



Michael P. Gallagher
Vice President, License Renewal
Exelon Nuclear

200 Exelon Way
Kennett Square, PA 19348

610 765 5958 Office
610 765 5956 Fax
www.exeloncorp.com

michaelp.gallagher@exeloncorp.com

10 CFR 50
10 CFR 51
10 CFR 54

RS-14-348

December 15, 2014

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

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

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

Subject: Exelon Generation Company, LLC Comments on the Safety Evaluation Report with Open Items, related to the Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2 License Renewal Application

References: 1. Exelon Generation Company, LLC letter from Michael P. Gallagher to NRC Document Control Desk, "Application for Renewed Operating Licenses," dated May 29, 2013

2. Letter from Christopher G. Miller (NRC) to Michael P. Gallagher (Exelon), "Safety Evaluation Report with Open Items Related to the License Renewal of Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2," dated October 30, 2014

In Reference 1, Exelon Generation Company, LLC (Exelon) submitted the License Renewal Application (LRA) for Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2 (BBS).

In Reference 2, the U.S. Nuclear Regulatory Commission issued the Safety Evaluation Report with Open Items (SER) related to the BBS License Renewal Application and requested Exelon to review the SER and provide comments to the staff within 45 days of the date of that letter.

December 15, 2014
U.S. Nuclear Regulatory Commission
Page 2

Exelon has completed its review of the SER. The Enclosure provides Exelon's comments on the SER.

There are no new or revised regulatory commitments contained in this letter.

If you have any questions, please contact Mr. Al Fulvio, Manager, Exelon License Renewal, at 610-765-5936.

Respectfully,



Michael P. Gallagher
Vice President - License Renewal Projects
Exelon Generation Company, LLC

Enclosure: Exelon Comments on the Safety Evaluation Report with Open Items (SER)

cc: Regional Administrator – NRC Region III
NRC Project Manager (Safety Review), NRR-DLR
NRC Project Manager (Environmental Review), NRR-DLR
NRC Senior Resident Inspector, Braidwood Station
NRC Senior Resident Inspector, Byron Station
NRC Project Manager, NRR-DORL-Braidwood and Byron Stations
Illinois Emergency Management Agency - Division of Nuclear Safety

Enclosure

Exelon Comments on the Safety Evaluation Report with Open Items (SER)

Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2,
License Renewal Application

The table on the following pages provides comments and suggestions for NRC staff consideration, based upon Exelon's review of the Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2, License Renewal Application Safety Evaluation Report with Open Items (SER).

For each comment, an item number is specified in column 1, the SER Section number is identified in column 2, the SER page number is cited in column 3 and the specific comment is provided in column 4.

Exelon Comments on the Safety Evaluation Report with Open Items (SER)			
Where suggested changes to the SER are provided, they are highlighted with <i>bolded italics</i> for inserted text and strikethroughs for deleted text.			
#	Section #	Page #	Comment
1	1.3	1-6	<p>The second full paragraph appears to credit LRA Appendix B for satisfying the 10 CFR 54.21(b) requirement for providing a description of any CLB changes during review of the LRA. LRA Appendix B does not satisfy requirements of 54.21(b). Since the 3rd full paragraph addresses 54.21(b), recommend revising the sentence in paragraph two to remove reference to LRA Appendix B and 54.21(b) as follows:</p> <p>“LRA Sections 3 and 4 and Appendix B address the license renewal requirements of 10 CFR 54.21(a), (b), and (c).”</p>
2	1.4	1-8	In the column of SER Sections affected for LR-ISG-2012-02, SER Sections 1.5.2 and 1.5.5 are listed. These sections don't exist.
3	1.7	1-9	The last paragraph on the page includes incorrect references to the License Renewal Commitment List. The first sentence should read, "LRA Appendix A, Section A.5, 'License Renewal Commitment List,'" contains... Similarly, the second sentence should begin with "Through the commitments in LRA Appendix A, Section A.5, License Renewal Commitment List, the applicant will implement..."
4	1.7	1-10	Second line on page should refer to "LRA Appendix A, Section A.5, 'License Renewal Commitment List'" rather than LRA Section A4, Table A4-1.
5	1.7	1-10	Unless judged unnecessary due to the submittal schedule change occurring after October 7, 2014, a sentence should be added prior to the last sentence indicating Project Manager concurrence with the latest submittal schedule for Set 35, such as "Subsequently, the staff agreed to a December 15, 2014 submittal date for the updated commitment implementation schedule."
6	2.1.3.2.1	2-4	Recommend revising 1st sentence of noted section for clarity, as follows: "The staff reviewed <i>the adequacy</i> of the quality controls used by the applicant <i>during the development of the LRA to ensure that LRA development activities were performed in accordance with the applicant's license renewal program requirements.</i> "

Exelon Comments on the Safety Evaluation Report with Open Items (SER)			
Where suggested changes to the SER are provided, they are highlighted with bolded italics for inserted text and strikethroughs for deleted text.			
#	Section #	Page #	Comment
7	2.1.3.2.1	2-5	Top of page, recommend revising the last bullet in the list as follows: "performed internal assessments including those performed by a challenge board, the plant operations offsite review committee and the nuclear safety review board"
8	2.1.4.2.2	2-11	Revise the last sentence of the first paragraph on page 2-11 as follows: "The staff determined that the applicant identified the nonsafety-related SSCs that the performed a safety function or supported a safety system that would require the nonsafety related SSC to be and appropriately included the nonsafety-related SSC within the scope of license renewal in accordance with 10 CFR 54.4(a)(2)."
9	2.1.5.4.2	2-26	The second and third paragraphs on page 2-26 appear to be duplicated.
10	2.3.2.1.1	2-35	The intended functions introduction sentence cites "component cooling" system it should be "combustible gas control" System
11	2.3.2.2.1	2-36	The intended functions introduction sentence cites "component cooling" system it should be "containment spray" system
12	2.3.2.2.1	2-36	The system intended functions in the SER for Containment Spray do not agree with the system intended functions identified in the LRA. Recommend revising the listing in the SER to match those in the LRA.
13	2.3.3.1.1	2-41	The intended functions introduction sentence cites "component cooling" system it should be "auxiliary building ventilation system"
14	2.3.3.2.1	2-43	The intended functions in the SER do not match the intended functions in the LRA. Example, the sixth and seventh intended functions do not align with the LRA intended functions.
15	2.3.3.7.1	2-48	The intended functions introduction sentence cites "component cooling" system it should be "containment ventilation system"

Exelon Comments on the Safety Evaluation Report with Open Items (SER)			
Where suggested changes to the SER are provided, they are highlighted with bolded italics for inserted text and strikethroughs for deleted text.			
#	Section #	Page #	Comment
16	2.3.3.7.1	2-48	First paragraph, last sentence: SER lists the <u>subsystems</u> of the primary containment ventilation <u>plant</u> system. LRA page 2.3-115 states Containment Ventilation System includes "primary containment ventilation plant system and the primary containment purge plant system". Recommend revising SER such that it defines the containment ventilation system as consisting of the following plant systems, consistent with the LRA: the primary containment ventilation plant system and the primary containment purge plant system
17	2.3.3.8.1	2-49	The intended functions introduction sentence cites "component cooling" system it should be "control area ventilation" system.
18	2.3.3.8.2	2-49	Section 2.3.3.8.2 control area ventilation system section, appears to address LRA section 2.3.3.7.2 which is the containment ventilation system. Needs to be revised as appropriate.
19	2.3.3.12.1	2-52	The first sentence of SER section 2.3.3.12.1 should be revised as follows: "LRA Section 2.3.3.12 states that the fire protection system consists of fire water protection and detection system, halon Halon system, and portions of the carbon dioxide (CO2) system."
20	2.3.3.12.1	2-53	The SER omits the final intended function for the Fire Protection System. The following intended function should be added to the list on page 2-53. <ul style="list-style-type: none"> • <i>relied upon in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission's regulations for Environmental Qualification (10 CFR 50.49)</i>

Exelon Comments on the Safety Evaluation Report with Open Items (SER)			
Where suggested changes to the SER are provided, they are highlighted with bolded italics for inserted text and strikethroughs for deleted text.			
#	Section #	Page #	Comment
21	2.3.3.12.2	2-54	<p>Fourth paragraph, the SER should be revised as follows: “In RAI 2.3.3.12-1 2.3.3.12-2, dated November 25, 2013, the staff stated that the following LRA boundary drawing shows the following fire protection systems/components as out of are not identified as within the scope of license renewal and subject to aging management review (i.e., not colored in green).”</p> <p>The SER references “the following LRA boundary drawing” but then does not then provide a drawing number. The proposed wording is clearer. Also, the wrong RAI number was referenced.</p>
22	2.3.3.12.2	2-54	<p>Last paragraph of page 2-54: The SER should be revised as follows: “Passive components in the diesel-driven fire pump engine: These components are included in the scope of license renewal but are not subject to AMR.”</p>
23	2.3.3.12.2	2-55	<p>Second non-indented paragraph of page 2-55: The SER should be revised as follows: “The applicant confirmed that the passive all sub-components in the diesel-driven fire pump engine are included in the scope of license renewal subject to an AMR. However, since these components are integral sub-components of the active diesel engine assembly, they are not subject to aging management review. The applicant indicated that the active components of the fire pump diesel engines are not subject to an AMR. The staff confirmed that the active components of the fire pump diesel engines do not meet the AMR criteria of 10 CFR 54.21(a)(1)(i).”</p>
24	2.3.3.21.1	2-68	<p>First sentence of SER section 2.3.3.21.1, LRA Section 2.3.3.20 should be 2.3.3.21</p>

Exelon Comments on the Safety Evaluation Report with Open Items (SER)			
Where suggested changes to the SER are provided, they are highlighted with bolded italics for inserted text and strikethroughs for deleted text.			
#	Section #	Page #	Comment
25	2.3.3.21.1	2-68	Last paragraph on page 2-68, the SER describes only two of the three intended functions of the Sampling System. The SER should be revised as follows: "The license renewal intended functions of the sampling system are to provide primary containment isolation, resist nonsafety-related SSC failure that could prevent satisfactory accomplishment of a safety-related function , and the sampling system is relied upon in safety analyses or plant evaluations to perform a function that demonstrates compliance with NRC regulations for Environmental Qualification (10 CFR 50.49)."
26	2.3.4.5.1	2-77	Top of the page, the listing of the main turbine and auxiliaries system purposes address all but one. The extraction steam system was skipped. Suggest adding purpose" to increase the enthalpy of the feedwater being supplied to the steam generators. "
27	2.4.2.1	2-80	Third paragraph on page, proposed change to make statement accurate - The circulating water pump house structure is a reinforced concrete structure founded on bedrock and controlled backfill that is located east of the pump house the main power block.
28	2.4.3.1	2-81	Third paragraph on page, third sentence, after (MC), change "piping and supports" to "piping and components", since the phrase is describing where the supports are used. Suggest the following change, "The group is comprised of supports for American Society of Mechanical Engineers (ASME) Classes 1, 2 and 3, and metal components (MC) piping and components supports , cable trays..."

Exelon Comments on the Safety Evaluation Report with Open Items (SER)

Where suggested changes to the SER are provided, they are highlighted with **bolded italics** for inserted text and ~~strikethroughs~~ for deleted text.

#	Section #	Page #	Comment
29	2.4.3.1	2-81 & 2-82	Last paragraph on page, last sentence, is potentially confusing because concrete anchors and embedments associated with component supports are included within the component support commodity group, while anchors and embedments associated with building structures are associated with the building structures (anchors are mentioned again in section 2.4.3.2, 2nd paragraph as included in the scope of the component supports). Suggest changing as follows- "Concrete equipment foundations, as well as concrete anchors and concrete embedments, not associated with component supports , are evaluated separately by the applicant elsewhere in the LRA as part of the license renewal structures that contain them."
30	2.4.3	2-81 and 2-82	Section 2.4.3 Component Supports Commodity Group, does not reflect Region III inspection item and Exelon correspondence letter RS-14-235 dated 8/29/2014 to address the addition of the seismic support assembly for the control rod drive mechanisms to the scope of the Component Supports Commodity Group.
31	2.4.3.2	2-82	Second paragraph, the list in the second sentence is potentially confusing because including the phrase "structural steel and stairs, platforms and grates" could be inferred to include miscellaneous steel, which is included in the structural commodity group. Suggest just using "platforms" instead of "structural steel and stairs, platforms and grates".
32	2.4.4.2	2-83	Section 2.4.4.2 Containment Structure, does not discuss response to RAI 2.1-3, Letter RS-13-274, dated 12/19/13, which resulted in the addition of portions of the containment access facility to the scope of the Containment Structure.
33	2.4.7.1	2-86	First paragraph of section 2.4.7.1, third sentence is inaccurate, "The UHS is also designed to withstand design-basis tornado winds and tornado missiles." Suggest the following changes, "The UHS is also designed to withstand design-basis tornado winds and tornado missiles, with noted exceptions as described in UFSAR section 9.2.5.3.2. "

Exelon Comments on the Safety Evaluation Report with Open Items (SER)

Where suggested changes to the SER are provided, they are highlighted with **bolded italics** for inserted text and ~~strikethroughs~~ for deleted text.

#	Section #	Page #	Comment
34	2.4.8.1	2-87	First paragraph of section 2.4.8.1, the 3rd & 4th sentences are incomplete in that they only describe either Byron or Braidwood and do not describe the other site. Suggest the following " At Byron, The Fuel Handling Building is a reinforced concrete structure supported by a concrete mat foundation, which at Byron is supported directly on bedrock. At Braidwood, the mat foundation is supported on lean concrete over glacial till and compacted sand."
35	2.4.8.1	2-87	The last sentence that starts on the page describes what is in the Fuel Handling Building and not what it consists of. Suggest changing "consists of" to "contains" as follows- "The building contains consist of a single fuel transfer canal, spent fuel pool and cask loading pit, cask decontamination area, and new fuel storage vaults, all of which are shared between Unit 1 and 2."
36	2.4.8.1	2-88	1st paragraph on the page, the 2nd complete sentence describes the fuel transfer tube and sleeve and could be misunderstood as concluding that there are no sleeves in the Fuel Handling Building. Suggest adding a clarifying phrase to note that the thought only applies to the sleeves associated with the containment as follows- "The fuel transfer tube, blind flange, and manually operated valve are evaluated with the Fuel Handling and Storage System, while the section of the fuel transfer tube penetration sleeve, which serves as a portion of the containment boundary, is evaluated as part of the Containment Structure."
37	2.4.8.2	2-88	2nd paragraph, the 2nd complete sentence of section 2.4.8.2, which lists the component types, could be confusing since it mentions "support members", which are covered under the component support group, so mention of "support members" should be deleted. Suggested wording: "Component types include structural bolting, concrete, concrete anchors and embedments, structural steel components, hatches and plugs, interior masonry walls, and metal decking, and support members. "

Exelon Comments on the Safety Evaluation Report with Open Items (SER)			
Where suggested changes to the SER are provided, they are highlighted with bolded italics for inserted text and strikethroughs for deleted text.			
#	Section #	Page #	Comment
38	2.4.9.1	2-89	1st paragraph, lines 10 & 11: Revise the following statement as indicated to make sentence complete and accurate "Portions of the Lake Screen House (substructure) and the entire Essential Service Water Discharge Structure are considered safety-related Seismic Category I and relied upon to remain functional during and following design basis events; all other structures are considered nonsafety-related."
39	2.4.15.1	2-96	1st paragraph, 2nd line of section 2.4.15.1, there is a typo: Suggest changing "access" to "across" as follows- "In LRA Section 2.4.15, the applicant stated that the Structural Commodity Group at BBS, Units 1 and 2, shares material and environment properties allowing common programs access across all in-scope structures to manage their aging effects."
40	2.4.15.2	2-97	2nd paragraph, 3rd sentence of section 2.4.15.2: Suggest changing "shelter, flood barrier and protection" to "shelter and protection, flood barrier"
41	3.0.3.1.10	3-42	Recent RAI responses from letters RS-14-313 dated 10/31/2014 and RS-14-336 dated 11/22/2014, related to flux thimble tubes, need to be incorporated. UFSAR Supplement and Conclusion may need to be revised based on RAI responses.
42	3.0.3.2.2	3-86 and 3-87	Top of page 3-87, the SER states that Exelon attributed a likely cause of the Byron Unit 2 stuck stud 11 to be " (2) undetected improper lubrication during installation of the stud during the previous refueling outage". This is incorrect; Exelon letter RS-13-247 dated 11/5/2013, Enclosure A, page 14 page does not state that "improper lubrication" is a likely cause. On page 15 of the same letter Exelon states that "improper lubrication" is an unlikely cause.
43	3.0.3.2.6	3-119	Enhancement 1 discussion, last sentence beginning: "The staff noticed that by letter dated August 29 ..." – This sentence could imply that A.2.1.11 and B.2.1.11 were modified in the referenced letter to clarify that deep well pumps at Byron are included as part of the components to which Enhancement 1 applies. The August 29, 2014 letter (RS-14-235) and modifications to A.2.1.11 and B.2.1.11 program description clarified only that the deep well pumps, along with other nonsafety-related components, are

Exelon Comments on the Safety Evaluation Report with Open Items (SER)			
Where suggested changes to the SER are provided, they are highlighted with bolded italics for inserted text and strikethroughs for deleted text.			
#	Section #	Page #	Comment
			subject to periodic inspections. Enhancement 1 relates to periodic NDE inspections of those nonsafety-related components which have a spatial interaction only. Since the deep well pumps do not have a potential for spatial interaction with safety-related components, Enhancement 1 does not apply. Therefore, this sentence and discussion should be modified and relocated elsewhere in the applicable SER section.
44	3.0.3.2.6	3-120	Enhancement 4. The sentence beginning, "The applicant will require adhesion testing ..." should have the following phrase after "testing", " when peeling, blistering, or delamination is detected and the coating is not repaired or replaced "
45	3.0.3.2.11	3-132	<p>1st paragraph, 2nd to last sentence: The SER should be revised as follows: "The program includes an enhancement to perform additional "preventive actions" only at Byron where chemical additions will be used to prevent or minimize MIC."</p> <p>The way it reads currently implies that the Braidwood program does not include any preventive actions. However, the Braidwood program includes flushing which helps minimize the build-up of sediment and prevents aging (e.g., MIC).</p>
46	3.0.3.2.11	3-137	1st full paragraph, line 11: The SER contains an incomplete statement which makes it inaccurate, and should be revised as follows: "The applicant stated that existing procedures also require that raw water sample sizes be increased as follows: (a) four additional inspections if wall loss of greater than 50 percent of nominal wall thickness is detected; (b) two additional inspections if wall loss of 30 percent to 50 percent of nominal wall thickness is detected and calculated remaining life is less than two years ; and (c) no additional inspections if wall loss less than 30 percent of nominal wall thickness is detected."

Exelon Comments on the Safety Evaluation Report with Open Items (SER)			
Where suggested changes to the SER are provided, they are highlighted with bolded italics for inserted text and strikethroughs for deleted text.			
#	Section #	Page #	Comment
47	3.0.3.2.11	3-140	In the Enhancement 9 discussion the SER contains an inaccurate reference to a RAI and should be revised as follows: "The applicant also revised this enhancement to address criteria for reducing the number of inspections being conducted every 10 years as described below in the response to RAI B.2.1.16-2 B.2.1.16-1c. " The de-escalation criteria was provided in the response to RAI B.2.1.16-1c, RS-14-235, dated 8/29/14, not in the response to RAI B.2.1.16-2, RS-14-078, dated 3/13/14.
48	3.0.3.2.13	3-148	Enhancement 3, 2nd sentence: Existing SER words imply there are 3 tanks. Recommend revising as follows: "The applicant stated that the analysis for the levels of microbiological organisms will include the auxiliary feedwater day tanks, and essential service water makeup pumps and the diesel oil storage tanks (Byron only)."
49	3.0.3.2.13	3-149	Enhancement 5, 2nd sentence implies that particulate concentration is part of the enhancement. Sampling for particulate concentration is not part of Enhancement 5, only analysis for water and sediment content and levels of microbiological organisms. Therefore, recommend deleting "particulate concentration" from 2nd sentence.
50	3.0.3.2.15	3-171	Discussion of Enhancement 3: Unlike Enhancements 1 and 2, Enhancement 3 does not specify station-specific applicability. Recommend adding (Byron only) so as not to imply essential service water piping at Braidwood will also be recoated prior to PEO.
51	3.0.3.2.17	3-196	Near the top of the page, revise as follows to make the statement accurate: (1) The applicant stated that concrete degradation due to chemical attack or leaching has not been observed and the groundwater at BBS is nonaggressive with respect to pH and sulphates.

Exelon Comments on the Safety Evaluation Report with Open Items (SER)			
Where suggested changes to the SER are provided, they are highlighted with bolded italics for inserted text and strikethroughs for deleted text.			
#	Section #	Page #	Comment
52	3.0.3.2.20	3-219	Enhancement 17 to the Structures Monitoring program as a result of Exelon response to RAI 3.5.2.10-1 in letter RS-14-169, dated June 16, 2014, was not discussed in the description of Structures Monitoring enhancements.
53	3.0.3.3	3-257	<p>Last paragraph, fifth sentence, the SER should be revised as follows: “The applicant also stated that the CeramAlloy™ coating has been used for approximately 17 years and is currently installed in over 60 heat exchangers.”</p> <p>The way it currently reads implies that the coating has been installed for all the heat exchangers for 17 years. This is not the case. The coatings were applied as needed beginning approximately 17 years ago.</p>
54	3.0.3.3	3-262	<p>Second full paragraph, the SER should be revised as follows: “However, it appears to the staff that the reference to Service Level II coatings (nonsafety-related coatings) would encompass coatings applied to the internal surfaces of components described in the RAI response (e.g., associated with the caustic and acid supply to the radwaste system demineralizers, hypochlorite injection to the discharge of the essential service water pumps, and OC auxiliary building chiller condenser at Byron).”</p> <p>Basis for the deleted text above, is that the SER goes on to describe the NRC’s concern that all in-scope coatings be inspected by personnel qualified in accordance with standards endorsed in RG 1.54. The BBS response to RAI 3.0.3-2a in letter RS-14-124 dated 05/05/2014 was to add detail to the Open-Cycle Cooling Water System, Fuel Oil Chemistry, and Fire Water AMPs to require qualified personnel. However, the specific components listed in the SER (deleted components above) are not managed by any of these three AMPs but instead are managed by the Inspection of Internal Surfaces AMP. The Inspection of Internal Surfaces AMP does not include the requirement to use qualified coating inspectors. The basis for this is described in the response to RAI 3.0.3.2a Request (2) evaluated in the SER on page 3-255.</p>

Exelon Comments on the Safety Evaluation Report with Open Items (SER)			
Where suggested changes to the SER are provided, they are highlighted with bolded italics for inserted text and strikethroughs for deleted text.			
#	Section #	Page #	Comment
55	Sections 3.1, 3.2, 3.3, 3.4, 3.5, and 3.6	multiple	GENERIC comment for Sections 3.1, 3.2, 3.3, 3.4, 3.5, and 3.6. These sections refer to LRA Tables for the Summary of Aging Management Evaluations for the respective sections, with a '-1', whereas the LRA Tables are designated with a '.1'. Example, SER Section 3.5.1 on page 3-439, second sentence, refers to LRA Table 3.5-1 for the "Summary of Aging Management Evaluations for the Structures and Component Supports." LRA Table should be 3.5.1 instead of 3.5-1. This applies throughout the entire SER section 3.5 and sections 3.1, 3.2, 3.3, 3.4, and 3.6 as well.
56	3.1.2.1.6	3-309	First paragraph, last sentence "(i.e., 20 percent of the population)" should read "(i.e., 20 percent of the population <i>up to a maximum of 25 component inspections</i>)"
57	3.1.2.3.4	3-329	Second paragraph under Steam Generator Tubes to Treated Water: Second sentence: "The GALL Report recommends AMP XI.2, Steam Generators, and XI.19, Water Chemistry ..." should read "The GALL Report recommends AMP XI.2, Water Chemistry, and XI.19, Steam Generators ..."
58	3.2.2.1.2	3-346	Top of page, "(i.e., 20 percent of the population)" should read "(i.e., 20 percent of the population <i>up to a maximum of 25 component inspections</i>)"
59	Table 3.3-1 Items 3.3.1-3, 3.3.1-5,	3-355	SER Table 3.3-1 Items 3.3.1-3 and 3.3.1-5, indicate that further evaluation is <u>not</u> required. However the LRA Table 3.3-1 and SRP indicate that further evaluation is required. Changes should be made to correct these items.

Exelon Comments on the Safety Evaluation Report with Open Items (SER)			
Where suggested changes to the SER are provided, they are highlighted with bolded italics for inserted text and strikethroughs for deleted text.			
#	Section #	Page #	Comment
60	3.3.2.1.8	3-388	<p>Second paragraph on page 3-388, states: "LRA Table 3.3-1, Item 3.3.1-99 addresses carbon steel, gray cast iron, copper-alloy with less than 15 percent zinc, and stainless steel piping, piping components, and piping elements exposed to lubricating oil (internal),"</p> <p>This is not consistent with, SER Table 3.3-1 on page 3-373 and LRA Table 3.3-1 Item 3.3.1-99 which states: "Copper alloy, Aluminum Piping, piping components, and piping elements exposed to Lubricating oil"</p>
61	3.5	3-440	<p>GENERIC comment for SER Table 3.5-1. Under Staff Evaluation for item 3.5.1-1 (1st table item), SER Section 3.5.2.2.1.1 is referenced. This section is not labeled in the SER. SER is only labeled to the level of 3.5.2.2.1 (subsections for the further evaluations are missing). This comment is applicable to multiple Staff Evaluation items in SER Table 3.5-1. Recommend adding referenced section number 3.5.2.2.1.1 to SER page 3-471, in front of underlined heading: "Cracking and Distortion due to Increased Stress Levels..." Similarly applicable to 3.5.2.2.1 and 3.5.2.2.2 subsections.</p>
62	3.5.2.1.6	3-468	<p>Last sentence of second paragraph, change as follows: "Based on its review of components associated with item 3.5.1-80 for which the applicant cited generic Note E, the staff finds the applicant's proposal to manage the effects of aging using the ASME Section XI, Subsection IWL Program acceptable because the required detailed visual examination of the tendon anchorage area will detect a loss of material of the tendon grease cap anchorage bolts."</p> <p>Basis for change, this line item is for the tendon grease cap steel structural bolting, which are around the anchorage but not part of the tendon load path.</p>

Exelon Comments on the Safety Evaluation Report with Open Items (SER)			
Where suggested changes to the SER are provided, they are highlighted with bolded italics for inserted text and strikethroughs for deleted text.			
#	Section #	Page #	Comment
63	3.5.2.1.7	3-469	<p>Last sentence of second paragraph, change as follows: "Based on its review of components associated with item 3.5.1-88 for which the applicant cited generic note E, the staff finds the applicant's proposal to manage the effects of aging using the ASME Section XI, Subsection IWL Program acceptable because the required detailed visual examination of the tendon anchorage area will detect loose bolts, missing or loose nuts, and other conditions indicative of loss of preload in the tendon grease cap anchorage bolts."</p> <p>Basis for change, this line item is for the tendon grease cap steel structural bolting, which are around the anchorage but not part of the tendon load path.</p>
64	4.1.2.1.2	4-9	7th paragraph of page 4-9 - "The applicant responded to RAI 4.1-1 by letter RS-14-084 dated March 28, 2014." The RAI number is incorrect; it should be 4.1-2.
65	4.2.5.2	4-32	First paragraph, remove the "-A" designation for WCAP-16143-P.
66	4.3.1	4-39	Last sentence on page, SER states "The applicant updated Tables 4.3.1-2 and 4.3.1-5 to reflect the updated transients based on its response to RAI 4.3.1-1." The tables were not updated because the information was proprietary, as stated in the response to Request 3 of RAI 4.3.1-1 in letter RS-14-266 dated September 11, 2014.
67	4.7.2.2	4-107 to 4-109	The last concluding sentence for each crane discussion implies that specific numbers of load cycles are in an analysis. The following is a mark-up of the last sentence for the Manipulator crane; the others are similar: This is significantly less than the number of load cycles (100,000 - 500,000) considered when determining the allowable stress range (100,000 - 500,000) of permissible load cycles for which they were designed and, therefore, is acceptable.

Exelon Comments on the Safety Evaluation Report with Open Items (SER)			
Where suggested changes to the SER are provided, they are highlighted with bolded italics for inserted text and strikethroughs for deleted text.			
#	Section #	Page #	Comment
68	4.7.2.2	4-107 to 4-109	Discussions on cranes on pages 4-107 through 4-109 - the references for the UFSAR review should include section 9.1.4.2.2 and Table 9.1-7. Not everything mentioned is in 9.1.5.4.1.7.
69	4.7.2.2	4-107	Last sentence of 1st paragraph of section 4.7.2.2 is not clear and confusing. Suggested revision: "...and acceptance criteria are maintained to provide reasonable assurance that the intended functions are maintained for renewal the period of extended operation. "
70	6	6-1	Final paragraph should refer to the GEIS supplements as plural, since separate supplements will be issued for Byron and Braidwood.
71	Appendix A	A-10	Commitment 16: Exelon letter RS-14-169 dated June 16, 2014 modified Commitment to read, "Fire Water System is an existing program that will be enhanced to:" 'system' is currently missing for SER Table A.5
72	Appendix A	A-13	Commitment Item 17: Third line of Commitment statement should say, "...loss of material and cracking ..." The words "and cracking" were added in Exelon letter RS-14-003, dated 1/13/2014.
73	Appendix A	A-19	Commitment Item 23: Sixth line of Commitment statement should say, "...evidence of loss of material and cracking. " The words "and cracking" were added in Exelon letter RS-14-003 dated 1/13/2014.
74	Appendix A	A-19	Commitment Item 23: The first paragraph break shown in LRA Section A.5, Commitment 23 Commitment statement was deleted. It is recommended that the break be re-inserted.
75	Appendix A	A-24	Commitment 30: The citation for Exelon Letter RS-14-183 dated 7/8/2014, is missing from the Source column.

Exelon Comments on the Safety Evaluation Report with Open Items (SER)			
Where suggested changes to the SER are provided, they are highlighted with bolded italics for inserted text and strikethroughs for deleted text.			
#	Section #	Page #	Comment
76	Appendix A	A-24	Commitment 30: Last line of Enhancement 1 should read "Table IWL-2521- 2 ." The "-2" was apparently inadvertently deleted.
77	Appendix A	A-27	Commitment 31: Third line of Enhancement 2 should read, "bolting material, storage , lubricants and sealants..." The term "storage" was added and the term "lubricant" was made plural in Exelon Letter RS-14-052, dated 3/04/2104.
78	Appendix A	Various	Generic comment for Appendix A: The Commitment column of Appendix A of the SER combined information from two columns of LRA Appendix A, Section A.5, License Renewal Commitment List (i.e., the "Program or Topic" and "Commitment" columns). In cases where Exelon committed to continue an existing program (without enhancements), the name of the program was not carried through to the commitment column. For example, the Commitment Column for commitment Item 2 reads "Existing program is credited," but should probably read, "Existing Water Chemistry Program is credited." This issue was observed for Commitments 2, 4, 5, 24, 26 and 32. Reference the Limerick License Renewal SER for an example.
79	Appendix A	Various	The "Legend" for the Notes (Notes 1, 2 and 3) from the LRA Appendix A commitment list that explain the basis for station-specific differences was omitted from SER Appendix A; without the legend, there is no explanation for the meaning of these notes, although the notes are included in the SER Appendix A table. It is recommended that the legend be included within SER Appendix A. Also, the notes do not appear in superscript form.
80	Appendix B	N/A	The following documents are not listed in SER Appendix B. Exelon letter RS-14-078, dated 3/13/2014, "Response to NRC Requests for Additional Information, Set 7, dated February 18, 2014 related to the Braidwood Station, Units 1 and 2 and Byron Station, Units 1 and 2 License Renewal Application." Exelon letter RS-14-091, dated 3/21/2014, "Updated Responses to NRC Requests for Additional Information, Set 3, dated November 25, 2013, related to the Braidwood Station, Units 1 and 2 and Byron Station, Units 1 and 2 License Renewal Application."

Exelon Comments on the Safety Evaluation Report with Open Items (SER)

Where suggested changes to the SER are provided, they are highlighted with ***bolded italics*** for inserted text and ~~strikethroughs~~ for deleted text.

#	Section #	Page #	Comment
			<p>Exelon letter RS-14-092, dated 4/8/2014, "Responses to NRC Requests for Additional Information, Set 15, dated March 11, 2014, related to the Braidwood Station, Units 1 and 2, and Byron Station, Units 1 and 2, License Renewal Application."</p> <p>Exelon letter RS-14-135, dated 5/5/2014, "10 CFR 54.21 (b) Annual Amendment to the Braidwood Station, Units 1 and 2, and Byron Station, Units 1 and 2, License Renewal Application."</p> <p>Exelon letter RS-14-162, dated 5/23/2014, "Corrections to the Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2, License Renewal Application."</p> <p>Exelon letter RS-14-293, dated 10/16/2014, "Response to NRC Request for Additional Information, Set 41, dated October 9, 2014; and, LRA changes resulting from NRC Region III IP-71002 Braidwood Inspection, both related to the Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2, License Renewal Application."</p> <p>Exelon letter RS-14-313, dated 10/31/2014, "Response to NRC Request for Additional Information, Set 42, dated October 10, 2014, related to the Braidwood Station, Units 1 and 2, and Byron Station, Units 1 and 2, License Renewal Application."</p> <p>Exelon letter RS-14-328, dated 11/21/2014, "Response to NRC Request for Additional Information, Set 44, dated November 6, 2014, related to the Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2, License Renewal Application."</p> <p>Exelon letter RS-14-336, dated 11/22/2014, "Supplemental Commitment related to the October 31, 2014 Response to NRC Request for Additional Information, Set 42, dated October 10, 2014, Related to the Braidwood Station, Units 1 and 2, and Byron Station, Units 1 and 2, License Renewal Application."</p> <p>Exelon letter RS-14-331, dated 11/24/2014, "Update Associated with Earlier Responses to Set 29 RAI B.2.1.5-1a, related to the Braidwood Station, Units 1 and 2, and Byron Station, Units 1 and 2, License Renewal Application."</p>

Exelon Comments on the Safety Evaluation Report with Open Items (SER)

Where suggested changes to the SER are provided, they are highlighted with ***bolded italics*** for inserted text and ~~strikethroughs~~ for deleted text.

#	Section #	Page #	Comment
			Exelon letter RS-14-327, dated 11/25/2014, "Response to NRC Request for Additional Information, Set 43, dated October 28, 2014, related to the Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2, License Renewal Application."