluation was undertaken. The updated fluence evaluation has now been completed and license conditions are no longer necessary.

The February 27, 2003, submittal contains P/T limits for 32 effective full power years (EFPY) and 54 EFPY. In addition, the submittal also contains equivalent margins analyses (EMA) for 32 EFPY and 54 EFPY with power uprated conditions. The attached safety evaluation confirms the acceptability of the proposed TS amendment for 32 EFPY and the deletion of the license conditions specified in DNPS Unit 2 Facility Operating License Section 2.C(8) and DNPS Unit 3 Facility Operating License Section 3.P, "Pressure-Temperature Limit Curves." The 54 EFPY P/T limit curves were submitted to address DNPS Units 2 and 3 license renewal application which is currently under NRC review. In its November 25, 2003 letter, the licensee withdrew the proposed 54 EFPY curves from the scope of the subject amendment request as these curves would not have become effective prior to the expiration of the current operating license for DNPS Units 2 and 3.

Document transmitted herewith contains sensitive unclassified information. When separated from Enclosure 3, this document is decontrolled.

A copy of the Safety Evaluation is also enclosed. The safety evaluation contains proprietary information that has been identified in bold for proper handling. The Notice of Issuance will be included in the Commission's 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. 205 to DPR-19
2. Amendment No. 197 to DPR-25
3. Safety Evaluation (Proprietary)
4. Safety Evaluation (Non-proprietary)

cc w/encls 1, 2, and 4: See next page

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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. 205
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 February 27, 2003, as supplemented by additional information submitted on July 17, July 31, September 11, and November 25, 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;

   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 by deletion of license condition in Section 2.C.8 of Facility Operating License No. DPR-19, and by changes to the Technical Specifications as indicated in the attachment to this license amendment. Paragraph 2.C.(2) of Facility Operating License No. DPR-19 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 205, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the technical specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA by LRaghavan for/

Douglas Pickett, Acting Chief, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to Technical Specifications

Date of Issuance: November 26, 2003

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-249

DRESDEN NUCLEAR POWER STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 197
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 February 27, 2003, as supplemented by additional information submitted on July 17, July 31, September 11, and November 25, 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;

   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 by deletion of license condition in Section 3.P of Facility Operating License No. DPR-25, and by changes to the Technical Specifications as indicated in the attachment to this license amendment. Paragraph 3.B of Facility Operating License No. DPR-25 is hereby amended to read as follows:

   B. Technical Specifications

      The Technical Specifications contained in Appendix A, as revised through Amendment No. 197 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the technical specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA by LRaghavan for/

Douglas Pickett, Acting Chief, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to Technical Specifications

Date of Issuance: November 26, 2003

ATTACHMENT TO LICENSE AMENDMENT NOS. 205 AND 197

FACILITY OPERATING LICENSE NOS. DPR-19 AND DPR-25

DOCKET NOS. 50-237 AND 50-249

Replace the following page of the Facility Operating License No. DPR-19 with the attached page. The revised page is identified by amendment number and contains a line in the margin indicating the area of change.

Remove Page	Insert Page
3a	3a

Replace the following page of the Facility Operating License No. DPR-25 with the attached page. The revised page is identified by amendment number and contains a line in the margin indicating the area of change.

Remove Page	Insert Page
5	5

Replace the following pages of the Appendix "A" Technical Specification with the attached pages. The revised pages are identified by amendment number and contains lines in the margin indicating the area of change.

Remove Pages	Insert Pages
3.4.9-6	3.4.9-6
3.4.9-7	3.4.9-7
3.4.9-8	3.4.9-8
B3.4.9-9	B3.4.9-9

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 205 TO FACILITY OPERATING LICENSE NO. DPR-19

AND AMENDMENT NO. 197 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 February 27, 2003 (Reference 1) Exelon Generating Company, LLC (Exelon, the licensee) submitted an application for amendment to the Dresden Nuclear Power Station (DNPS), Units 2 and 3 Technical Specifications (TS) Section 3.4.9, "Reactor Coolant System Pressure and Temperature (P/T) Limits." Specifically, the proposed changes will allow Exelon to revise the P/T limit curves and delete the license conditions specified in DNPS Unit 2 Facility Operating License Section 2.C(8) and DNPS Unit 3 Facility Operating License Section 3.P, "Pressure-Temperature Limit Curves." These conditions were put in place to limit the curves' applicability while an updated fluence evaluation was undertaken. The updated fluence evaluation has now been completed. In response to requests for additional information Exelon submitted supplemental information by letters dated July 17, July 31, September 11, and November 25, 2003 (References 2, 3, 4, and 5). The supplements provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on August 5, 2003 (68 FR 46242).

The current TS vessel P/T limits for Dresden Units 2 and 3 are valid through December 31, 2003, and November 30, 2004, respectively. The licensee submitted P/T limits for 32 effective full power years (EFPY) and 54 EFPY. In addition, the submittal also contains equivalent margins analyses (EMA) for 32 EFPY and 54 EFPY with extended power uprated conditions. The attached safety evaluation confirms the acceptability of the proposed TS amendment for 32 EFPY and the deletion of the license conditions specified in DNPS Unit 2 Facility Operating License Section 2.C(8) and DNPS Unit 3 Facility Operating License Section 3.P, "Pressure-Temperature Limit Curves." As the proposed 54 EFPY curves would not have become effective prior to the expiration date of the current operating license for DNPS Units 2 and 3, in their November 25, 2003 letter, the licensee withdrew the 54 EFPY P/T limit curves. These curves were originally submitted to address the license renewal application which is currently under

NRC review. The safety evaluation contains proprietary information that has been identified in bold for proper handling.

2.0 REGULATORY EVALUATION

The regulatory requirements for pressure vessel fluence calculations are specified in General Design Criteria (GDCs) 30 and 31. In March 2001 the staff issued Regulatory Guide (RG) 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," March 2001. The staff has approved vessel fluence calculation methodologies which satisfy the requirements of GDC 30 and 31 and adhere to the guidance in RG 1.190. Fluence calculations are acceptable if they are done with approved methodologies or with methods which are shown to conform to the guidance in RG 1.190. Calculation of the fluence values was based on the GE staff approved methodology which adheres to the guidance in RG 1.190.

The U.S. Nuclear Regulatory Commission (NRC) has established requirements in Appendix G of Part 50 to Title 10 of the *Code of Federal Regulations* (10 CFR Part 50, Appendix G), to protect the integrity of the reactor coolant pressure boundary in nuclear power plants. 10 CFR 50.60 specifies the acceptance criteria for fracture prevention measures for light water nuclear power reactors for normal operation. It requires that the fracture toughness and material surveillance program requirements of Appendix G must be met unless an exemption is granted by the Commission. 10 CFR Part 50, Appendix G requires the P/T limits for an operating plant to be at least as conservative as those that would be generated if the methods of Appendix G to Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (Appendix G to the ASME Code) were applied. The methodology of Appendix G to the ASME Code postulates the existence of a sharp surface flaw in the RPV that is normal to the direction of the maximum applied stress. For materials in the beltline, upper and lower head regions of the RPV, the maximum flaw size is postulated to have a depth that is equal to one-fourth of the thickness and a length equal to 1.5 times the thickness. For the case of evaluating RPV nozzles, the surface flaw is postulated to propagate parallel to the axis of the nozzle's corner radius. The basic parameter in Appendix G to the ASME Code for calculating P/T limit curves is the stress intensity factor, K_I, which is a function of the stress state and flaw configuration. The methodology requires that licensees determine the reference stress intensity (K_{Ia}) factors. K_{Ia} is determined from Figure G-2210-1 in Appendix G to the ASME Code. K_{Ia} values vary as a function of temperature, from the reactor coolant system (RCS) operating temperatures, and from the adjusted reference temperatures (ARTs) for the limiting materials in the RPV. Thus, the critical locations in the RPV beltline and head regions are the 1/4-thickness (1/4T) and 3/4-thickness (3/4T) locations, which correspond to the points of the crack tips if the flaws are initiated and grown from the inside and outside surfaces of the vessel, respectively. Regulatory Guide 1.99, "Radiation Embrittlement of Reactor Vessel Material," Revision 2, dated June 1988, provides an acceptable method of calculating ART values of materials in the beltline region of the RPV, where the effects of neutron irradiation may induce an increased level of embrittlement in the materials.

The methodology of Appendix G requires that P/T curves must satisfy a safety factor of 2.0 on stress intensities arising from primary membrane and bending stresses during normal plant

operations (including heatups, cooldowns, and transient operating conditions), and a safety factor of 1.5 on stress intensities arising from primary membrane and bending stresses when leak rate or hydrostatic pressure tests are performed on the RCS. Table 1 to 10 CFR Part 50, Appendix G, provides the NRC staff's criteria for meeting the P/T limit requirements of Appendix G to the ASME Code and the minimum temperature requirements of the rule for bolting up the vessel during normal and pressure testing operations. Table 1 of 10 CFR Part 50, Appendix G also identifies P/T limits based on the reference temperature (RT_{NDT}) of the materials in the closure flange region that is highly stressed by the bolt preload.

On August 25, 2000, pursuant to 10 CFR 50.12, the NRC granted an exemption to allow the licensee to deviate from the requirements of 10 CFR Part 50, Appendix G, and to use Code Cases N-588 and N-640 as the part of the bases for generating the DNPS Units 2 and 3 P/T limit curves. The NRC staff's evaluation of the proposed P/T limit curves is, in part, based on this exemption. Code Case N-588 allows: (a) the use of the membrane stress intensity factor, M_m in accordance with paragraph G-2214.1 in Appendix G of the ASME Code for a postulated flaw, and (b) the use of circumferentially oriented flaws in circumferential welds. Code Case N-640 allows the use of K_{IC} of Figure A-4200-1 of Appendix A of the ASME Code in lieu of K_{Ia} to determine P/T limits.

The staff finds that the licensee in Attachment 4 of its submittal (Reference 1) identified the applicable regulatory requirements. The regulatory requirements for which the staff based its acceptance are 10 CFR Part 50, Appendix G and Code Cases N-588 and N-640.

3.0 TECHNICAL EVALUATION

The calculation of the fluence values was carried out for both the pre-EPU and post-EPU power levels. Post-EPU operation is assumed to include the 97.5 percent load factor. The pre-EPU load factor was assumed at 80.0 percent but the actual value was smaller. The 32 EFPY peak fluence was estimated by adding the corresponding segments. However, the pre- and post-EPU radial and axial peak locations are different. Therefore, adding the peak values is conservative. The peak fluence value at the elevation of circumferential welds can then be estimated using the axial fluence distribution. The peak vessel fluence in both DNPS Units 2 and 3 was calculated using a staff approved methodology and conservative assumptions, and therefore, the staff finds it acceptable.

For the DNPS Units 2 and 3, the licensee provided the P/T limit curves for non-nuclear inservice leak and hydrostatic testing; for non-nuclear heatup/cooldown; and critical operation conditions effective to 32 EFPY and 54 EFPY. For non-nuclear inservice leak and hydrostatic testing and for non-nuclear heatup/cooldown conditions, the proposed limits contain curves for the bottom head and a composite curve for the upper vessel and the beltline. For critical operations conditions the proposed limit is a single curve for the beltline, upper and lower vessel. The basis for the proposed curves are documented in Attachment 4 to the licensee's February 27, 2003, letter (Reference 1). This attachment contains two General Electric (GE) Nuclear Energy (NE) reports: GE-NE-0000-0002-9629-01, Revision 0, February 2003, and GE-NE-000-0002-9600-01, Revision 0, February 2003. These reports are applicable for DNPS

Units 2 and 3, respectively. The staff performed technical evaluation only for the 32 EFPY curves as these curves are applicable for the condition of the RPV at end of the current license. The 54 EFPY curves are applicable for license renewal conditions. However, license renewal application is currently under staff review and is not yet approved by the NRC. Hence 54 EFPY curves are not addressed in this safety evaluation. In their November 25, 2003 letter, the licensee withdrew the 54 EFPY P/T limit curves which were originally submitted to address the DNPS Units 2 and 3 license renewal. The EMA for 54 EFPY will be evaluated in a separate staff safety evaluation.

The licensee has proposed to implement the P/T limit curves based upon limiting RT_{NDT} for the low alloy steel components in the reactor vessel. The RT_{NDT} is defined in ASME Code Section III, Subsection NB-2300 and was initially contained in the Summer 1972 Addenda. Section III.A. of 10 CFR Part 50, Appendix G permits licensees with RPVs constructed to an ASME Code earlier than the Summer 1972 Addenda of the 1971 Edition to determine the RT_{NDT} differently than that specified in the ASME Code provided the method is approved by the Director, Office of Nuclear Reactor Regulation (NRR). The DNPS RPVs were procured to earlier ASME Code requirements. Therefore, the material test data is not in accordance with the Summer 1972 Addenda. In 1994, the BWR Owner's Group (Reference 6) proposed a method of estimating the initial RT_{NDT} that was approved by the staff for generic use in Reference 7. The staff has reviewed the data provided by the licensee and concludes that the values of RT_{NDT} are consistent with the methodology contained in Reference 6. Since the methodology has been approved by NRR staff, the RT_{NDT} values meet 10 CFR Part 50, Appendix G.

Bottom Head Curves

Bottom head curves are developed because the water in the vessel lower head is separated from the water in contact with the vessel beltline and upper head regions by the reactor baffle plates. The water in the regions above the baffle plate is heated by decay heat from the reactor core, while the water in the lower head is cooled due to the injection of control rod drive water for vessel pressurization. With little or no circulation through the recirculation pump loops, these regions are therefore maintained at different temperatures during non-nuclear inservice leak and hydrostatic testing and non-nuclear heatup/cooldown conditions.

The applied stress intensity factors, K_i, for the bottom head curves were determined using the primary and secondary stresses from a **[ ]** Control Rod Drive (CRD)/bottom head finite element analysis that was performed by a BWR reactor vessel vendor in the early 1970's and a membrane stress intensity factor, $M_{m,}$ based on Code Case N-588. In the September 11, 2003, letter from the licensee (Reference 4), the licensee identified the computer codes used in the finite element analysis and the inputs and assumptions used in the stress analysis. The stress analysis used commonly accepted practices and their applications are consistent with analyses performed to demonstrate conformance with ASME Code Section III.

The pressures and temperatures for the bottom head curves were determined using: (a) the K_i described above, (b) the material fracture toughness described in Code Case N-640, and (c) an adjustment to the RT_{NDT} value for the limiting low alloy steel component in the lower head to account for fact that the limiting material was not the CRD discontinuity. **[**

]

To determine whether the analysis and assumptions used in the CRD/bottom head finite element analysis was applicable for Dresden bottom heads, General Electric, the vendor that developed the P/T limit curves, performed additional **[** **]** CRD/bottom head finite element analysis. This finite element analysis determined that the earlier analysis was non-conservative for the assumptions used in the analysis. **[**

] However, using Dresden specific material properties for the recirculation outlet nozzles , Dresden specific head dimensions and the thermal transient and pressure stresses from the revised CRD/bottom head finite element analysis, the licensee demonstrated that the proposed curves would meet the safety factors of Appendix G of Section XI of the ASME Code with membrane stress intensity factor calculated using the M_m in Code Case N-588 and with material fracture toughness calculated in accordance with ASME Code Case N-640. The NRC in a letter dated August 25, 2000, to O. D. Kingsley (Reference 8), approved an exemption for DNPS from 10 CFR 50.60(a) and 10 CFR Part 50, Appendix G to utilize Code Cases N-588 and N-640 to calculate P/T limit curves. Since the proposed bottom head curves meet the safety margins of 10 CFR Part 50, Appendix G as supplemented by Code Cases N-588 and N-640, the curves are acceptable. The results of the revised CRD/bottom head finite element analysis and the analysis using Dresden specific bottom head dimensions and material properties is discussed in the September 11, 2003, letter from the licensee.

Upper Vessel, Flange and Beltline Region Curves

The P/T limits for non-nuclear inservice leak and hydrostatic testing, non-nuclear heatup/cooldown operations include a curve based on the material properties for the upper

vessel (including feedwater nozzle), vessel flange and vessel beltline regions. The P/T limits for critical operations include a curve based on the material properties for the bottom head, upper vessel, vessel flange and vessel beltline regions. Since the bottom head curves are less limiting than the upper vessel, vessel flange and beltline region curves, the bottom head curves are not utilized for developing the critical operations curve. Using the highest RT_{NDT} for the materials in the beltline, upper vessel, and closure flange regions, the licensee developed P/T limits to meet the criteria in 10 CFR Part 50, Appendix G and Appendix G of Section XI of the ASME Code.

The K_I for the feedwater nozzle during pressure test was computed using the methods from Weld Research Council (WRC) Bulletin 175 together with the geometry from a generic 251-inch BWR/6 feedwater nozzle. The upper vessel region P/T limits are based on analysis of the feedwater nozzle because the licensee determined that the limiting location for the upper vessel was the feedwater nozzle and the generic analysis was applicable to the Dresden feedwater nozzle. This methodology was previously evaluated by the staff in a March 23, 2001, letter to Exelon Generation Company (Reference 9). Since Appendix G of the ASME Code indicates that the methods from WRC 175 provide approximate methods for analyzing the inside corner of a nozzle and cylindrical shell for elastic stresses due to internal pressure stress, the method of analysis proposed by the licensee for the upper vessel and feedwater nozzle will satisfy 10 CFR Part 50, Appendix G. **[**

]

The applied stress intensity factors, K_i, for the upper vessel curve during normal operation were determined using the primary and secondary stresses from a **[ ]** feedwater nozzle finite element analysis that was performed by a BWR reactor vessel vendor in the early 1970's and a membrane stress intensity factor, M_m, based on Code Case N-588. The pressures and temperatures for the upper vessel curve were determined using: (a) the K_i described above, (b) the material fracture toughness described in Code Case N-640, (c) the methods in Appendix 5 of WRC Bulletin 175, and (d) the limiting feedwater transient for normal and upset conditions.

The beltline region P/T limits are based on the ART for the limiting materials in the beltline of the DNPS RPVs. The limiting materials in the DNPS RPVs are the electroslag welds in the lower intermediate shell course. The ART at the 1/4T location is 86°F at 32 EFPY. The ART values for each beltline material are calculated based on the neutron flux for pre-extended power uprate (EPU) conditions and post EPU conditions. The neutron fluxes for the RPVs are calculated using a method consistent with RG 1.190. The method used to calculate the neutron flux were in accordance with GE Licensing Topical report NEDC-32983P, which was approved by the NRC staff in Reference 10.

The P/T limits apply for both heatup/cooldown and for both 1/4T and 3/4T locations because the maximum tensile stress for either heatup or cooldown is applied at the 1/4T location. For the beltline curves this approach has added conservatism because irradiation effects causes the allowable K_{IC} at 1/4T to be less than at the 3/4T for a given temperature. As a result, the 1/4T location is limiting at all temperatures. The staff's assessment also included an independent calculation of the ART value for the 1/4T location of the DMPS RPVs beltline regions based on the neutron fluence specified in the submittal for 32 EFPY. For the evaluation of the limiting beltline materials, the staff confirmed that the ARTs and P/T limit curves were based on the methodology of RG 1.99, Revision 2. The staff has also confirmed that the P/T limits for the beltline at 32 EFPY are less conservative that the P/T limits for the feedwater nozzle. Since the licensee's P/T limits in technical specification Figures 3.4.9-1, 3.4.9-2 and 3.4.9-3 combine the limits for the beltline and upper vessel into a single curve and the beltline limits are less conservative than the upper vessel limits, the upper vessel limits are the applicable curves.

Table 1 in 10 CFR Part 50, Appendix G, establishes additional P/T limits for the closure flange region that is dependent upon the RT_{NDT} for the limiting closure flange material. For Dresden closure flange region the limiting RT_{NDT} is 23°F. The staff has confirmed that the proposed P/T limits satisfy the closure flange limits of 10 CFR Part 50, Appendix G for an RT_{NDT} of 23°F.

Deletion of License Conditions

License conditions specified in DNPS Unit 2 Facility Operating License Section 2.C(8) and DNPS Unit 3 Facility Operating License Section 3.P, "Pressure-Temperature Limit Curves," stipulated that the P/T Limit curves in TS Section 3.4.9 were approved for use until December 31, 2003, for DNPS Unit 2 and until November 30, 2004, for DNPS Unit 3. Due to concerns with the dosimetry measurements and fluence calculations for the later years of the projection, these conditions were put in place to limit the curves applicability while an updated fluence evaluation was undertaken. EGC proposed to remove the license conditions because the updated fluence evaluation has now been completed and license conditions are no longer necessary.

4.0 STAFF EVALUATION

EGC proposed to implement technical specification changes to extend the PT curves for both Dresden units to 32 EFPYs. The proposed implementation accounts for a 17 percent power uprate and an increase of the load factor from 80 percent to 97.5 percent. This review examined the acceptability of the vessel fluence methodology and the staff concluded that the fluence values were derived using methods which follow the guidance in RG 1.190, and therefore, are acceptable.

Based on the NRC staff's review and evaluation of Dresden proposed P/T limit curves for Units 2 and 3, the staff has determined that the proposed P/T limit curves are consistent with the alternate assessment criteria and methods of ASME Code Cases N-588 and N-640, and satisfy (1) the requirements of 10 CFR 50.60(a), "Acceptance Criteria for Fracture Prevention

Measures for Lightwater Nuclear Power Reactors for Normal Operation," (2) Appendix G to 10 CFR Part 50, "Fracture Toughness Requirements," and (3) Appendix G to Section XI of the ASME Code, as exempted by the methods of analyses in the Code Cases. On the basis of the above regulatory and technical evaluations of the licensee's justifications, the staff concludes that the licensee's proposed TS changes and removal of the license conditions are acceptable.

5.0 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.

6.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve 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 amendments involve no significant hazards consideration, and there has been no public comment on such finding (68 FR 46242). Accordingly, the amendments meet 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 amendments.

7.0 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.

8.0 REFERENCES

1. Letter from P. R. Simpson, Exelon Generating Company LLC to US Nuclear Regulatory Commission, "Request for Changes Related to Technical Specification Section 3.4.9, "Reactor Coolant Pressure and Temperature (P/T) Limits," dated February 27, 2003.

2. Letter from P. R. Simpson, Exelon Generating Company LLC to US Nuclear Regulatory Commission, "Additional Information Regarding Request for License Amendment for Pressure-Temperature Limits," dated July 17, 2003.

3. Letter from K.R. Jury, Exelon Generating Company LLC to US Nuclear Regulatory Commission "Additional Information Regarding Request for Licensing Amendment for Pressure Temperature Limits" dated July 31, 2003.

4. Letter from P. Simpson, Exelon Generating Company LLC to US Nuclear Regulatory Commission, "Additional Information Regarding Request for License Amendment for Pressure-Temperature Limits," dated September 11, 2003.

5. Letter from P. R. Simpson, Exelon Generating Company LLC to US Nuclear Regulatory Commission, "Additional Information Regarding Request for License Amendment for Pressure-Temperature Limits," dated November 25, 2003.

6. GE Nuclear Energy, NEDC-32399-P, "Basis for GE RT_{NDT} Estimation Method," Report for BWR Owner's Group, San Jose, California, September 1994 (GE Proprietary)

7. Letter from B. Sheron, USNRC, to R. A. Pinelli, "Safety Assessment of Report NEDC-32399-P, Basis for GE RT_{NDT} Estimation Method, USNRC, December 16, 1994

8. Letter from L. W. Rossbach, USNRC to O. D. Kingsley, Commonwealth Edison Company, "Dresden-Exemption from the Requirement of 10 CFR Part 50, Section 50.60(a) and Appendix G," dated August 25, 2000.

9. Letter from C. Gratton, USNRC to J. A. Hutton, Exelon Generation Company, "Limerick Generating Station, Unit 2 - Closure of Amendment RE: Update the Pressure-Temperature Limit Curve for Limerick Generation Station (TAC MB 0590)," dated March 23, 2001.

10. Letter from S. A. Richard, USNRC, to J. F. Klapproth, GE-NE, "Safety Evaluation for NEDC-32983P, General Electric Methodology for Reactor Pressure Vessel Fast Neutron Flux Evaluation (TAC No. MA9891)," MFN 01-050, September 14, 2001

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