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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.

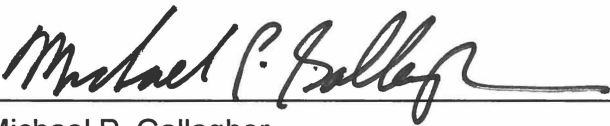
Exelon has completed its review and is submitting, as an enclosure to this letter, written comments on the Draft Generic Environmental Impact Statement for License Renewal of Nuclear Plants Supplement 54 Regarding Byron Station, Units 1 and 2.

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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 February <i>September</i> 1985 (Unit 1) and January <i>August</i> 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 reactor <i>reactors</i> for each unit is both units are Westinghouse pressurized-water reactor <i>reactors</i> (PWRs), <i>together</i> producing <i>an annual average net output of 2,370,394</i> megawatts electric (MWe) <i>for the facility</i> (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>

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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 million Lpd"
8	2-20	15	2.3.3	In line 15 on page 2-20, insert "theoretically" after "could" as follows: "... distances could theoretically 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

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				sentence in line lines 9 to 10 on page 3-1 as follows: It began commercial operation in February September 1985 (Unit 1) and January August 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 2,370 2,394 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.

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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 effective on November 818, 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: Exelon's Spill Prevention, Control and Countermeasure plan The RCRA Facility Plan For Byron Station 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>

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				<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"> (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 (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.
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>

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				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

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				<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>

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				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="padding-left: 40px;">Source: Exelon 2013(b) [Unit 1] Exelon 2014 [Unit 2]</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="padding-left: 40px;">Reduce the probability of Add new event representing diesel-driven SX pump with failure toprobability of 1×10^{-2}.</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="padding-left: 40px;">Completely eliminates all risk from the ISLOCA events occurring in the RHR discharge suction lines.</p>