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10 CFR 50.4(b)(6)
10 CFR 50.71(e)

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20055

Braidwood Station, Units 1 and 2
Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456, STN 50-457 and 72-73

Byron Station, Units 1 and 2
Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. STN 50-454, STN 50-455 and 72-68

Subject: Updated Final Safety Analysis Report (UFSAR), Revision 14
Updated Fire Protection Report (FPR), Amendment 25

In accordance with the requirements of 10 CFR 50.71, "Maintenance of records, making of reports," paragraph (e)(4), Exelon Generation Company (EGC), LLC submits Revision 14 to the Updated Final Safety Analysis Report (UFSAR) and Amendment 25 to the Fire Protection Report (FPR) for Braidwood and Byron Stations.

The UFSAR is being submitted on Compact Disk – Read Only Memory (CD-ROM) in its entirety, including documents incorporated by reference (e.g., Technical Requirements Manual and Technical Specifications Bases). All UFSAR pages changed as a result of this update are clearly delineated with "Revision 14 - December 2012" in the page footer. All FPR pages changed as a result of this update are clearly delineated with "Amendment 25 – December 2012" in the page header.

One CD-ROM is included in this submission. The CD-ROM labeled, "Exelon Nuclear – Braidwood - Byron Stations UFSAR Rev. 14 December 2012, TRM, Tech Spec Bases, Fire Protection Rpt" contains the following four components:

- 001 BRW-BYR UFSAR REV 14.pdf, 140 megabytes (MB), publicly available
- 002 BRW-BYR TRM.pdf, Braidwood 5.53 MB, Byron 2.33 MB, publicly available
- 003 BRW-BYR Tech Spec Bases.pdf, Braidwood 3.05 MB, Byron 3.07 MB, publicly available
- 004 BRW-BYR Fire Protection Rpt.pdf, 220 MB, publicly available

A053
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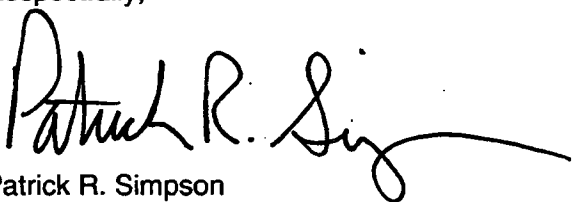
Attachment A provides a brief summary of the changes incorporated into UFSAR Revision 14.
Attachment B provides a brief summary of the changes incorporated into FPR Amendment 25.
Attachment C contains the directory path, filename, and size of each individual file.

As Manager – Licensing, I certify that the information in this submittal accurately presents changes made since the previous submittal necessary to reflect information and analyses submitted to the NRC or prepared pursuant to NRC requirements, and changes made under the provisions of 10. CFR 50.59.

There are no commitments in this letter. Should you have any questions concerning this submittal, please contact:

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Respectfully,



Patrick R. Simpson
Manager – Licensing

Attachments:

Attachment A "Braidwood / Byron UFSAR Revision 14 Change Summary Report"

Attachment B Summary of "Fire Documentation Revision Packages (FDRPs) Incorporated into Braidwood/Byron Stations Fire Protection Report – Amendment 25"

Attachment C "CD-ROM Directory Structure"

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Braidwood Station
NRC Senior Resident Inspector – Byron Station

Attachment A

Braidwood / Byron UFSAR Revision 14 Change Summary Report

DRP 12-042 revised UFSAR Sections 3.9.2 and 4.4.6 to reflect the replacement of the Loose Parts Monitoring System on Braidwood Unit 1 with a new design. This change also includes editorial changes applicable to Byron and Braidwood.

DRP 12-062 revised UFSAR to reflect current status of the normal containment purge system and its 48-inch supply and exhaust valves, 1/2VQ001A/B and 1/2VQ002A/B.

DRP 13-044 revised UFSAR to reflect replacement of Plant Process Computer on Braidwood Unit 2.

DRP 13-050 (Braidwood Only) revised UFSAR Table 6.3-16 to include installation of local high point vent lines for Safety Injection cold leg loops on Braidwood Unit 2 as a result of a design change.

DRP 13-052 (Braidwood Only) - Liquid radiation monitor OPR090J is added to monitor release tank 0WX26T. Existing Liquid Radiation Monitor OPR01J is revised to monitor only release tank 0WX01T rather than the common discharge header for both tanks. Discharge release valves 0WX353 and 0WX896 close on a high rad signal from the monitor and discharge one release tank while the other tank is being recirculated and monitored.

DRP 13-053 revised UFSAR Section 3.8.2.1.1, 3.8.2.1.2 and Figure 3.8-39 to add pressure equalizing devices for use with containment air locks on Braidwood Station Unit 2 as a result of a modification.

DRP 13-057 revised UFSAR Sections 2.4.1.1, 2.4.8.1, and 2.4.11.5 as a result of the design change to install a multi-port diffuser port pipe and discharge spillway in the Kankakee River for the Circulating Water System blowdown line.

DRP 13-060 revised UFSAR Section 2.4.2.3 to indicate that the maximum probable precipitation (PMP) elevation is less than the top of the new 15-inch steel barriers installed at the entrances to the Unit 1 and Unit 2 MSIV rooms to prevent flood waters from entering these rooms. The elevation at the top of the barrier is elevation 602'-3".

DRP 13-061 Revise UFSAR Section 8.3.1.1.2.2 and Table 8.3-5 to reflect a design change on Braidwood Unit 1 to provide a reliable source of power to the Essential Service Water (SX) Strainers to assure that backwash will be available during a loss of offsite power (LOOP) as well as during a postulated station fire (i.e., satisfies Appendix R criteria). The change also includes editorial changes applicable to B/B.

DRP 13-065 Byron Unit 1 change –B/B section 3.6.2.1.1 "Reactor Coolant Loop Piping" updated to include a discussion of the leak before break (LBB) assessment performed in conjunction with application of Mechanical Stress Improvement Process (MSIP) on the RCP inlet/outlet nozzles inclusive of a discussion of impact on the current UFSAR LBB evaluation and add a reference for the subject of MSIP LBB assessment. Section 3.6.3 References updated to add the new reference for the MSIP LBB assessment.

Attachment A

Braidwood / Byron UFSAR Revision 14 Change Summary Report

DRP 13-066 revised UFSAR to reflect replacement of Byron Unit 2 process computer.

DRP 13-072 Braidwood change only – Amends Note 8 of Table 3.9.9 to included testing information applicable to the valves procured to Specification L-2884.

DRP 13-073 revised the UFSAR to support upgrade of the Trolley on the Fuel Handling Building Overhead Crane at Braidwood. The changes describe the design functions and safety features of the modified Fuel Handling Building Overhead Crane. The crane has a new single-failure proof trolley that will be used to handle the spent fuel cask.

DRP 13-074 revised Reference 8 in USFAR Section 5.2.6 to delete reference to a specific revision of the Overpressure Protection Report to read Overpressure Protection Report for Byr/Brw Nuclear Power Plants Units 1 & 2, Analysis No. OPPER, Overpressure Protection Report, Latest Revision. This removes the processing issue to revise the Revision number of this report when analysis input parameters change. This change was made in accordance with NEI 98-03, Revision 1.

DRP14-003 revised UFSAR to reflect implementation of the Bypass Testing Instrumentation for the Westinghouse 7300 System and the Nuclear Instrumentation System on Byron Unit 1.

DRP 14-005 revised UFSAR to reflect a design change on Braidwood Unit 1 to install two safety-related instrument air accumulators, one per train, on the AF System flow control valves to the steam generators (1AF005A-H). The design change also installs check valves to separate the non-safety related portion of the instrument air from the safety-related air accumulator tanks and tubing and provides. A relief valve is provided on each instrument air accumulator for overpressure protection.

DRP 14-007 revised the UFSAR to reflect installation of Reactor Trip System (RTS) and Engineered Safety Feature Actuation System (ESFAS) Bypass Testing Instrumentation for the Westinghouse 7300 System and the Nuclear Instrumentation System on Braidwood Unit 1.

DRP 14-009 Byron only change – Updated Table 3.7-15 to include walkway and walkway access stair to BRE tower. Section 3.3.2.3 to include new stair tower. Update section 3.7.2.8 to include additional methodology to evaluate interaction between category I and non category I structures.

DRP 14-010 revised for consistency with approval of TS Amendment No.164 for Braidwood and TS No. 170 for Byron. RE: Large Break Loss-of-Coolant Accident Analysis Using the Automated Statistical Treatment of Uncertainty Method issued December 21, 2010.

DRP 14-012 revised UFSAR Sections 3.6.2.1.1 and 3.6.3 to provide the results of an assessment of the impact of the Mechanical Stress Improvement Process (MSIP) on the Leak Before Break analysis for Braidwood Unit 1.

Attachment A

Braidwood / Byron UFSAR Revision 14 Change Summary Report

DRP 14-013 provides clarification to the discussion regarding Leak Before Break methodology for containment sub-compartment analysis. This change was made in accordance with NEI 98-03, Revision 1, and addition of clarifying information.

DRP 14-014 revised UFSAR Table 12.3-3 setpoints for the Main Steamline radiation monitors (1/2RE-AR022A/B/C/D and 1/2RE-AR023A/B/C/D) from "detect less than or equal to 150 gpd" to "less than or equal to 3 times background" in accordance with ANSI/ANS-6.8.1-1981.

DRP 14-015 changed the wording from "studs" to "flange bolting" and requires MT testing for specific pump(s) called out in a new note that was added to Table 5.4-2. Added a material specification to the pressure retaining nuts in Table 5.2-3.

DRP 14-016 revised UFSAR to reflect replacement of Plant Process Computer on Braidwood Unit.

DRP 14-017 revised UFSAR to reflect a design change to upgrade the Spent Fuel Pool Bridge Crane (SFPBC) controls system at Braidwood Station. This DRP also includes editorial changes applicable to Byron and Braidwood Stations.

DRP 14-020 revised UFSAR Sections 7.2.2.4.2 and 10.3.1 to reflect installation of a stand alone UPS into the power feed to one of two SG PORV circuits per electrical division on Braidwood Station, Unit 1 (i.e., SG PORVs 1D and 1C).

DRP 14-022 revised UFSAR Sections 12.3.2.1.9 and 12.3.5 and Tables 9.3-3, 11.1-10, 12.2-13, 12.2-42 and 12.3-6 to increase the amount of resin contained in the Mixed Bed Demineralizers (1/2CV01DA/B) from 30 cubic foot to 35 cubic foot to extend the bed life.

DRP 14-023 corrected the valve number reference for the recirculation sump isolation valves in UFSAR Section 6.3.5.4. Also, revised UFSAR Section 15.2.8.1 to reflect the correct emergency operating procedure setpoints.

DRP 14-026 revised UFSAR Table 6.3-1 to reflect new maximum required Net Positive Suction Head (NPSH) for the charging pumps at Braidwood Station due to replacement of the Unit 2 A charging pump impeller.

DRP 14-027 revised UFSAR as a result of a design change on Braidwood Unit 1 associated with replacing the valve trim on the SG PORVs and installing a block valve to ensure design flow rates continue to be met in anticipation of Measurement Uncertainty Recapture (MUR) Power Uprate approval. UFSAR Section 5.2.2.5.3 is revised to address revised stresses in the relief valve piping.

DRP 14-029 revised the UFSAR to reflect a design change to upgrade the Spent Fuel Bridge Crane Control System at Byron Station.

Attachment A

Braidwood / Byron UFSAR Revision 14 Change Summary Report

DRP 14-030 revised UFSAR Table 6.3-16 to address installation of a local high point vent valve on Byron Unit 2 inside containment on the flow path from the 2A RH heat exchanger to RCS cold leg injection as a result of a design change.

DRP 14-032 revised UFSAR Section 2.3.1.2.4, Section 9.2.5, Section 9.2.9, and Table 9.2-16 regarding the UHS accident scenario and design basis for consistency with Byron Technical Specification (TS) Amendment No. 173, "Revision of TS 3.7.9, "Ultimate Heat Sink."

DRP 14-034 revised UFSAR Table 6.2-58 to reflect the normal position of 1/2CC9437B as closed consistent with the normal mechanical lineup of these valves.

DRP 14-035 revised UFSAR Section 2.4.10 and Section 9.2.5.3.3 to change the Byron Station SX makeup pump battery elevation based on as-built conditions. Also removed reference to 2 feet of margin before the pump is affected by a flood.

DRP 14-036 revised UFSAR Section 9.2.2.5 to delete the statement that the standby Component Cooling (CC) pumps are placed in service on a monthly basis for operability surveillance. The requirement to place the standby CC pump in service on a monthly basis to demonstrate operability was relocated from Technical Specifications during Improved Standard Technical Specification (ITS) conversion.

DRP 14-037 revised UFSAR Sections 4.3.2.2.7, 4.3.5, 7.7.1.22.1 and 7.7.3 to provide clarification of the BEACON Three-Dimensional Nodal Expansion Methodology (NEM) for consistency with previously approved Byron TS Amendment No. 116 and Braidwood TS Amendment No. 110 associated with implementation of Best Estimate Analyzer for Core Operations Nuclear (BEACON) and Power Distribution Monitoring (PDMS).

DRP 14-040 revised Byron UFSAR Sections 3.5.2, 3.5.4, 9.2.3 to reflect Essential Service Water Cooling Tower (SXCT) tornado missile analysis.

DRP 14-043 revised UFSAR Appendix A Regulatory Guide (RG) compliance description for RG 1.183. Deleted statement regarding availability of redundant hydrogen recombiner for consistency with Section 6.2.5 and design basis calculations.

DRP 14-044 revised UFSAR Appendix A Regulatory Guide 1.9, "Selection, Design, Qualification and Testing of Diesel-Generator Units Used as Class 1E Onsite Electric Power Systems at Nuclear Power Plants," compliance description.

DRP 14-045 revised UFSAR Appendix 6.3A for proper positioning of valves as a result of a design change on Braidwood Unit 1 to install a redundant isolation valve in series with 1SI8801A/B. In addition, the valves are added to Table 3.9-16 as "Active Valves."

DRP 14-047 revised UFSAR Appendix A Regulatory Guide (RG) 8.25 compliance description and UFSAR Section 12.3.4.2 regarding air sample program requirements. Replaced reference to RG 8.25 with ANSI Guide IEEE N232C, Section 4.5.

Attachment A

Braidwood / Byron UFSAR Revision 14 Change Summary Report

DRP 14-048 revised UFSAR Section 7.7.1.21.1 and Figure 7.7-12 to decrease the time delay setpoint for the anticipated transient without scram mitigating system (AMS) from 25 seconds to 9 seconds as a result of a design change at Byron Station Unit 1 in support of the Measurement Uncertainty Recapture (MUR) power uprate.

DRP 14-049 Revise UFSAR Sections 1.2.8, 9.1, 9.1.2.1, 9.1.2.3.11 and Reference 55 in Section 9.1.6 to reflect dry cask storage operations at Braidwood Station.

DRP 14-050 UFSAR Revision 14 editorial changes. This DRP is used to process editorial corrections such as typographical errors, inconsistencies within the UFSAR and errors in incorporating previously approved changes.

DRP 14-051 revised UFSAR Section 7.7.1.21.1 and Figure 7.7-12 to decrease the time delay setpoint for the anticipated transient without scram mitigating system (AMS) from 25 seconds to 9 seconds as a result of a design change at Braidwood Unit 1 in support of the Measurement Uncertainty Recapture (MUR) power uprate.

DRP 14-054 revised UFSAR Appendix 6.3A for proper positioning of valves as a result of a design change on Byron Unit 1 to install a redundant isolation valve in series with 1SI8801A/B. In addition, the valves are added to Table 3.9-16 as "Active Valves."

DRP 14-057 revised UFSAR Table 12.5-2 Multichannel Analyzer to Gamma Ray Counting System frequency from annual with quarterly check to per CY-AA approved procedure.

DRP 14-060 revised UFSAR Sections 12.5.3.2 and Appendix E.75 to replace the requirement for use of thermoluminescent dosimetry (TLD) to that of a primary dosimeter of legal record.

DRP 14-063 revised UFSAR Table 3.2-1 to indicate that the portions of the Nitrogen System connected to various containment electrical penetrations are Safety Category I Quality Group B and the remainder of the Nitrogen System in Safety Category II.

DRP 14-067 revised the wording in UFSAR, Page 12.3-6, Section 12.3.1.4.1.a, which currently states that the turbine building equipment drains (TE) ... "are then treated and recycled to the condensate storage tanks (Byron only)" ... to read ... "At Byron, the drains are treated by the wastewater treatment (TR) system and discharged to the circulating water system (CW) flume or to the release tank 0WX26T."

DRP 14-071 revised UFSAR Table 3.2-1 to indicate the power available lights for auxiliary safeguards cabinets are safety related.

DRP 14-073 revised UFSAR Section 9.1.4.2.2 to correct the spent fuel bridge crane speed from 0 to 30 feet per minute (fpm) to 0 to 40 fpm for Braidwood Station. This is an editorial change that corrects an error in incorporating previously approved changes (i.e., DRPs 8-076 and 8-175).

Attachment A

Braidwood / Byron UFSAR Revision 14 Change Summary Report

DRP 14-074 revised UFSAR Table 5.1-1 to reflect disconnecting the No. 63 pressurizer heater for Backup Group D on Braidwood Unit 1. Also, revised UFSAR Section 5.4.2.5.2 for consistency.

DRP 14-076 revised UFSAR Table 5.1-1 Byron Station Unit 2 pressurizer heater capacity from 1777 to 1754 kW to reflect current heater capacity due to heaters that are not available or have been previously abandoned.

DRP 14-079 revised UFSAR Section 9.1.4.22 to modify bridge speed for the Spent Fuel Pool bridge crane.

DRP 14-080 revised UFSAR Sections 4.1, 4.1.1 and Figure 4.2-7 to reflect implementation of Robust P-Grid (RPG) and Standardized Debris Filter Bottom Nozzle (SDFBN) design changes of the Westinghouse fuel that are implemented starting with the fall 2012 fuel reloads.

DRP 14-081 revised UFSAR Appendix A Regulatory Guide 1.149, "Nuclear Power Plant Simulation Facilities for use in Operator Training, License Examinations, and Applicant Experience Requirements," compliance description.

DRP 14-088 revised UFSAR Section 15.6.5.2.3.3.1 and Table 15.6-15 to reflect the most current PCT reported to the NRC via the 10CFR 50.46 letter due to Thermal Conductivity Degradation.

DRP 14-091 revised UFSAR Section 5.4.10.3.4 to provide additional information regarding pressurizer spray capability at Braidwood Station with less than three reactor coolant pumps in operation.

DRP 14-093 revised UFSAR Section 5.4.1.2 RCP motor insulation class. Adding to include verbiage for class "F" insulation on the RCP motor.