

RS-11-159

10 CFR 50.71(e)  
10 CFR 54.37(b)

October 19, 2011

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Quad Cities Nuclear Power Station, Units 1 and 2  
Renewed Facility Operating License Nos. DPR-29 and DPR-30  
NRC Docket Nos. 50-254 and 50-265

Subject: Updated Final Safety Analysis Report (UFSAR), Revision 11

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 11 to the Updated Final Safety Analysis Report (UFSAR) for Quad Cities Nuclear Power Station, Revision 20 to the Fire Protection Report (FPR), and a summary of evaluations conducted pursuant to 10 CFR 54.37(b), "Additional records and recordkeeping requirements." Summaries of evaluations conducted pursuant to 10 CFR 50.59 "Changes, tests, and experiments," are submitted under separate cover.

The UFSAR is being submitted on Compact Disk – Read Only Memory (CD-ROM) in its entirety, including documents incorporated by reference (i.e., Technical Requirements Manual, Technical Specifications Bases, and the FPR). All UFSAR pages changed as a result of this update are clearly delineated with "Revision 11, October 2011" in the page footer.

Attachment A provides a brief summary of the changes incorporated into UFSAR Revision 11.

Attachment B provides a brief summary of the changes incorporated into FPR Revision 20.

Attachment C provide the summary report pursuant to 10 CFR 54.37(b).

Attachment D contains the directory path, filename, and size of each individual file.

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One (1) CD-ROM is included in this submission. The CD-ROM labeled, "Exelon Nuclear – Quad Cities Station UFSAR Rev 11 Oct 2011 UFSAR, TRM, Tech Spec Bases, Fire Prot Rpt" contains the following four components:

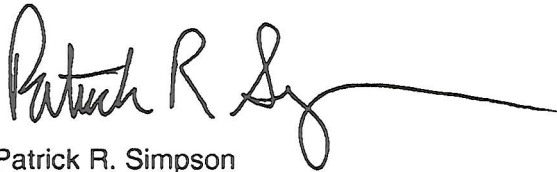
- 001 UFSAR.pdf, 44.0 MegaBytes (MB), publicly available
- 002 TRM.pdf, 2.30 MB, publicly available
- 003 Tech Spec Bases.pdf, 2.66 MB, publicly available
- 004 Fire Prot Rpt.pdf, 5.70 MB, publicly available

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 made in this document. Should you have any questions concerning this letter, please contact:

Amy Hambly  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555  
Phone: (630) 657-2808  
E-mail: amy.hambly@exeloncorp.com

Respectfully,



Patrick R. Simpson  
Manager – Licensing

Attachments:

- Attachment A - UFSAR - Revision 11 Change Summary Report
- Attachment B - FPR - Revision 20 Change Summary Report (*SUNSI - Security Related Information*)
- Attachment C - 10 CFR 54.37(b) Aging Management Review Summary
- Attachment D - CD-ROM Directory Structure

cc: Regional Administrator - NRC Region III  
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

## Attachment A

### UFSAR - Revision 11 Change Summary Report

**09-R11-001, Revision to UFSAR Sections 7.2, 7.5, 7.7 and 8.3**

Revised to reflect installation of a new Unit 2 plant process computer.

**09-R11-002, Revision to UFSAR Sections 5.4 and 6.3**

Revised to reflect that the Unit 2 Reactor Recirculation (RR) system ring header cross-tie valves were modified to be manually operated valves.

**09-R11-003, Revision to UFSAR Section 7.6**

Revised to reflect installation of the Cameron Leading Edge Flow Meter (LEFM) for Unit 2 feedwater flow measurements.

**09-R11-004, Revision to UFSAR Sections 5.4, 6.3, 7.7, 7.8, 8.3, 9.2, 9.4, 15.3, 15.4 and 15.8**

Revised to reflect replacement of the Unit 2 RR motor-generator sets with Adjustable Speed Drives (ASDs).

**09-R11-005, Revision to UFSAR Section 8.3**

Revised to reflect the upgrade of the Unit 2 Isolated Phase Bus Duct system.

**09-R11-006, Revision to UFSAR Section 8.3**

Revised to reflect the upgrade of the Unit 1 Isolated Phase Bus Duct system.

**09-R11-007, Revision to UFSAR Sections 1.6, 3.5, 10.1 and 10.2**

Revised to reflect the low-pressure turbine retrofit on Unit 2.

**09-R11-008, Revision to UFSAR Section 6.5**

Revised to remove excessive detail from Section 6.5.3 pertaining to the Standby Gas Treatment (SBGT) system fan and motor.

**09-R11-009, Revision to UFSAR Section 9.1**

Revised to reflect the upgrade of the Reactor Building Overhead Crane control system.

**09-R11-012, Revision to UFSAR Section 5.4**

Revised to reflect installation of a new rotating assembly in the '1A' RR pump.

**09-R11-013, Revision to UFSAR Section 7.6**

Revised to reflect installation of the Cameron Leading Edge Flow Meter (LEFM) for Unit 1 feedwater flow measurements.

**09-R11-014, Revision to UFSAR Section 11.2**

Revised to expand the liquid radioactive waste discussion pertaining to the routing of the laundry sample tank contents, and decant water from the condensate phase separators.

**09-R11-015, Revision to UFSAR Section 3.5**

Revised the missile protection discussion since the RR motor-generator sets are no longer a missile source, and no longer need to be credited with affording turbine missile protection (for adjacent electrical buses) since the current turbine rotor design has eliminated turbine missile concerns.



## Attachment A

### UFSAR - Revision 11 Change Summary Report

**09-R11-016, Revision to UFSAR Sections 4.2, 4.3, 4.4, 6.2, 6.3, 9.1, 15.0, 15.1, 15.2, 15.3, 15.4, 15.5, 15.6 and 15.7**

Revised to reflect changes related to the reload analysis for Unit 2 Cycle 21.

**09-R11-017, Revision to UFSAR Sections 1.6, 3.5, 10.1 and 10.2**

Revised to reflect the low-pressure turbine retrofit on Unit 1.

**09-R11-018, Revision to UFSAR Section 9.1**

Revised to reformat and clarify criticality analysis details for spent fuel storage.

**09-R11-019, Revision to UFSAR Section 6.2**

Revised to reflect removal of a relief valve from the Unit 2 Reactor Building Closed Cooling Water (RBCCW) system which is no longer associated with Generic Letter 96-06.

**09-R11-020, Revision to UFSAR Sections 10.4 and 11.3**

Revised statements pertaining to the Steam Jet Air Ejector (SJAE) steam supply pressure to reflect the minimum pressure recommended by the manufacturer.

**09-R11-021, Revision to UFSAR Section 11.5**

Revised to remove excessive detail pertaining to the environmental sample stations, which is provided in the Offsite Dose Calculation Manual (ODCM).

**09-R11-022, Revision to UFSAR Section 6.2**

Revised to enhance the discussion pertaining to primary containment pathways.

**09-R11-023, Revision to UFSAR Section 3.11**

Revised Figure 3.11-1 to update environmental qualification (EQ) zone parameters and incorporate humidity conditions from high energy line breaks.

**09-R11-024, Revision to UFSAR Section 13.1**

Revised to remove excessive detail pertaining to the Station's organization and position/personnel qualification requirements.

**09-R11-025, Revision to UFSAR Sections 1.2, 4.1, 4.2, 4.3, 4.4, 6.2, 6.3, 15.1, 15.3, 15.4, 15.5 and 15.8**

Revised to reflect changes related to the reload analysis for Unit 1 Cycle 22, and remove references to General Electric fuel which no longer resides in the reactors for either unit.

**09-R11-026, Revision to UFSAR Appendix A**

Revised to correctly reflect the 10 CFR 50.55a reference, and indicate that the Pressure-Temperature curves for 54 EFPY were submitted prior to the term of extended operation.

**09-R11-027, Revision to UFSAR Section 9.3**

Revised to remove excessive detail pertaining to a service air pressure value for the Standby Liquid Control (SBLC) air sparger.

## Attachment A

### UFSAR - Revision 11 Change Summary Report

**09-R11-028, Revision to UFSAR Appendix A**

Revised to incorporate into Section A.1.23 of Appendix A the requirement for a one-time inspection of a sample of compressed gas system flexible hoses for age-related degradation.

**09-R11-029, Revision to UFSAR Section 6.2**

Revised to clarify the discussion pertaining to Main Steam Isolation Valve (MSIV) exercising/testing during power operation.

**09-R11-030, Revision to UFSAR Appendix A**

Revised to incorporate a new section (Section A.4) pertaining to newly identified SSCs as a result of the 10 CFR 54.37(b) review process.

**09-R11-031, Revision to UFSAR Section 9.1**

Revised to reflect the Westinghouse Boraflex degradation criticality analysis, which takes into account updated degradation assumptions, for Optima2 fuel.

**09-R11-032, Revision to UFSAR Section 6.4**

Revised the toxic gas protection discussion to reflect a new ammonia limit of 300 ppm, and that the bounding event is a barge accident.

**Attachment C**

**10 CFR 54.37(b) Aging Management Review Summary**

**NEWLY IDENTIFIED SSCs (10 CFR 54.37(b))**

After the renewed license is issued, the UFSAR update required by 10 CFR 50.71(e) must include any systems, structures, and components newly identified that would have been subject to an aging management review or evaluation of time-limited aging analyses in accordance with §54.21. This UFSAR update must describe how the effects of aging will be managed such that the intended function(s) in §54.4(b) will be effectively maintained during the period of extended operation.

No.	Date Identified	SSC Description	Aging Management Review (AMR) Conclusion	Aging Management Program
1.	09/22/2011	<p>The Environmental Qualification (EQ) Program was revised to reflect increases in the assumed zone temperatures and pressures in the first floor of the Reactor Building. These changes resulted in the addition of several SSCs into the EQ Program. These SSCs were installed at the time of the license renewal review, so they are considered "newly identified" under the terms of 10 CFR 54.37(b).</p> <p>The changes to the EQ Program zone assumptions associated with the Reactor Building components were noted in a revision to UFSAR Figure 3.11-1, Sheets 1a, 1b, 1c, 1d, 3a, 5a, 7a.</p>	<p>SSCs that are included in the scope of the EQ Program are subject to Time Limited Aging Analysis (TLAA). Since these SSCs have been added to the scope of the EQ Program, they are within the scope of its TLAA.</p>	<p>The existing EQ Program was credited without revision as Aging Management Program (AMP) B.1.35 in the Renewed License SER (NUREG-1796).</p> <p>The addition of these newly identified SSCs to the scope of the EQ Program also included them in the scope of Aging Management Program (AMP) B.1.35. These SSCs are now subject to the same aging management activities as those in the License Renewal Application.</p>



**Attachment D**

**CD-ROM Directory Structure**

<b>All files listed below are publicly available</b>		
<b>Directory Path</b>	<b>File Name</b>	<b>Size</b>
E:\001 QDC UFSAR	000 List of Effective Pages.pdf	103 KB
E:\001 QDC UFSAR	001 Chap 01 Introduction.pdf	338 KB
E:\001 QDC UFSAR	002 Chap 02 Site Characteristics.pdf	1610 KB
E:\001 QDC UFSAR	003 Chap 03 Design of Struc, Comp, Equip.pdf	8980 KB
E:\001 QDC UFSAR	004 Chap 04 Reactor.pdf	5532 KB
E:\001 QDC UFSAR	005 Chap 05 Reactor Coolant Sys.pdf	2048 KB
E:\001 QDC UFSAR	006 Chap 06 Engineered Safety Features.pdf	9032 KB
E:\001 QDC UFSAR	007 Chap 07 Instrumentation and Controls.pdf	5314 KB
E:\001 QDC UFSAR	008 Chap 08 Electric Power.pdf	874 KB
E:\001 QDC UFSAR	009 Chap 09 Auxiliary Systems.pdf	3226 KB
E:\001 QDC UFSAR	010 Chap 10 Steam and Power Conversion.pdf	686 KB
E:\001 QDC UFSAR	011 Chap 11 Radioactive Waste Mgmt.pdf	1800 KB
E:\001 QDC UFSAR	012 Chap 12 Radiation Protection.pdf	394 KB
E:\001 QDC UFSAR	013 Chap 13 Conduct of Operations.pdf	687 KB
E:\001 QDC UFSAR	014 Chap 14 Initial Test Program.pdf	1452 KB
E:\001 QDC UFSAR	015 Chap 15 Accident and Transient Analyses.pdf	2797 KB
E:\001 QDC UFSAR	016 Chap 16 Technical Specifications.pdf	37 KB
E:\001 QDC UFSAR	017 Chap 17 Quality Assurance.pdf	52 KB
E:\001 QDC UFSAR	018 Appendix A.pdf	174 KB
E:\002 QDC TRM	001 QDC TRM.pdf	2358 KB
E:\003 QDC Tech Spec Bases	001 QDC Tech Spec Bases.pdf	2294 KB
E:\003 QDC Tech Spec Bases	002 QDC Tech Spec Bases Affected Page List.pdf	435 KB
E:\004 QDC FPR	001 QDC Fire Protection Report.pdf	4906 KB
E:\004 QDC FPR	002 QDC FPR VOL 1 Effective Pages.pdf	470 KB
E:\004 QDC FPR	003 QDC FPR VOL 2 Effective Pages.pdf	468 KB