

## NRR-PMDAPEm Resource

---

**From:** Ranek, Nancy L.:(GenCo-Nuc) [Nancy.Ranek@exeloncorp.com]  
**Sent:** Friday, February 13, 2015 9:56 AM  
**To:** James, Lois  
**Cc:** Gallagher, Michael P.:(GenCo-Nuc); Fulvio, Albert A.:(GenCo-Nuc); Hufnagel Jr, John G.:(GenCo-Nuc)  
**Subject:** Minor Updates, Corrections, and Clarifications Regarding Draft NUREG-1437, Supplement 54  
**Attachments:** RS-15-072 - Byron-Comments on Draft SEIS.pdf; 2015.02.12  
\_MinorUpdates\_Corrections\_Clarif\_DSEIS\_Supp54.pdf

Hi Lois --

As you know, by letter dated Thursday, February 12, 2015, Exelon submitted comments for the record regarding the Draft NUREG-1437 Supplement 54 for the Byron Station License Renewal. I am attaching that submittal for your information.

With this message, I am also forwarding an informal list of additional minor updates, corrections, and clarifications that NRC may want to consider.

Please call if there are questions.

Thanks.

*Nancy*

*Nancy L. Ranek  
License Renewal Environmental Lead  
Exelon Generation, LLC  
200 Exelon Way, KSA/2-E  
Kennett Square, PA 19348  
Phone: 610-765-5369  
Fax: 610-765-5658  
Email: [nancy.ranek@exeloncorp.com](mailto:nancy.ranek@exeloncorp.com)*

This e-mail and any attachments are confidential, may contain legal, professional or other privileged information, and are intended solely for the addressee. If you are not the intended recipient, do not use the information in this e-mail in any way, delete this e-mail and notify the sender. -EXCIP

**Hearing Identifier:** NRR\_PMDA  
**Email Number:** 1893

**Mail Envelope Properties** (D710612FB24E7D4F9724C8624F1BE5D23FFBD775)

**Subject:** Minor Updates, Corrections, and Clarifications Regarding Draft NUREG-1437, Supplement 54  
**Sent Date:** 2/13/2015 9:55:30 AM  
**Received Date:** 2/13/2015 9:55:44 AM  
**From:** Ranek, Nancy L.:(GenCo-Nuc)  
**Created By:** Nancy.Ranek@exeloncorp.com

**Recipients:**

"Gallagher, Michael P:(GenCo-Nuc)" <michaelp.gallagher@exeloncorp.com>  
Tracking Status: None  
"Fulvio, Albert A:(GenCo-Nuc)" <albert.fulvio@exeloncorp.com>  
Tracking Status: None  
"Hufnagel Jr, John G:(GenCo-Nuc)" <john.hufnagel@exeloncorp.com>  
Tracking Status: None  
"James, Lois" <Lois.James@nrc.gov>  
Tracking Status: None

**Post Office:** exchm-omf-22.exelonds.com

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	1023	2/13/2015 9:55:44 AM
RS-15-072 - Byron-Comments on Draft SEIS.pdf	1951516	
2015.02.12_MinorUpdates_Corrections_Clarif_DSEIS_Supp54.pdf		465371

**Options**

**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**



**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-15-072

February 12, 2015

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

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

**Subject:** Exelon Generation Company, LLC Comments on the Draft Generic Environmental Impact Statement for License Renewal of Nuclear Plants Supplement 54 Regarding Byron Station, Units 1 and 2

**Reference:**

- 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 Brian D. Wittick (NRC) to Michael P. Gallagher (Exelon), "Notice of Availability of the Draft Plant-Specific Supplement 54 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2", dated December 23, 2014

In the Reference 1 letter, Exelon Generation Company, LLC (Exelon) submitted the License Renewal Application (LRA) for the Byron and Braidwood Stations, Units 1 and 2, which contained combined technical information required by 10 CFR 54.21 for both stations and separate site-specific environmental information required by 10 CFR 54.23 for each station.

In the Reference 2 letter, the U.S. Nuclear Regulatory Commission informed Exelon of the availability of the Draft Plant-Specific Supplement 54 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS) Supplement 54 Regarding Byron Station, Units 1 and 2 and requested that comments be provided to the staff by February 20, 2015. A separate plant-specific supplement to the GEIS regarding Braidwood Station, Units 1 and 2 will be issued later.

Exelon has completed its review and is submitting, as an enclosure to this letter, written comments on the Draft Generic Environmental Impact Statement for License Renewal of Nuclear Plants Supplement 54 Regarding Byron Station, Units 1 and 2.

U.S. Nuclear Regulatory Commission  
February 12, 2015  
Page 2

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 Generation Company, LLC Comments on the Draft Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 54 Regarding Byron Station, Units 1 and 2

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

**Exelon Generation Company, LLC Comments on the  
 Draft Generic Environmental Impact Statement for License Renewal of Nuclear Plants,  
 Supplement 54 Regarding Byron Station, Units 1 and 2**

NOTE: Where changes to draft text are suggested, proposed inserts are in ***bolded italic*** font and proposed deletions are in ~~strikethrough~~ font.

Item #	DSEIS Page	Line #	DSEIS Section	Exelon Comment
1	2-1	30 to 31	2.1	<p>As indicated in section 3.1.1 of the Byron Station, Units 1 and 2 (Byron) License Renewal Environmental Report (ER) (p. 3-4) and in section 3.1 of the Draft Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 54 Regarding Byron Station, Units 1 and 2 (DSEIS), Byron Units 1 and 2 entered commercial service on September 16, 1985, and August 21, 1987, respectively, rather than February 1985 and January 1987. Accordingly, change the sentence in lines 30 to 31 on page 2-1 as follows:</p> <p style="padding-left: 40px;">Byron is a two-unit, nuclear-powered steam-electric generating facility that began commercial operation in <del>February</del> <b><i>September</i></b> 1985 (Unit 1) and <del>January</del> <b><i>August</i></b> 1987 (Unit 2).</p>
2	2-1	32 to 33	2.1	<p>Change the sentence in lines 32 to 33 on page 2-1 as follows:</p> <p style="padding-left: 40px;">The nuclear <del>reactor</del> <b><i>reactors</i></b> for <del>each unit is</del> <b><i>both units are</i></b> Westinghouse pressurized-water <del>reactor</del> <b><i>reactors</i></b> (PWRs), <b><i>together</i></b> producing <b><i>an annual average net output of 2,370,394</i></b> megawatts electric (MWe) <b><i>for the facility</i></b> (Exelon 2013a)."</p> <p>This change is appropriate because, as section 7.1 in the Byron ER stated, it was conservatively assumed throughout the Byron ER that during the license renewal terms Byron Units 1 and 2 will operate with measurement uncertainty recapture (MUR) at an approximate annual average net output of 2,394 MWe. Exelon Generation acknowledges that some other sections in Chapter 7 of the ER erroneously stated that the approximate annual average net output for Byron (including MUR) would be 2,370 MWe. However, Exelon has confirmed that impacts reported in the Byron ER from the proposed action (i.e., license renewal) as well as from alternatives were calculated using the correct annual average net output of 2,394 MWe for Byron Station.</p>

Item #	DSEIS Page	Line #	DSEIS Section	Exelon Comment
3	2-4	29	2.2.2	The text in line 29 on page 2-4 states that the text box (on page 2-5) contains 17 alternatives. However, only 16 alternatives are listed. The supercritical pulverized coal alternative described in DSEIS Section 2.3.12 is missing from text box and should be added.
4	2-9	Table 2-1	2.2.2	For completeness, Table 2-1 should be revised by adding a column denoting key characteristics for the "Purchased Power Alternative."
5	2-9 To 2-10	Table 2-1	2.2.2	Exelon Generation recommends that assumptions be better specified and standardized in Chapter 2 of the DSEIS for all alternatives, and that the assumptions be consistently applied to all impact area analyses in Chapter 4 of the DSEIS. Additional comments below (items 21 to 23) provide examples of specific inconsistencies in assumptions made for certain impact area analyses in Chapter 4.
6	2-11	26 to 47	2.2.2.1	The discussion of the New Nuclear Alternative in lines 28 to 47 on page 2-11 should be revised to clarify that assumptions made for this alternative about reuse of features at an existing power plant site, such as transmission lines, are not unique to the Byron site. Also, in lines 37 to 40, clarify whether the estimate of "additional land" needed is based on the Byron site. If so, please explain how this assumption relates to existing power plant sites in other states that will necessarily host the New Nuclear Alternative, unless the ban on new nuclear stations in Illinois is reversed.
7	2-15	15	2.2.2.3	In line 15 on page 2-15, change "49 Lpd" as follows: "49 <b>million</b> Lpd"
8	2-20	15	2.3.3	In line 15 on page 2-20, insert "theoretically" after "could" as follows: "... distances could <b>theoretically</b> function as ..."  <i>See FirstEnergy Nuclear Operating Co. (Davis-Besse Nuclear Power Station), CLI-12-08, 75 NRC 393, 401-02 (2012) (explaining that the use of interconnected wind farms for baseload energy generation is theoretical at best).</i>
9	3-1	9 to 10	3.1	As indicated in section 3.1.1 of the Byron ER (p. 3-4) and in section 3.1 of the DSEIS, Byron Units 1 and 2 entered commercial service on September 16, 1985, and August 21, 1987, respectively, rather than February 1985 and January 1987. Accordingly, change the

Item #	DSEIS Page	Line #	DSEIS Section	Exelon Comment
				sentence in line lines 9 to 10 on page 3-1 as follows: It began commercial operation in <del>February</del> <b>September</b> 1985 (Unit 1) and <del>January</del> <b>August</b> 1987 (Unit 2).
10	3-5	6 to 7	3.1.1	ComEd does not own the Byron Salvage Yard property. Owners of property tracts adjacent to the Byron Station site, including the Byron Salvage Yard property, are listed in the Clean Water Act Section 401 Certification Application for Byron, which was provided to the NRC in the Byron ER, Appendix G. The sentence in lines 6 to 7 on page 3-5 should be corrected accordingly.
11	3-5	21 to 23	3.1.2	The sentence in lines 21 to 23 on page 3-5 should be modified as follows: “At 100 percent reactor power, the combined net electrical output from both Byron units is approximately <del>2,370</del> <b>2,394</b> megawatts electric (Exelon 2013a).”  This change is recommended because, as was noted in a preceding comment (item #2, above, regarding lines 32 to 33 on page 2-1 of the DSEIS), the correct approximate annual average net electrical output (including MUR) for Byron is 2,394 MWe.
12	3-6	Fig 3-4	3.1.3	Figure 3-4 on page 3-6 indicates that steam condensate is recycled to either the reactor or the steam generator. For clarity, the words, “reactor or” should be deleted from the figure because at Byron, which is a PWR, the condensate goes only to the steam generator.
13	3-40	18 to 19	3.6.2	On page 3-40, lines 18 to 19, the text states that Table 3-5 lists 55 state-listed plant species in Ogle and Winnebago counties. However, the title of Table 3-5 indicates that only state-listed plants found in Ogle County are included. Also, only 33 (rather than 55) state-listed species are named in Table 3-5, and one of those ( <i>Cyclonaias tuberculata</i> purple wartyback) is a mussel, not a plant. Accordingly, the text in lines 18 and 19 on page 3-40 should be corrected by changing the number “55” to “32” in line 18 and by deleting the words “and Winnebago County” in line 19.
14	3-41		Table 3-5	In Table 3-5 (State-Listed Plant Species in Ogle County) on page 3-41, the row containing “ <i>Cyclonaias tuberculata</i> ,” which is a mussel rather than a plant, should be deleted.

Item #	DSEIS Page	Line #	DSEIS Section	Exelon Comment
15	3-46		Table 3-9	In Table 3-9 on page 3-46, the scientific name for Blanding's turtle should be changed from " <i>Equisetum pretense</i> [sic]," which is the scientific name for a plant rather than the turtle, to " <i>Emydoidea blandingii</i> ."
16	3-80	7 to 8	3.10.5	<p>In lines 7 to 8 on page 3-80, change the phrase "Exelon's last settlement agreement for Byron was signed on November 8, 2008 ..." as follows:          Exelon's last settlement agreement for Byron was signed <del>effective</del> on November <del>8</del><b>18</b>, 2008 ...</p> <p>This change is suggested because the last settlement agreement for Byron was signed on many different days by many parties, and as a result, it became effective on November 18, 2008 rather than on November 8.</p>
17	3-87	14 to 15	3.11.2	<p>For accuracy in lines 14 to 15 on page 3-87, change the sentence "Exelon's Spill Prevention, Control and Countermeasure plan serves as the site's hazardous waste contingency plan" as follows:  <del>Exelon's Spill Prevention, Control and Countermeasure plan</del> <b>The RCRA Facility Plan For Byron Station</b> serves as the site's hazardous waste contingency plan."</p>
18	3-89	12 to 38	3.11.4	<p>As noted in section 3.1.6.5 in the DSEIS (page 3-15), under the regulations supported by the 2013 Generic Environmental Impact Statement for License Renewal of Nuclear Plants (NUREG-1437, Rev. 1), transmission lines that are within the scope of the NRC's license renewal review for a nuclear power plant are limited to (1) those transmission lines that connect the nuclear plant to the substation where electricity is fed into the regional distribution system and (2) transmission lines that supply power to the nuclear plant from the grid.</p> <p>As was explained in Exelon Generation's response to NRC's post-audit RAIs (HCR-6) (see DSEIS Section 4.18 (References), Exelon 2013b), no offsite Byron transmission lines meet the 2013 regulatory definition for in-scope lines. The electrical connections between the main power transformers and the Byron Switchyard are the only transmission facilities that are in-scope for Byron license renewal under the current regulations. These facilities are all onsite, and no rights-of-way are maintained specifically for the connections.</p> <p>Nevertheless, because the Byron ER was written before</p>

Item #	DSEIS Page	Line #	DSEIS Section	Exelon Comment
				<p>NUREG-1437, Rev. 1 and its accompanying regulations were finalized in 2013, the Byron ER included analyses of induced electric shock potential for offsite transmission lines that were considered in-scope under the 1996 GEIS and its accompanying regulations. Those analyses are described in Section 3.11.4 in the DSEIS (lines 12 to 38 on p. 3-89), but are no longer relevant under the 2013 regulations and NUREG-1437, Rev. 1.</p> <p>Considering the above, Exelon Generation recommends:</p> <ul style="list-style-type: none"> <li>(1) Modify section 3.11.4 (lines 12 to 32 on page 3-89) to clarify that no offsite transmission lines are within the current scope of the NRC's license renewal review for Byron; and</li> <li>(2) Delete the entire paragraph in lines 33 to 38 on page 3-89 because the information is not relevant to any transmission lines that are in-scope for Byron license renewal under current regulations.</li> </ul>
19	3-89	39 to 44	3.11.4	<p>The information in lines 39 to 44 on page 3-89 concerning software and models used to calculate the potential for induced shock effects is not correct for Byron and should be deleted. It is not necessary to correct the information because, as noted in a preceding comment (item # 18, above) regarding lines 12 to 38 on page 3-89, section 3.11.4 should be revised to clarify that no offsite transmission lines are within the current scope of the NRC's license renewal review for Byron.</p>
20	3-90	2 to 3	3.11.5	<p>Delete the sentence in lines 2 to 3 on page 3-90 because section 3.11.5 of the DSEIS addresses only physical occupational hazards and does not address electric shock hazards.</p>
21	4-48	2 to 5	4.9.2	<p>Section 4.9.2 (lines 2 to 5 on page 4-48) states that a separate environmental review would be needed to assess decommissioning impacts on cultural resources for the No Action alternative to Byron license renewal. Exelon Generation notes that such an environmental review has been completed and recommends that Section 4.9.2 be revised to incorporate by reference the conclusions from NUREG-0586 (NRC 2002, GEIS on Decommissioning of Nuclear Facilities). NUREG-0586 concludes that for all nuclear plant sites at which decommissioning will not require disturbing lands beyond existing site boundaries, impacts to cultural</p>

Item #	DSEIS Page	Line #	DSEIS Section	Exelon Comment
				resources would be SMALL. For nuclear plants where decommissioning would disturb land beyond existing site boundaries, impacts would have to be assessed on a case-by-case basis and might be SMALL, MODERATE or LARGE. Exelon Generation submits that the existing Byron site is sufficiently large that explicit justification is warranted before concluding in Section 4.9.2 that the generic finding in NUREG-0586 of SMALL impacts to cultural resources from decommissioning would not apply to Byron.
22	4-48 and 4-49		4.9.4 and 4.9.5	The IGCC impact to cultural resources is characterized in Section 4.9.4 as SMALL. The NGCC impact is characterized in Section 4.9.5 as SMALL to MODERATE. Each plant is assumed to be sited on the approximately 400 acres of undisturbed land on the Byron site, and the difference between the projects in impacts to cultural resources is attributed to the new gas pipeline that would need to be constructed for the NGCC. However, given that the IGCC alternative requires 2,000 acres and the NGCC alternative requires 94 acres including pipelines (see Table 2-1 on page 2-10), the conclusions are inconsistent. There is not that much difference in the uncertainty of the cultural resource richness of the new pipeline compared to undisturbed area of the existing site, and the IGCC would consume more undisturbed acres than the NGCC. Therefore, Exelon Generation recommends reconsideration of the impact findings in sections 4.9.4 and 4.9.5 for the IGCC and NGCC alternatives.
23	4-50	6 to 23	4.9.7	The impact from the Purchased Power alternative to cultural resources is described in Section 4.9.7 (page 4-50, lines 6 to 23) as SMALL to LARGE. The description of the activities under this alternative is inconsistent with the description given in Section 2.2.2.5. According to section 2.2.2.5, "facilities from which power would be purchased would not likely be constructed solely to replace Byron" although "[p]urchased power may ... require new transmission lines." Section 2.2.2.5 further states, "Impacts to other resource areas [such as cultural resources] from the operation of existing power plant facilities would likely be less than those for new plants because existing facilities would not require new construction." Given that the New Nuclear alternative, which requires construction of new facilities, was evaluated to have SMALL impacts on cultural resources

Item #	DSEIS Page	Line #	DSEIS Section	Exelon Comment
				<p>(see section 4.9.3, page 4-48), it is difficult to understand the basis for NRC’s conclusion that Purchased Power, for which no construction is likely except possibly transmission lines, would have SMALL to LARGE impacts. Therefore, Exelon Generation recommends reconsideration of the impact findings in section 4.9.7 for the Purchased Power alternative taking into account the probability that new generating facilities would not be needed.</p>
24	4-57 and 4-58		4.10.7	<p>The description of the Purchased Power Alternative in Section 4.10.7 is different from that in Section 2.2.2.5. According to section 2.2.2.5 (page 2-18), “facilities from which power would be purchased would not likely be constructed solely to replace Byron.” Yet, Section 4.10.7 bases its conclusions about impacts to socioeconomics and transportation resources on the possibility that new electrical power generating facilities would be needed to supply purchased power. Therefore, Exelon Generation recommends reconsideration of the impact findings in section 4.10.7 for the Purchased Power alternative taking into account the probability that new generating facilities would not be needed.</p>
25	4-61	38 to 41	4.11.1.1	<p>The text in lines 38 to 41 on page 4-61 describes the analyses of induced electric shock potential that Exelon Generation performed and included in the Byron ER before NUREG-1437, Rev. 1 and its accompanying regulations were finalized in 2013. Exelon Generation recommends that this information be deleted from page 4-61 because it is no longer relevant.</p> <p>As the DSEIS notes in section 3.1.6.5 (page 3-15) and Exelon Generation's response to NRC's post-audit RAIs explains (HCR-6) (see DSEIS Section 4.18 [References], Exelon 2013b), no offsite Byron transmission lines meet the 2013 regulatory definition for in-scope lines. The electrical connections between the main power transformers and the Byron switchyard are the only transmission facilities that are in-scope for Byron license renewal under current regulations. These facilities are all onsite, and no rights-of-way are maintained specifically for the connections. Electrical shock hazards are controlled on the Byron site in accordance with applicable industrial safety standards, and potentially affected workers comply with electrical safety procedures when working near energized</p>

Item #	DSEIS Page	Line #	DSEIS Section	Exelon Comment
				equipment. Accordingly, onsite electrical shock potential is of small significance to public health, and analyses to verify conformance to National Electrical Safety Code criteria are not warranted.
26	4-61	42 to 45	4.11.1.1	The text in lines 42 to 45 on page 4-61 should be modified to reflect appropriate findings regarding the transmission lines for Byron that are currently in-scope, as described in the preceding comment regarding p. 4-61, lines 38 to 41.
27	F-3	Note	Table F-1	<p>The "Source" for the results presented in the Table F-1 is shown as being the Byron ER (Exelon 2013b). While this is true for the Unit 1 values, the Unit 2 values are from Exelon Generation's Response (dated February 4, 2014) to NRC requests for additional information (dated January 6, 2014) for the severe accident mitigation alternatives review. Accordingly, the Source should be revised as follows:</p> <p style="text-align: center;">Source: Exelon 2013(b) <b>[Unit 1]</b>  <b>Exelon 2014 [Unit 2]</b></p> <p>The full citation for Exelon 2014 is listed in Section 4.18 of the DSEIS.</p>
28	F-29	SAMA 1, modeling assumptions	Table F-5	<p>The text in Table F-5 describing the modeling assumptions for SAMA 1 should be modified to indicate that a new event was added to the model to represent the diesel-driven SX pump, and it was assigned a failure probability of 1.0E-02, as follows:</p> <p style="text-align: center;"><del>Reduce the probability of</del>  <b>Add new event representing</b>      diesel-driven SX pump <b>with</b> failure  <del>probability of</del> <b>1×10<sup>-2</sup>.</b></p>
29	F-30	SAMA 11, modeling assumptions	Table F-5	The text in Table F-5 describing the modeling assumptions for SAMA 11 should be modified to indicate that the RCP Seal LOCA probability was also reduced by a factor of 1000 to account for "no-leak" seals.
30	F-32	SAMA 21, modeling assumptions	Table F-5	<p>The text in Table F-5 describing the modeling assumptions for SAMA 21 should be modified as follows:</p> <p style="text-align: center;">Completely eliminates all risk from the ISLOCA events occurring in the RHR <del>discharge</del> <b>suction</b> lines.</p>

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	<b>Page</b>	<b>Line</b>	<b>Section</b>	<b>Comment</b>
1	xxi	11	Executive Summary	In the Executive Summary, on page xxi in line 11, add "Revision 1" after the words "(GEIS) for License Renewal of Nuclear Plants."
2	xxiii		Executive Summary	For consistency with 10 CFR Part 51, Table B-1, insert the following parenthetical into the Executive Summary on page xxiii after the words "Water use conflicts with aquatic resources": "(plants with cooling ponds or cooling towers using makeup water from a river)" to match,
3	xxiii		Executive Summary	For consistency with 10 CFR Part 51, Table B-1, edit the text in the Executive Summary on page xxiii as follows: "Threatened, or endangered, <b><i>and protected</i></b> species <b><i>and essential fish habitat</i></b> "
4	xxvii	21 to 22	Abbreviations & Acronyms	The two definitions for "APE" provided on lines 21 to 22 on page xxvii apply only to "APE" as used in the DSEIS Appendix F. In the main body of the DSEIS, "APE" is used as an acronym for "area of potential effect" as applicable to historic and archaeological resources (see pp. 3-65, 4-46, and 4-106). The additional meaning for APE should be added to the list of Abbreviations & Acronyms.
5	1-1	19 to 20	1.1	In lines 19 to 20 on page 1-1: <ul style="list-style-type: none"> <li>• Add a space between "NRP-37" and the word "and".</li> <li>• License[s] for an additional 20 years – license should be plural.</li> </ul>
6	1-7	20 to 21	1.10	In lines 20 to 21 on page 1-7, add the word "applicable" as follows: "Exelon is responsible for complying with all <b><i>applicable</i></b> NRC regulations and other applicable Federal, state and local requirements."
7	2-2	16 to 18	2.1.2	The following sentence is redundant to information earlier in the paragraph. Suggest deleting: "Examples of these activities include, but are not limited to, replacement of boiling-water reactor recirculation piping and pressurized water reactor steam generators."
8	2-4	29	2.2.2	Change "at the end of this section" to "in section 2.3"
9	2-5	28	2.2.2	As written, the sentence in line 28 on page 2-5 suggests that only ComEd customers receive electricity from Byron. Consider changing the sentence as follows: "Byron is owned and operated by Exelon and

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	Page	Line	Section	Comment
				provides electricity through Commonwealth Edison <del>to the ROI through transmission lines owned by Commonwealth Edison</del> .
10	2-6	11	2.2.2	In line 11 on page 2-6, hyphenate the words "megawatt hours" as follows: "megawatt-hours"
11	2-6	2	2.2.2	In line 2 on page 2-6, consider changing the phrase "... procured from adjoining states ..." as follows: "... procured from <b><i>Illinois or</i></b> adjoining states ...
12	2-7	31 to 33	2.2.2	In lines 31 to 33 on page 2-7, "clean coal technology" is mentioned twice. Delete the duplicate.
13	2-11	35	2.2.2.1	A short citation to "NRC 2011" is provided in line 35 on page 2-11, but no corresponding full citation is provided on page 4-126 in section 4.18 (References).
14	2-12	23 to 24	2.2.2.2	In lines 23 to 24 on page 2-12, consider inserting text as follows: "The technology is cleaner than conventional pulverized coal plants because <b><i>some of the</i></b> major pollutants are removed from the gas stream before combustion."
15	2-12	46	2.2.2.2	In line 46 on page 2-12, consider inserting text as follows: "The IGCC plant will reduce carbon emissions per MWh by nearly half <b><i>compared to conventional coal-fired power plants</i></b> (Duke Energy 2013)."
16	2-15	23	2.2.2.4	Delete the words "the environmental impacts of" on line 23
17	2-16 and 2-17	45 to 49 and 1 to 2	2.2.2.4	In lines 45 to 49 on page 2-16 and lines 1 to 2 on page 2-17, it is not clear how the information is pertinent to the proposed wind alternative, which does not include interconnecting of wind farms as a firming capacity method.
18	2-18	30 to 34	2.2.2.5	The discussion of impacts in lines 30 to 34 on page 2-18 seems out of place. Consider moving it to Chapter 4.
19	2-20	21 to 22	2.3.3	In lines 21 to 22 on page 2-20, consider changing the sentence as follows: "The NRC staff <del>described</del> evaluated such a possible combination <b><i>alternative</i></b> as described in Section 2.2.2.4."

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	<b>Page</b>	<b>Line</b>	<b>Section</b>	<b>Comment</b>
20	2-21	18 to 19	2.3.3.3	In lines 18 to 19 on page 2-21, consider changing the sentence as follows: "The NRC staff <del>described</del> <del>evaluated</del> such a possible combination <del>alternatives</del> as described in Section 2.2.2.4."
21	2-22	36	2.3.6	In line 36 on page 2-22, correct the name "Electric Power Resource Institute (EPRI)" as follows: "Electric Power <del>Resource</del> <b>Research</b> Institute (EPRI)".
22	2-27	Table 2-2	Note 9	In Note 9 for Table 2-2 on page 2-27, change the 1st sentence as follows: "The Purchased Power Alternative could <del>be</del> disproportionately affect low-income populations <del>by</del> <b>because of</b> increased utility bills <del>because of</del> <b>resulting from</b> the cost of purchased power."
23	2-27	Table 2-2	Note 3	Modify Note 3 for Table 2-2 on page 2-27 by replacing the words "these populations" with the words "minority and low-income populations". The revised text should read: "Continued operation of Byron would not have disproportionately high and adverse human health and environmental effects on <del>these</del> <b>minority and low-income</b> populations."
24	3-1	9	3.1	In line 9 on page 3-1, change "Ogle, Illinois" to "Ogle County, Illinois".
25	3-5	1 to 2	3.1.1	To ensure clarity in lines 1 to 2 on page 3-5, consider editing the phrase "(Byron Salvage Site; not contaminated by activities at Byron)" as follows: "... (Byron Salvage Site; not contaminated by activities <del>at</del> <b>related to the construction and operation of Byron Station</b> ) ..."
26	3-8	42 to 44	3.1.3.3	In lines 42 to 44 on page 3-8, the text indicates that the essential service water system includes two 12-inch pipelines from the river screen house that are dedicated to providing a source of backup makeup water. Consider whether, for completeness, the additional emergency backup water source for makeup to the essential service water from the two on-site deep wells should also be mentioned.
27	3-10	10 to 11	3.1.4.1	Change the phrase "... these wastes are either released under controlled conditions via the cooling water system or ..." as follows: "... these wastes are <del>either</del> <b>reused</b> , released under controlled conditions via the cooling water system, or..."

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	<b>Page</b>	<b>Line</b>	<b>Section</b>	<b>Comment</b>
28	3-13	30	3.1.4.3	In line 30 on page 3-13, change "would" to "will."
29	3-13	16 to 18	3.1.4.3	Based on the Byron UFSAR section 11.4.2.4, p. 11.4-11, modify the sentence in lines 16 to 18 on page 3-13 as follows: "Byron has <del>a</del> <b>drumming and storage</b> areas <del>where</del> <b>two within which a total of four</b> remotely operated cranes ( <b>two per unit</b> ) are used to <del>transport and</del> position <del>the</del> <b>stored</b> drums <del>while in storage</del> , as well as transport them to trucks for offsite disposal."
30	3-14	40	3.1.5	In line 40 on page 3-14, replace "1420.104(a)" with "Sections 1420 through 1422 and 1450" because § 1420.104(a) addresses only the ban on disposal of PIMW in Illinois landfills, while taken together, Sections 1420 through 1422 and 1450 address requirements applicable to transportation and disposal of PIMW.
31	3-15	16 to 18	3.1.6.2	Consider revising the sentence on lines 16 to 18 as follows: "Fuel is supplied to each <b>standby diesel generator</b> via the Fuel Oil System, which contains various tanks and fuel transfer pumps <del>that</del> <b>sized to</b> provide fuel to each engine for a minimum of 7 days <del>of</del> <b>during post-accident</b> operation without offsite support."
32	3-15	37	3.1.6.5	Revise the phrase "are with the scope of the NRC's license renewal review" in line 37 on page 3-15 as follows: "... are <del>with</del> <b>within</b> the scope of the NRC's license renewal <b>environmental</b> review".
33	3-15	43	3.1.6.5	In line 43 on page 3-15, change the word "systems" to "system" and change the word "connect" to "connects".
34	3-15	18 to 20	3.1.6.2	Because there are smaller tanks within the Fuel Oil System for equipment other than the standby diesel generators, the sentence in lines 18 to 20 on page 3-15 would be more accurate if changed as follows: "Byron's Fuel Oil System <del>consists of</del> <b>includes</b> four 25,000-gallon (gal) diesel oil storage tanks <del>dedicated to</del> <b>for the two</b> Unit 1 <b>standby diesel generators</b> and two 50,000-gal storage tanks <del>dedicated to</del> <b>for the two</b> Unit 2 <b>standby diesel generators</b> (2013d)."
35	3-16	1	3.1.6.5	In line 1 on page 3-16, change the phrase "Both switchyards" to "The switchyard"
36	3-17	19	3.2.1	In line 19 on page 3-17, change "Byron" to "Byron."

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	<b>Page</b>	<b>Line</b>	<b>Section</b>	<b>Comment</b>
37	3-17	20 to 21	3.2.1	The sentence in lines 20 to 21 on page 3-17 could be misinterpreted to mean that Weld Memorial Park is on the Rock River. Instead, it is on Black Walnut Creek. Consider deleting the phrase "on the Rock River," as follows: "These parks offer such recreational activities to the public as camping, picnicking, hiking, fishing, and boating <del>on the Rock River.</del> "
38	3-17	40	3.2.1	Delete "highways" in line 40 on page 3-17.
39	3-17	46 to 48	3.2.1	The sentence in lines 46 to 48 on page 3-17 is very awkward. Consider dividing it into at least two separate sentences as follows: "The Oregon Dam, 4 mi (6.4 km) downstream, creates the pool from which Byron draws its circulating water makeup and <del>to which discharges its blowdown is discharged.</del> <b><i>to and. The Dam also</i></b> controls the water level <b><i>in the pool at the intake.</i></b> "
40	3-18	33	3.3.1	Change "ft" to "mi" in line 33 on page 3-18.
41	3-18	14	3.2.2	In line 14 on page 3-18, insert the word "above" before the phrase "mean sea level."
42	3-19	13	3.3.1	Because, as written, the text does not indicate when annual average temperature measurements were taken, consider specifying the beginning and ending years that define the "62-year period" mentioned in line 13 on page 3-19..
43	3-19	25	3.3.1	Because, as written, the text does not indicate when annual precipitation measurements were taken, consider specifying the beginning and ending years that define the "30-year period" mentioned in line 25 on page 3-19..
44	3-20	38 to 40	3.3.2	In line 39 on page 3-20, the phrase "and there are no reported violations since October 1, 2011" is unclear because it suggests that a violation of the Byron FESOP permit limitations may have occurred on October 1, 2011. Consider revising the sentence in lines 38 to 40, as follows: "Byron has been in compliance with the requirements set forth in the air permit, and <del>there are</del> <b><i>area review of information for a period beginning October 1, 2011 indicates</i></b> no reported violations <del>since October 1, 2011.</del> "

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	Page	Line	Section	Comment
45	3-20	23 to 27	3.3.2	The sentence on lines 23 to 25 on page 3-20 states that McHenry County and Kane County are nonattainment areas for PM2.5. The next sentence on lines 26 and 27 on page 3-20 states that McHenry County and Kane County are "also designated maintenance areas for the PM2.5 standard." As such, the two sentences appear to contradict one another because the counties cannot simultaneously be both "nonattainment" and "maintenance" areas for the same pollutant. Consider better clarifying the attainment status of McHenry and Kane Counties.
46	3-22	31	3.3.3	In line 31 on page 3-22, insert a space between the comma in the term "(corona discharge)," and the words "relief valve" as follows: "... (corona discharge), relief valves, ..."
47	3-23	1	3.3.3	In line 1 on page 3-23, replace the word "chipping" with the word "chirping."
48	3-23	5	3.3	In line 5 on page 3-23, change "(9 km)" to "(1 km)" because 0.6 mi = 0.966 km
49	3-23	26 to 27	3.4.1	The sentence in lines 26 to 27 on page 3-23 is also used (verbatim) in Sections 3.2 and 3.3, and in each case a different source document is cited. Consider citing the same source document in all cases.
50	3-27	7	3.5.1	Citation in line 7 on page 3-27 should read "(USGS 2013d, 2013e)" rather than "(USGS 2013d, 20113e)."
51	3-28	25 to 26	3.5.1.2	For clarity, consider revising the sentence in lines 25 to 26 on page 3-28 as follows: " <del>This</del> <b><i>The motivation for this</i></b> operational limit is <del>prescribed by</del> <b><i>documented in</i></b> Byron's UFSAR.  The change is suggested because the Byron UFSAR Section 2.4.11.5 (PDF page 1721; UFSAR page 2.4-20) states that "The maximum water requirement for the plant is 107 cfs." The Byron UFSAR Section 10.4.5 (PDF page 6502; UFSAR page 10.4-8) further states that if consumptive demand at full load exceeds 10 % of the river flow, then net withdrawal will be maintained at a level acceptable to the Illinois Department of Conservation, and if necessary, plant power level will be reduced until river flow increases. There is no mention in the Byron UFSAR, however, of limiting withdrawal to 125 cfs.
52	3-29	27	3.5.1.3	Delete the second period at the end of the sentence

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	Page	Line	Section	Comment
				in line 27 on page 3-29.
53	3-29	27	3.5.1.3	For clarity, consider inserting the words “not associated with Byron Station” after the words “various upstream sources” in line 27 on page 3-29.
54	3-32	28	3.5.2	Change the phrase "within and near the Byron" in line 28 on page 3-32 by deleting the word "the" between the word "near" and the word "Byron" as follows: “... within and near <del>the</del> Byron.”
55	3-36	4	3.5.2.2	Change the phrase "to the southwest of the Byron" in line 3 on page 3-36 by deleting the word "the" between the words "of" and "Byron" as follows: “... to the southwest of <del>the</del> Byron.”
56	3-36	44	3.5.2.3	To clarify the shift from discussing groundwater contamination from the Byron Salvage Yard Superfund Site to discussing groundwater contamination from the Byron Station intake/discharge pipeline, consider replacing the words "the plant" in line 44 on page 3-36 with the words "Byron Station," as follows: “... pipeline that runs from <del>the plant</del> <b>Byron Station</b> to the Rock River.”
57	3-39	9	3.6.2	Should be <i>Phleum pratense</i> , not " <i>pretense</i> "
58	3-39	25	3.6.2	Should be <i>Q. palustris</i> , not " <i>palustria</i> "
59	3-39	27	3.6.2	Should be <i>C. ovata</i> , not " <i>ovate</i> "
60	3-41		Table 3-5	Should be <i>Equisetum pratense</i> , not " <i>pretense</i> "
61	3-41		Table 3-5	Should be <i>Luzula acuminata</i> , not " <i>acuminate</i> "
62	3-45		Table 3-8	Should be <i>Myotis sodalis</i> , not " <i>sodalist</i> "
63	3-47	14	3.6.4	Suggest using the word “restoration” rather than “addition” on line 14 on page 3-47, as follows: “... and the possible <del>addition</del> <b>restoration</b> of prairie plant habitat on the Byron property ...”
64	3-47	17 to 18	3.7	In lines 17 to 18 on page 3-47, consider revising the phrase "from which the facility withdrawals and discharges cooling system make-up and blowdown water" as follows: “... from which the facility <del>withdrawals</del> <b>withdraws</b> and discharges cooling system make-up <b>water</b> and <b>to which it discharges</b> blowdown water.”
65	3-54		Table 3-11	The scientific name for White sucker should be <i>Catostomus commersoni</i> , not " <i>Catostomas</i> "

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	Page	Line	Section	Comment
66	3-54		Table 3-11	In row 20 of Table 3-11 on page 3-54, " <i>Notropis spilopterus</i> " is listed as the scientific name for "spottail shiner." This is incorrect because the scientific name for spottail shiner is actually <i>Notropis hudsonius</i> (see DSEIS Table 3-12, p. 3-56). It appears that the DSEIS author relied on the Byron Operating License Environmental Report (ComEd 1981) for the entry of " <i>Notropis spilopterus</i> " in Table 3-11 as the scientific name for spottail shiner. However, the Byron Operating License Environmental Report was in error. In 1981, <i>Notropis spilopterus</i> was the scientific name for the spotfin shiner (rather than spottail shiner). Furthermore, the spotfin shiner was reclassified and renamed <i>Cyprinella spiloptera</i> circa 1990. So, it is now impossible to tell which species was actually collected at that time. Consider either deleting the erroneous row 20 from Table 3-11, or adding an explanatory footnote.
67	3-58		Table 3-13	Several of the names in the "Common Name" column are actually scientific names. Consider correcting this as follows: <ul style="list-style-type: none"> <li>• Change "Ictiobinae spp." to "carpsuckers and buffaloes."</li> <li>• Change "Notropis spp." to "shiners."</li> <li>• Change "Lepomids" to either "sunfish" (a large group that also includes black bass and crappies) or "bream."</li> </ul>
68	3-64	40 to 42	3.8.1	The text in lines 40 to 42 on page 3-64 states that "As discussed in Section 3.7, the Rock River does not contain marine or anadromous fish species." However, Section 3.7 contains no such discussion, although a reader knowledgeable about the distribution and life histories of all the fish species listed in Tables 3-11, 3-12, and 3-13 might infer that no marine/anadromous species are present. To improve clarity, consider explicitly stating in Section 3.7 that the data in Tables 3-11, 3-12, and 3-13 demonstrate that no marine/anadromous species are present in the Rock River.
69	3-67	14 to 15	3.9.1	In lines 14 to 15 on page 3-67, consider deleting from the PDF file for the DSEIS the electronic hyperlinks to external web sites for "Ioway" and "Mascouten."
70	3-68	1 to 2	3.9.2	In lines 1 to 2 on page 3-68, consider explaining why the cultural resource sites identified in Table 3-15 are

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	Page	Line	Section	Comment
				ineligible for the NRHP. This could be accomplished by changing the sentence in lines 1 to 2 as follows: "All sites are ineligible for the NRHP <b><i>because</i></b> ..."
71	3-86	23 to 24	3.11.1	In lines 23 to 24 on page 3-86, change the word "environmental" to "environment" as follows: "... in the <del>environmental</del> that may ...".
72	3-87	13	3.11.2	In line 13 on page 3-87, change the phrase "site-specific chemical spill" as follows: "site-specific <b><i>oil and</i></b> chemical spill".
73	3-87	20	3.11.3	On page 3-87, delete the words "Radioactive Waste" from the beginning of line 20, as follows: " <del>Radioactive Waste</del> Nuclear plants that have ..."
74	3-90	22	3.12	On page 3-90, delete the words "Environmental Justice" from the beginning of line 22, as follows: " <del>Environmental Justice</del> Under Executive Order (EO) 12898 ..."
75	3-91	31 to 32	3.12.1	In lines 31 to 32 on page 3-91, consider revising the words as follows: "... composed 23.7 percent of the total <del>two</del> <b><i>three</i></b> -county population (see Table <del>3-193-22</del> )."
76	3-102	29 to 34	3.14	The version of the Byron Storm Water Pollution Prevention Plan provided to the NRC in response to RAI WR-SW-1b [Exelon letter RS-13-282 to NRC, 12/19/2013] is dated January 2013 (rather than June 2003). The citation for this document provided in lines 29 to 34 on page 3-102 (i.e., Exelon 2003) should be corrected accordingly.
77	4-14	15 to 16	4.3.5.1	Revise the sentence in lines 5 to 6 on page 4-14 to indicate that Illinois is included among the states covered by CAIR, as follows: "The CAIR requires 27 states (including <b><i>Illinois</i></b> , Indiana, Iowa, Michigan, Missouri, Kentucky, and Wisconsin) to improve air quality, ..."
78	4-15	41	4.3.5.2	In line 41 on page 4-16, delete the word "construction" as follows: "The NRC Staff concludes that <del>construction</del> operation-related noise impacts from the NGCC alternative would be SMALL."

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	<b>Page</b>	<b>Line</b>	<b>Section</b>	<b>Comment</b>
79	4-15 and 4-16	45 and 1, 4, & 9	4.3.6	For consistency among the discussions of generating capacity for all alternatives, consider using "MWe" instead of "MW" in line 45 on page 4-15 and lines 1, 4 and 9 on page 4-16, when discussing the generating capacity of the proposed components of the Combination Alternative.
80	4-16	4	4.3.6	In line 4 on page 4-16, revise the phrase "The NGCC alternative" as follows: "The NGCC <b><i>portion of the combination</i></b> alternative".
81	4-16	5	4.3.6	In line 5 on page 4-16, revise the phrase "that sites would be located at" as follows: "... that <del>sites</del> <b><i>the new unit</i></b> would be located at ..."
82	4-16	14	4.3.6.1	In line 14 on page 4-16, delete the word "that" as follows: "... approximately 10 percent <del>that</del> of the NGCC alternative"
83	4-17	7	4.3.6.1	In line 7 on page 4-17, revise the phrase "the NGCC alternative" as follows: "... the NGCC <b><i>portion of the combination</i></b> alternative"
84	4-17	6	4.3.6.1	On p. 4-16, line 14, the NGCC component of the combination alternative is characterized as having 10 percent of the electrical output of the NGCC alternative, rather than 13 percent as indicated here (on page 4-17, line 6). Please resolve the inconsistency.
85	4-17	9 to 10	4.3.6.1	The possibility that the NGCC component of the Combination Alternative would have multiple units and multiple sites is introduced on page 4-17 in lines 9 to 10. In contrast, the text on page 4-16, line 4, section 4.3.6.1, states that the NGCC component of the Combination Alternative would be one 267-MW unit. Please resolve the inconsistency.
86	4-18	23	4.3.6.2	In line 23 on page 4-18, consider deleting the redundant sentence, as follows: " <del>Minor offsite noise sources could be pipeline compressor stations.</del> "
87	4-18	45	4.3.6.2	In line 45 on page 4-18, solar tracking devices are included in a list of potential noise sources for the solar PV portion of the combination alternative. However, one advantage of PV solar compared to other solar technologies is that direct exposure to sunlight is not necessary for the PV panels to

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	Page	Line	Section	Comment
				function, which eliminates the need for solar tracking. Accordingly, consider deleting solar tracking devices as a potential source of noise in line 45 on page 4-18.
88	4-20	17	4.3.8	In line 17 on page 4-20, revise the phrase "... and expected to be SMALL" as follows: "... and <b><i>are</i></b> expected to be SMALL".
89	4-20	17 to 18	4.3.8	In lines 17 to 18 on page 4-20, revise the phrase "... from operation of the IGCC, combination, and purchased power are expected ..." as follows: "... from operation of the IGCC, combination, and purchased power <b><i>alternatives</i></b> are expected ..."
90	4-23	Table 4-5	col 1/row 3	In Table 4-5, column 1 and row 3 on page 4-23, Replace the word "patters" with the word "patterns".
91	4-23	2	4.5.1.1	In line 2 on page 4-23, consider revising the subsection title as follows for better consistency with other subsection titles within section 4.5.1.1: "Generic Surface Water Resources <b><i>Issues</i></b> "
92	4-25	4 to 5	4.5.1.2	On page 4-25, revise the subtitle on lines 4 to 5 to match the words in Table 4-6, col 1, row 4, as follows: "Groundwater Use Conflicts (Plants <del>Using</del> <b><i>With Closed-cycle</i></b> Cooling Towers or <del>Cooling Ponds and Withdrawing</del> <b><i>That Withdraw</i></b> Makeup Water From a Small River)"
93	4-27	11	4.5.3.1	In line 11 on page 4-27, revise the wording as follows: "NRC staff expects that <del>that</del> <b><i>the</i></b> State would ..."  In addition, since the new nuclear alternative is prohibited in Illinois, consider providing a basis for the expectation that the host state for the new nuclear plant would impose limits on surface water withdrawals similar to those imposed by Illinois on the Byron Station.
94	4-27	45	4.5.4.1	In line 45 on page 4-27, consider changing "use of the Byron site" to "use of an existing power plant site".
95	4-28	35	4.5.5.1	In line 35 on page 4-28, consider changing "use of the Byron site" to "use of an existing power plant site".

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	<b>Page</b>	<b>Line</b>	<b>Section</b>	<b>Comment</b>
96	4-29	24	4.5.6.1	In line 24 on page 4-29, consider replacing the words "alternative sites" with the words "another existing power station site".
97	4-30	35	4.5.7.2	In line 35 on page 4-30, consider replacing the words "for the other alternatives" with the words "for the proposed action as well as the other alternatives."
98	4-32	15 to 26	4.6.1.2	Since no other Chapter 4 author/section (excluding Cumulative Impacts, Section 4.16) discusses steam generator replacement impacts, consider deleting the text in lines 15 to 26 on page 4-32. Doing so would provide an approach to the impact assessment in section 4.6.1.2 that is more consistent with other sections.
99	4-38	16 to 18	4.7.1.2	Consider changing the sentence in lines 16 to 18 on page 4-38 as follows: "Thus Byron <del>uses</del> <b>would have used</b> between 0.7 and 1.7 percent of the Rock River's flow each year for the past 12 years, under the conservative assumption that Byron was operating a 100 percent power at all times."
100	4-38	24 to 26	4.7.1.2	Consider changing the sentence in lines 24 to 26 on page 4-38 to add mussels, as follows: "The fish <b>and mussel</b> species described in Section 3.7...do not appear to be affected ..."
101	4-41	18	4.8.1	In line 18 on page 4-41, change the text as follows: "Appendix <del>D-1</del> <b>C.1</b> contains information on the NRC staff's section 7 ..."
102	4-50	25 to 32	4.10	The introductory paragraph to Section 4.10 ("Socioeconomics") in lines 25 to 32 on page 4-50 is very general and seems out of place. Consider deleting the entire paragraph and replacing it with the following: " <b><i>This section describes the potential impacts of the proposed action (license renewal) and alternatives to the proposed action on socioeconomic NEPA issues.</i></b> "
103	4-53	25	4.10.3.1	Because the reference document (NRC 2008) was not authored by Exelon and does not address an Exelon facility, the sentence in line 25 on page 4-53 should be revised as follows: " <del>Exelon</del> <b>It has been estimated that</b> the construction workforce <b>for a new 2-unit nuclear plant</b> would peak at 3,500 workers (NRC 2008)."

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	<b>Page</b>	<b>Line</b>	<b>Section</b>	<b>Comment</b>
104	4-53	22 to 24	4.10.3.2	Consider including refueling outage workforce increases among the causes of transportation impacts listed in lines 22 to 24 on page 4-53.
105	4-54	22 to 23	4.10.4.2	In lines 22 to 23 on page 4-54, change the text as follows: "... the four-unit IGCC power <del>plants</del> <b><i>plant</i></b> would consist of ..."
106	4-63	41	4.11.1.2	Because Section 5.3 does not discuss the results of the Staff's SAMA review, delete the sentence in line 41 on page 4-63, as follows: " <del>The results of the review are discussed in Section 5.3.</del> "
107	4-69	10	4.11.3	In line 10 on page 4-69, change the phrase "two new nuclear power plants" as follows: "... two new nuclear <del>power plants</del> <b><i>units</i></b> ..."
108	4-69	11	4.11.3	In line 11 on page 4-69, consider changing the phrase "to those of the existing Byron" as follows: "... to those of <b><i>operating</i></b> the <b><i>two</i></b> existing Byron <b><i>units.</i></b> "
109	4-69	14	4.11.3	In line 14 on page 4-69, change the words "the operation of two new nuclear plants would be SMALL" as follows: "... the operation of two new nuclear <del>plants</del> <b><i>units</i></b> would be SMALL."
110	4-69	17	4.11.4	In line 17 on page 4-69, verify that the phrase "combustion-based renewable energy" is correct. Other than possibly biomass combustion, Exelon is unaware of any renewable energy sources that are combustion-based, and section 4.11.4 does not address a biomass alternative.
111	4-69	21	4.11.4	For consistency with the assumption throughout the other sections in Chapter 4 that new construction would be at an existing power plant site that might be either nuclear or coal-fired, consider replacing the words "existing nuclear plant" in line 21 on page 4-69 with the words "existing power plant".
112	4-69	28 to 29	4.11.4	Note that air pollution control equipment does not generate additional ash. Accordingly, consider changing the words "equipment for controlling air pollution generates additional ash and scrubber sludge" in lines 28 to 29 on page 4-69 as follows: "... equipment for controlling air pollution <del>generates</del> <b><i>captures</i></b> additional ash and <b><i>produces</i></b> scrubber sludge, <b><i>which must be managed as coal combustion wastes.</i></b> "

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	<b>Page</b>	<b>Line</b>	<b>Section</b>	<b>Comment</b>
113	4-83	19 to 41	4.13.4 and 4.13.5	As a clarification, consider noting in sections 4.13.4 and 4.13.5 that the discussions of Waste Management and Pollution Prevention for the IGCC and NGCC Alternatives focus solely on solid waste. Airborne waste is considered separately, under the sections on Air Quality, but is nevertheless a source of pollution.
114	4-86	27	4.15.1.2	The acronym "VOC" should be defined in line 27 on page 4-86 as well as in the list of Abbreviations and Acronyms on page xxxvii.
115	4-89	14 to 15	4.15.3	Because the sentence in lines 14 to 15 on page 4-89 inaccurately suggests that Byron's GHG emissions are linked in some considerable way to climate change, consider revising the sentence as follows: "The following sections discuss GHG emissions released from operation of Byron Station <del>and the</del> <b><i>They also discuss</i></b> environmental impacts that could <b><i>generally</i></b> occur from changes in climate conditions, <b><i>although the significant contributory effects would come from other sources independent of Byron Station.</i></b> "
116	4-89	21	4.15.3.1	The acronym "HFC" should be defined in line 21 on page 4-89 as well as in the list of Abbreviations and Acronyms on page xxxi.
117	4-92	10	Table 4-22	On page 4-92, in the 2 <sup>nd</sup> column (labeled "CO <sub>2</sub> e") of Table 4-22, the entries in the rows titled "Byron Station continued operation" and "New Nuclear," should be changed from "1.363x10 <sup>3</sup> " to "1.363x10 <sup>4</sup> " MT/year.
118	4-104	26 to 29	4.16.4.6	To clarify the conclusions in section 4.16.4.6 (lines 26 to 29 on page 4-104), consider inserting the words "although the only significant contributory effects in the region would be from projects other than Byron Station" after the words "impacts to terrestrial resources" in line 29, as follows: "... impacts to terrestrial resources although the only significant contributory effects in the region would be from projects other than Byron Station."
119	4-111	25 to 27	4.16.11	Consider the following clarifying edits in lines 25 to 27 on page 4-111: "As described in Section 4.15.3.1, operations at Byron Station emit GHG emissions directly and indirectly. Therefore, it is recognized that

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	Page	Line	Section	Comment
				<p>GHG emissions from continued Byron Station operation may contribute to climate change, <b><i>although the incremental contributions from Byron Station are insignificant in comparison to the contributions from other sources.</i></b></p> <p>Absent this clarification, the sentence is misleading in terms of the overall impact of Byron Station. For example, the GHG emissions from the NGCC alternative exceed those from the operation of Byron Station by approximately 500 times. As another example, the GHG emissions from Byron employee vehicles are comparable to the remaining Byron Station emissions. If those employees were commuting to a different location, the GHG emissions would be unlikely to change significantly.</p>
120	4-112	29 to 31	4.16.11	<p>To clarify the conclusions in section 4.16.11, consider inserting the words “although the impacts will be overwhelmingly due to other projects around the world independent of Byron Station” after the word “MODERATE” in line 31 on page 4-112, as follows:</p> <p>“... would be MODERATE, <b><i>although the impacts will be overwhelmingly due to other projects around the world independent of Byron Station.</i></b>”</p>

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	<b>Page</b>	<b>Line</b>	<b>Section</b>	<b>Comment</b>
121	F-1	22 to 24	F.1	Consider changing the sentence in lines 22 to 24 on page F-1 as follows: “Exelon submitted all 18 potentially cost-beneficial SAMAs to the Byron Plant Health Committee for further implementation consideration <b><i>in accordance with current Byron processes and procedures for evaluating possible plant modifications.</i></b> ”
122	F-1	43 to 45	F.1	To improve clarity, revise the sentence in lines 43 to 45 on page F-1 as follows: “However, Exelon determined that the other SAMA would not be cost-beneficial if <del>given</del> <b><i>Exelon’s possible implementation of another</i></b> SAMA that addresses insights from the Fukushima Daiichi accident and which, if implemented, <del>were implemented since it</del> would mitigate many of the largest contributors to <b><i>the</i></b> Byron <b><i>severe accident</i></b> risk.”
123	F-2	16	F.2.1	In line 16 on page F-2, insert the words “a factor of” between the word “by” and the number “2.5” as follows: “... by multiplying the estimated benefits for internal events by <b><i>a factor of 2.5.</i></b> ”
124	F-5	9 to 11	F.2.2	The sentence in lines 9 to 11 on page F-5 appears to be incomplete. Consider revising it as follows: “The NRC staff review concluded that, while Exelon did not provide a definition of vulnerability, Exelon identified one ‘potential vulnerability’ and one enhancement <del>were.</del> ”
125	F-8	34	F.2.2.1	In line 34 on page F-8, define the acronym “AP” as “auxiliary power”.
126	F-9	31 to 33	F.2.2.1	To improve clarity, consider revising the sentence in lines 31 to 33 on page F-9 as follows: “This requirement results from <del>SW’s</del> <b><i>service water</i></b> being taken from Lake Michigan, the <del>whose water</del> temperature <b><i>of which</i></b> varies throughout the year.”

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	Page	Line	Section	Comment
127	F-10	4 to 5	F.2.2.2	Consider revising the sentence in lines 4 to 5 on page F-10 as follows: “The Byron IPEEE was submitted in December 1996 (ComEd 1996), in response to Supplement 4 of GL 88-20 (NRC 1991), <b><i>which requested that each power reactor licensee identify and report to the NRC plant-specific vulnerabilities to severe accidents caused by external events.</i></b> ”
128	F-10	34 to 35	F.2.2.2	Consider revising sentences in lines 34 to 35 on page F-10 as follows: “The majority of the outliers involved <del>seismic</del> seismic interaction concerns that were resolved through <del>some</del> <b><i>appropriate licensee</i></b> corrective actions. Others were resolved either by Conservative Deterministic Failure Margin capacity analysis <del>that</del> <del>to</del> <del>showed</del> <del>that</del> the <del>seismic</del> seismic capacity <b><i>substantially exceeded the well beyond</i></b> review-level earthquake demand, or by maintenance or modifications.”
129	F-16	13 to 16	F.2.2.3	Consider revising the sentence in lines 13 to 16 on page F-16, as follows: “In response to an NRC staff RAI, Exelon stated that the input for the MAAP cases specified the fission product masses ( <b><i>as opposed to radionuclide activity values</i></b> ) as recommended by the MAAP Users Group Bulletin, “MAAP-FLASH #68” (Exelon 2014).”
130	F-20	23 to 27	F.2.2.4	Consider revising the sentences in lines 23 to 27 on page F-20 as follows: “ <del>Standardized</del> <del>Generic</del> <del>economic</del> <del>data</del> <b><i>inputs</i></b> that <del>is</del> <del>are</del> applied to the region as a whole were obtained from NUREG-1150 (as reflected in the MACCS2 Sample Problem A). <b><i>NUREG-1150 is a seminal, peer-reviewed work in PRA performed by the NRC and the national laboratories that includes a Level 3 PRA for five different reactor sites. The NUREG-1150-based inputs</i></b> were <del>revised from the MACCS2 sample problem input in order</del> <b><i>adjusted</i></b> to account for cost escalation since 1986, the year that <del>the</del> <del>inputs</del> <del>was</del> <del>were</del> first specified.”

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	Page	Line	Section	Comment
131	F-22	13 to 15	F.3.2	Consider revising the sentence in lines 13 to 15 on page F-22 as follows: “Exelon also provided in the ER tabular listings of the Level 2 PRA basic events for the combined LERF categories and the combined Late Release categories, which in total <del>contribute</del> <b>account for</b> approximately 95 percent <b>of the estimated</b> population dose risk and OECR.”
132	F-22	1 to 2	F.3.2	Consider inserting the following new sentence in line 2 on page F-22 after the first sentence on the page: <b><i>“The RRW is the factor by which the risk would decrease if the component, train, system, function, initiating event, or HEP is assumed to be perfectly reliable (i.e., if its probability of failure were zero).”</i></b>
133	F-22	42 to 45	F.3.2	Consider revising the sentence in lines 42 to 45 on page F-22 as follows: “Since Exelon already includes providing for portable ventilation in plant procedures and, <b>as discussed further below</b> , is committed to installing the “no-leak” <b>RCP</b> seals, the NRC staff concludes that this possible alternative SAMA, to provide portable ventilation during maintenance activities, has been adequately explored and is unlikely to be cost-beneficial.”
134	F-24	42	F.3.2	In line 42 on page F-24, change “Bryon” to “Byron.”
135	F-27	18 to 22	F.3.2	The text in lines 18 to 22 on page F-27 is redundant to the text on lines 4 to 9 on page F-27. Accordingly, consider deleting it, as follows: <del>“Exelon’s SAMA ID process included reviewing insights from the plant specific risk studies, and reviewing plant improvements considered in previous SAMA analyses. While explicit treatment of external events in the SAMA identification process was limited, the NRC staff determined that the prior implementation of plant modifications and the absence of external event vulnerabilities reasonably justify examining primarily the internal events risk results for this purpose.”</del>

**Minor Updates, Corrections, and Clarifications on  
Draft Supplement 54 to the Generic Environmental Impact Statement  
for License Renewal of Nuclear Plants Regarding Byron Station, Units 1 and 2**

Where suggested changes to the SEIS are provided, they are highlighted with ***bolded italic*** font for inserted text and ~~strikethrough~~ font for deleted text.

	<b>Page</b>	<b>Line</b>	<b>Section</b>	<b>Comment</b>
136	F-38	24 to 25	F.6	Consider revising the sentence in lines 24 to 25 on page F-38 as follows: “Exelon divided this cost element into two parts—the <b><i>averted</i></b> onsite cleanup and decontamination cost ( <b><i>ACC</i></b> ) <del>also commonly referred to as AGC</del> , and the <b><i>averted replacement power cost (RPC)</i></b> .”
137	F-42	38 to 40	F.7	Consider revising the sentence in lines 38 to 40 on page F-42 as follows: “Exelon has indicated that all 18 potentially cost-beneficial SAMAs will be submitted to the Byron Plant Health Committee for further implementation consideration <b><i>in accordance with current Byron processes and procedures for evaluating possible plant modifications.</i></b> ”
138	F-31	SAMA 16, SAMA Title	Table F-5	Consider changing the title of SAMA 16 in Table F-5 on page F-31 as follows: “16 – Install high flow sensors on the <del>non-SX</del> <b><i>non-essential service water system (WS)</i></b> ”
139	F-31	SAMA 16, modeling assumptions	Table F-5	Consider changing the text in Table F-5 describing the modeling assumptions for SAMA 16 as follows: “Completely eliminates all risk associated with <del>SW</del> <b><i>WS</i></b> flood event scenarios”