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10 CFR 50.54(q)(5)
10 CFR 50.4
10 CFR 72.44(f)

RS-20-097

August 6, 2020

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

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

Subject: Exelon Generation Company Emergency Plan Addendum and Procedure Revisions

In accordance with 10 CFR 50.4(b)(5), *"Emergency plan and related submissions,"* Exelon Generation Company, LLC (Exelon) is submitting the Emergency Plan Addendum and Procedure revisions for the Byron Station (Byron) listed in the table below.

| Procedure No. | Revision | Title |
|---|---|---|
| EP-AA-1002, Addendum 3 | 3 | *Emergency Action Levels for Byron Station* |
| EP-AA-1002, Addendum 3 | 4 | *Emergency Action Levels for Byron Station* |
| EP-AA-111-F-03 | J | *Byron PAR Flowchart* |

The changes to the Emergency Plan Addendum and Procedure cited in the table were evaluated under the requirements of 10 CFR 50.54(q) and were determined not to result in a reduction in the effectiveness of the Emergency Plan for Byron. This notification is being submitted within 30 days of implementation of the changes as required by 10 CFR 50.54(q)(5). The changes continue to meet the applicable planning standards established in 10 CFR 50.47(b) and 10 CFR 50, Appendix E.

In addition, as required by 10 CFR 50.54(q)(5), this submittal includes a summary analysis of the changes to the noted Emergency Plan Addendum and Procedure (Attachment 1). This submittal also satisfies the reporting requirements associated with 10 CFR 72.44(f), which stipulates that within six months after any change is made to the Emergency Plan, the licensee shall submit a report containing a description of the changes to the Director, Division of Fuel Management, Office of Nuclear Material Safety and Safeguards.

A copy of the Emergency Plan Addendum and Procedure revisions are included in the attachments to this letter.

There are no regulatory commitments in this submittal.

If you have any questions or require additional information, please contact Amy Hambly at (630) 657-2808.

Respectfully,

Gullott, David M. Digitally signed by Gullott, David M.
Date: 2020.08.06 13:55:13 -05'00'

David M. Gullott
Director, Licensing
Exelon Generation Company, LLC

Attachments:

1. 10 CFR 50.54(q)(5) Change Summary Analysis
2. EP-AA-1002, Addendum 3, Revision 3, *"Emergency Action Levels for Byron Station"*
3. EP-AA-1002, Addendum 3, Revision 4, *"Emergency Action Levels for Byron Station"*
4. EP-AA-111-F-03, Revision J, *"Byron PAR Flowchart"*

cc: w/ Attachment 1 only
Regional Administrator - NRC Region III
Director, NRC Division of Spent Fuel Management, ONMSS
NRC Senior Resident Inspector - Byron Station
NRC Project Manager, NRR - Byron Station
Illinois Emergency Management Agency - Division of Nuclear Safety

# ATTACHMENT 1

10 CFR 50.54(q)(5) Change Summary Analysis

# ATTACHMENT 1

10 CFR 50.54(q)(5) Change Summary Analysis

## I. Document Titles

Exelon Generation Company, LLC (Exelon) has issued the following Emergency Plan Addendum and Procedure revisions for the Byron Station (Byron):

- EP-AA-1002, Addendum 3, Revision 3, *"Emergency Action Levels for Byron Station"*
- EP-AA-1002, Addendum 3, Revision 4, *"Emergency Action Levels for Byron Station"*
- EP-AA-111-F-03, Revision J, *"Byron PAR Flowchart"*

## II. Description of Procedures

Emergency Plan Addendum (EP-AA-1002, Addendum 3)

The Emergency Plan Addendum listed (i.e., EP-AA-1002, Addendum 3) describes the Emergency Action Levels (EALs) implemented at Byron for entering Emergency Classification Levels (ECLs).

Emergency Plan Procedure (EP-AA-111-F-03)

The Emergency Plan Procedure listed (i.e., EP-AA-111-F-03) is a flowchart describing Protective Action Recommendations (PARs) related to the following:

- *Initial Protective Action Recommendation Only*
- *All Other General Emergencies Only*
- *Rapidly Progressing Severe Accident*
- *Hostile Action*

## III. Description of Changes

EP-AA-1002, Addendum 3, Revision 3

The following changes were made under this revision to EP-AA-1002, Addendum 3.

1. The implementation guidance provided in Nuclear Energy Institute (NEI) 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," for EALs AG1, AS1, and AA1 (corresponding Exelon EALs RG1.1, RS1.1, and RA1.1) for the selection of a source term is as follows:

   *"Acceptable sources of this information include, but are not limited to, the RETS [Radiological Effluent Technical Specifications]/ODCM [Offsite Dose Calculation Manual], and values used in the site's emergency dose assessment methodology."*

While developers are cautioned to ensure that the method used results in a logical escalation in ECLs, they are only provided general guidance for the selection of a source term. As a result, Exelon legacy sites have used an Offsite Dose Calculation Manual (ODCM) source term that contains only noble gas components. The guidance in NEI 99-01, Revision 6, recognizes the ODCM as an acceptable source for this information. Emergency Preparedness Frequency Asked Question (EPFAQ) 2015-009 was written in response to the use of a noble gas only source term and recommends that licensees consider iodine radionuclides within their source term. Establishing the reading of a radiation monitor corresponding to an EAL threshold relies on the assumption of parameters that are difficult to ascertain at the time the threshold is being determined, but upon further consideration, to reach the release rates described in the ICs for EALs RG1, RS1 and RA1 would require an accident-level severity source term. This accident source term would be expected to include non-noble gas components such as iodine radionuclides. When using an accident source term, iodine radionuclides are in the release stream and will contribute to the Committed Effective Dose Equivalent (CEDE) and Committed Dose Equivalent (CDE) dose values identified in the IC. Based on this, Exelon has chosen to recalculate the threshold values for EALs RA1.1, RS1.1 and RG1.1 using an accident source term described in the widely accepted industry standard document NUREG-1940, "RASCAL 4: Description of Models and Methods." The revised threshold values, using the accident source term, were recalculated and documented in a supporting site-approved calculation. The revised calculations ensure that potential significant radionuclides in the release stream will be considered. The revised threshold values are consistent with the guidance contained in NEI 99-01, Revision 6. The recalculation of these thresholds has also required the recalculation of the Unusual Event (UE) EAL RU1.2 threshold value to ensure proper escalation, since the current value was above the newly calculated RA1.1 threshold value using the accident source term. This change follows the guidance of NEI 99-01, Revision 6, as follows:

> *"Depending upon the methodology used to calculate the EAL values, there may be overlap of some values between different ICs. Developers will need to address this overlap by adjusting these values in a manner that ensures a logical escalation in the ECL."*

The new threshold value calculation for EAL RU1.2 is also included in the supporting calculation. The adjustment of the threshold value for EAL RU1.2 also remains consistent with the guidance provided in NEI 99-01, Revision 6.

2. The calculation that sets the threshold values for the containment radiation monitor readings for the EAL FC3.1 Fuel Clad Loss Threshold value and EAL CT3 Containment Potential Loss Threshold value was revised. These threshold values are described in NEI 99-01, Revision 6. The Loss Threshold value in EAL FC3.1, is described as equating to 2% to 5% fuel clad damage, and Exelon chose to use 2% fuel clad damage to express this threshold value. The Potential Loss Threshold value in EAL CT3 is described in NEI 99-01, Revision 6, as equating to 20% fuel clad damage. The threshold values were revised to account for a change in the Core Damage Assessment Model (CDAM) program. The changes were evaluated and approved in a supporting 10 CFR 50.54(q) evaluation. The changes were based on a change in relationship between core damage and containment radiation monitor response from a logarithmic to a linear

relationship. The change in the CDAM program is in response to Emergency Preparedness Frequently Asked Question (EPFAQ) 2015-010. This EPFAQ describes the core damage vs. containment radiation monitor response relationship as having both linear and logarithmic characteristics. Exelon determined that the best way to reflect this relationship in the revised CDAM program is in a linear manner. The changes required a recalculation of the EAL FC3.1 Fuel Clad Loss Threshold value, and the EAL CT3 Containment Potential Loss Threshold value. The supporting calculation was developed and utilizes the CDAM program to determine the threshold values, which is the same method that had been used for calculating previous values. The calculation contains CDAM reports providing the assumptions made and the radiation monitor readings corresponding to both 2% and 20% fuel clad damage.

3. Also, as part of this revision the Protective Action Recommendation (PAR) flowchart, EP-AA-111-F-03, Revision J, "Byron PAR Flowchart," was revised to match the corresponding EAL Potential Loss of Containment (CT3) value for the Rapidly Progressing Severe Accident (RPSA) determination.

4. The EAL RA3 Hot and Cold Reference Matrix Note was revised to be consistent with the wording in the EAL RA3 Basis section.

   Changing from:

   *"If the equipment in the listed room or area was already inoperable, or out of service, before the event occurred, then no emergency classification is warranted."*

   To:

   *"If the equipment in the room or area listed in Table R3 was already inoperable, or out of service, before the event occurred, then no emergency classification is warranted."*

5. The IC for EAL RU1 in the Hot and Cold Reference Matrix was revised to remove the phrase "to the environment" and added the word "limits" after the term ODCM, since this description is more consistent with the EAL Basis and as approved by NRC. This change is considered administrative in nature.

6. The third bullet in the Note in the Hot and Cold Reference Matrix for EALs RG1, RS1, RA1 was revised to state the following:

   *"Classification based on effluent monitor readings assumes that a release path to the environment is established. If the effluent flow past an effluent monitor is known to have stopped due to actions to isolate the release path, then the effluent monitor reading is no longer valid for classification purposes."*

   versus

   *"If the effluent flow past an effluent monitor is known to have stopped, indicating that the release path is isolated, the effluent monitor reading is no longer valid."*

This change is considered administrative in nature and the revised description is more consistent with the EAL Basis and as approved by NRC.

7. The Hot and Cold Reference Matrix and Basis section for EAL RU1.1 was revised to read "> 2 times alarm setpoint" versus "> 2 times high alarm setpoint." This change is considered administrative in nature and is more consistent with the description as approved by NRC.

8. The IC in the Hot and Cold Reference Matrix for EAL RU2 was revised to state "UNPLANNED loss of water level above irradiated fuel" versus "Unplanned lowering of water level above irradiated fuel." This change is considered administrative in nature and the revised description is more consistent with the EAL Basis and as approved by NRC.

9. The Hot and Cold Reference Matrix and Basis section for EALs RG1.3.a and RA2.2, and the Hot and Cold Reference Matrix for EAL RS1.3.a, were revised to specify "mR/hr" versus "mRem/hr" as the unit for representing dose rate. This change is considered administrative in nature and the revised description is more consistent with the EAL Basis and as approved by NRC.

10. The first two (2) bullets in the Hot and Cold Reference Matrix for EAL RU2.1.a were revised to add a "<" in front of the value in the parenthesis ( ) as noted below.

    - Refueling Cavity water level < 23 ft. above the Reactor Flange (< 423 ft. indicated level).

      OR

    - Spent Fuel Pool water level < 23 ft. above the fuel **(< 422 ft. 9 in**. indicated level).

    This change is considered administrative in nature and the revised description is more consistent with the EAL Basis and as approved by NRC.

11. The Cold Reference Matrix for EAL RU2.1.a and third bullet in the Hot and Cold Reference Matrix for EAL RU2.1.a use the REFUELING PATHWAY individual components versus using the defined term, REFUELING PATHWAY, as is used in the Basis section for EAL RU2.1.a and third bullet for EAL RU2.1.a. The third bullet in the Hot and Cold Reference Matrix for EAL RU2.1.a and the Cold Reference Matrix for EAL RU2.1.a were revised accordingly to use the defined term REFUELING PATHWAY. This change is considered administrative in nature and the revised description is more consistent with the EAL Basis and as approved by NRC.

12. The Basis section for EAL RU1.2 was revised to change the instrument number reference cited from (1/2 RE-R030) to (1/2 RE-PR030). This change is considered editorial in nature and the revised description is more consistent with the EAL Basis and as approved by NRC.

13. The Hot and Cold Reference Matrix for RA1.3 was revised to reflect the Basis section formatting where the EAL is split into and a. and b. versus one large EAL. This format

change is considered administrative in nature and is consistent with the EAL Basis and as approved by NRC.

14. The following administrative/editorial changes were made in the Hot and Cold Reference Matrix to provide consistency with the applicable EAL Basis as approved by the NRC:

    - RG1 2.b and 3.b, RS1 2.b and 3.b, and RA1 2.b and 4.b The phrase "Thyroid CDE" in the Hot and Cold Reference Matrix for EALs RG1 2.b and 3.b, RS1 2.b and 3.b, and RA1 2.b and 4.b was corrected to read "CDE Thyroid."

    - The text for terms "TEDE" and "CDE Thyroid" in the Basis sections for EALs RA1.3.a and .b, and RA1.4.b were bolded.

    - The last line in the Basis section for EAL MS2 describing the escalation path was revised to change "MG3" to "MG2."

    - The statement in the "*" in Table C2 of the Cold Reference Matrix was revised from "EAL Threshold #1" to "EAL #1."

    - The Cold Reference Matrix for EAL CA5.2 was revised to read "(This EAL does not apply in solid plant conditions)" versus “(This EAL threshold does not apply during water-solid plant conditions)."

    - The Cold Reference Matrix for EAL CS6.3.b was revised to change the word "any" to "**ANY."**

    - The Cold Reference Matrix for EALs CA6.1.a, 1.b, and 2.b, were revised to change the phrase "Reactor Vessel / RCS" to "RCS / Reactor Vessel."

    - The Cold Reference Matrix for CA6.2.a was revised to change the phrase "Reactor Vessel / RCS" to "RCS / Reactor Vessel."

    - The Cold Reference Matrix and Basis section for EAL CU6.2.a was revised to capitalize the "V" in the word vessel.

15. The Reference sections for EALs RG1, RS1, RA1, and RU1 were revised to remove the revision number from the calculation references. In addition, EALs RG2, RS2, and RA2 were revised to add references to include the Spent Fuel Pool (SFP) Level 3 and Level 2 determination calculations.

16. The Hot and Cold Reference Matrix for EAL HU3.1 was revised to change the "≤" symbol to a "<" symbol.

17. The Cold Reference Matrix for EAL CU6.2.b was revised to read "Loss of RCS/ Reactor Vessel inventory per Table C3 indications" versus "UNPLANNED rise in any Table C3 levels."

18. The "*" statement in Table C3 of the Cold Reference Matrix was revised to read "Rise in level is attributed to a loss of reactor vessel /RCS inventory" versus "Rise in level is of a sufficient magnitude to indicate core uncovery."

19. The second bullet in the Cold Reference Matrix for EAL CU5.2 was changed to revise the term "RPV" to "RCS."

20. The first bullet in the Cold Reference Matrix for EALs CG6.2.b and CS6.3.b was revised to add the phrase "…of a sufficient magnitude to indicate core uncovery…."

21. The Basis Reference sections for EALs MA3 and MU3 Basis were updated to include a refence to BAP 300-1A1, "At the Controls Area," since it describes this area as it is utilized within the EAL thresholds.

EP-AA-1002, Addendum 3, Revision 4

The revision to EP-AA-1002, Addendum 3, makes changes to certain EALs in support of implementing a License Amendment Request (LAR) that was submitted on March 1, 2019, requesting Emergency Plan changes, which was subsequently approved by the U.S. Nuclear Regulatory Commission (NRC) as documented in a letter and supporting Safety Evaluation Report (SER) dated February 14, 2020 (reference Amendment Nos. 211 and 211 for Byron, Units 1 and 2, respectively). This LAR involved changes to certain EALs related to adopting select Emergency Preparedness Frequently Asked Questions (EPFAQs) that had been accepted by the NRC.

This revision implements the changes as approved by the NRC in its letter and supporting SER dated February 14, 2020, and are considered to be "conforming changes." Therefore, prior NRC approval to implement the changes is not required. NRC Regulatory Guide (RG) 1.219, *Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors*, states the following regarding conforming changes.

> *The licensee should screen all proposed changes to the emergency plan to determine whether a 10 CFR 50.54(q) evaluation is necessary and to determine whether another formal change process is applicable. The purpose of this screening is not to decide which proposed changes could reduce effectiveness but instead whether a 10 CFR 50.54(q) change evaluation is necessary. The licensee should screen each proposed change separately and reserve the treatment of changes collectively for (1) repetitive identical changes, (2) editorial or typographical changes such as formatting, paragraph numbering, spelling, or punctuation that do not change intent, (3) conforming changes, or (4) two or more elements that are interdependent (e.g., a change to one element compensates for a change to another element). The licensee should document this screening if it concludes that a 10 CFR 50.54(q)evaluation is not necessary.*

EP-AA-111-F-03, Revision J

The Procedure was revised as discussed above (Item 2) to match the corresponding EAL Potential Loss of Containment (CT3) value for the RPSA determination. Additionally, minor administrative/editorial changes were made to ensure consistency with changes previously approved by the NRC.

## IV. Description of How the Changes Still Comply with Regulations

EP-AA-1002, Addendum 3, Revision 3

1. Updating the EAL threshold values based on the technical basis changes for the EALs described above in Section III does not alter the meaning or intent of the basis of the approved EAL. The determination of the threshold value remains consistent with the NRC approved threshold definition and is in keeping with the guidance provided in NEI 99-01, Revision 6. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

2. The FC3.1 and CT3 threshold values were revised to account for a change in the CDAM program. The change in the CDAM program is in response to EPFAQ 2015-010 which was accepted by the NRC. This EPFAQ describes the core damage vs. containment radiation monitor response relationship as having both linear and logarithmic characteristics. Exelon determined that the best way to reflect this relationship in the CDAM program is in a linear relationship. This change required a recalculation of the threshold values for EAL FC3.1 Fuel Clad Loss and EAL CT3 Containment Potential Loss and the supporting calculation utilizes the CDAM program to determine the threshold values. The calculation contains CDAM reports providing the assumptions made and the monitor readings corresponding to both 2% and 20% fuel clad damage.

   Updating the EAL threshold values based on the new calculated technical basis does not alter the meaning or intent of the basis of the approved EALs. Revising the EALs as described does not alter the meaning or intent of the approved EALs. The determination of the threshold values remains consistent with the NRC-approved threshold definitions and in keeping with the guidance provided in NEI 99-01, Revision 6.

3. The requirements of 10 CFR 50.47(b)(10) state that: "…A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public…." In addition, the guidance in NUREG-0654, Section II.J, states: "…Each licensee shall establish a mechanism for recommending protective actions to the appropriate State and local authorities…."

   The PARs implemented in Exelon's Procedure EP-AA-111, *"Emergency Classification and Protective Action Recommendations,"* were developed based on the guidance in NUREG-0654/FEMA-REP-1, Revision 1, Supplement 3, *"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in support of Nuclear Power Plants."* Supplement 3 defines a Rapidly Progressing Severe Incident as a *"General Emergency with rapid loss of containment Integrity (emergency action levels indicate containment barrier loss) and a loss of ability to cool the core."* The definition is further refined in EPFAQ 2013-004 Final Response, Question 1. Question 1 defines a RPSA as follows:

   1. *This protective action recommendation is the first after a General Emergency has been declared*

      *AND*

2. *There is a loss of the containment barrier per the Emergency Action Levels.*

   *AND*

3. *Either of the following:*

   a. *Greater than or equal to Containment High Range Area Radiation Monitor Potential Loss EAL Threshold (20% Clad Damage).*

   *OR*

   b. *A significant radiological release (greater than PAGs at boundary) in about an hour.*

The updates to the PAR flowcharts to match the Containment High Range Area Radiation Monitor Potential Loss EAL threshold values ensures continued compliance with the definition of the RPSA for the site. Therefore, the requirements of 10 CFR 50.47(b)(10), and guidance of NUREG-0654, Section II.J, NUREG-0654/FEMA-REP-1, Revision 1, Supplement 3, and EPFAQ 2013-004 Final Response, Question 1, are maintained. Revising the EALs as described does not alter the meaning or intent of the approved EALs.

4. Revising the Note in the Hot and Cold Reference Matrix as described in Section III above is consistent with the EAL Basis and as approved by the NRC. The change does not alter the meaning or intent of the approved EAL. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

5. The requirements of 10 CFR 50.47(b)(4) state in part: "*A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee."* The guidance in NUREG 0654, Section II.D.1 states in part: "*An emergency classification and emergency action level scheme as set forth in Appendix 1 must be established by the licensee. The specific instruments, parameters or equipment status shall be shown for establishing each emergency class, in the in-plant emergency procedures. The plan shall identify the parameter values and equipment status for each emergency class*."

   The changes to the Hot and Cold Reference Matrix for EAL RU1 as described in Section III above are consistent with the EAL Basis and as approved by the NRC. The changes do not alter the meaning or intent of the approved EAL. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

6. The requirements of 10 CFR 50.47(b)(4) states in part: *"A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee."* In addition, the guidance in NUREG-0654, Section II.D.1, states in part: "*An emergency classification and emergency action level scheme as set forth in Appendix 1 must be established by the licensee. The specific instruments, parameters or equipment status shall be shown for*

*establishing each emergency class, in the in-plant emergency procedures. The plan shall identify the parameter values and equipment status for each emergency class*."

The changes to the third bullet in the Note in the Hot and Cold Reference Matrix for EALs RG1, RS1, RA1, and RU1 as described in Section III above are consistent with the EAL Basis and as approved by the NRC. The changes do not alter the meaning or intent of the approved EAL. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

7. The changes to the Hot and Cold Reference Matrix and Basis section for EAL RU1.1 as described in Section III above do not alter the meaning or intent of the approved EAL. The changes remain consistent with the NRC-approved EAL. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

8. The changes to the Hot and Cold Reference Matrix related to the IC for EAL RU2 IC as described in Section III above are consistent with the EAL Basis and as approved by the NRC. The changes do not alter the meaning or intent of the approved EAL. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

9. The changes to the Hot and Cold Reference Matrix and Basis section for EALs RG1.3.a and RA2.2, and to the Hot and Cold Reference Matrix for EAL RS1.3.a as described in Section III above are consistent with the EAL Basis and as approved by the NRC. The changes do not alter the meaning or intent of the approved EAL. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

10. The changes to the first two bullets in the Hot and Cold Reference Matrix for EAL RU2.1.a as described in Section III above are consistent with the EAL Basis and as approved by the NRC. The changes do not alter the meaning or intent of the approved EAL. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

11. The changes to the Cold Reference Matrix for EAL RU2.1.a, and to the third bullet in the Hot and Cold Reference Matrix for RU2.1.a, as described in Section III above do not alter the meaning or intent of the basis of the approved EAL. The determination of the threshold value remains consistent with the NRC-approved threshold definition. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

12. Revising the Basis section for EAL RU1.2 basis as described above in Section III related to referencing instrumentation numbering does not alter the meaning or intent of the approved EAL. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

13. Revising the Hot and Cold Reference Matrix for RA1.3 as described above in Section III concerning EAL formatting does not alter the meaning or intent of the approved EAL. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

14. Revising the EALs to make the administrative/editorial changes as described in the list above in Section III does not alter the meaning or intent of the approved EALs. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

15. Revising the Reference sections for EALs RG1, RS1, RA1, and RU1 as well as EALs RG2, RS2, and RA2 as described in Section III above does not alter the meaning or intent of the approved EALs. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

16. Revising the Hot and Cold Reference Matrix for EAL HU3.1 as described above in Section III to change a symbol notation is consistent with the applicable EAL Basis and as approved by the NRC. The change does not alter the meaning or intent of the approved EAL. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

17. Revising the Cold Reference Matrix for EAL CU6.2.b as described above in Section III is consistent with the applicable EAL Basis and as approved by the NRC. The change does not alter the meaning or intent of the approved EAL. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

18. Revising the "*" statement in Table C3 of the Cold Reference Matrix as described in Section III above does not alter the meaning or intent of the approved EAL. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

19. Revising the second bullet in the Cold Reference Matrix for EAL CU5.2 as described in Section III above is consistent with the applicable EAL Basis and as approved by the NRC. The change does not alter the meaning or intent of the approved EAL. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

20. Revising the first bullet in the Cold Reference Matrix for EALs CG6.2.b and CS6.3.b as described in Section III above is consistent with the applicable EAL Basis and as approved by the NRC. The change does not alter the meaning or intent of the approved EALs. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

21. Revising references in the Basis sections for EALs MA3 and MU3 as described above in Section III does not alter the meaning or intent of the approved EALs. Additionally, applicable emergency preparedness regulations and commitments to the NRC continue to be met.

<u>EP-AA-1004, Addendum 3, Revision 4</u>

The requirements of 10 CFR 50.47(b)(4) state in part: *"…A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee*." In addition, the guidance in

NUREG-0654, Section II.D.1 states in part: "…*An emergency classification and emergency action level scheme as set forth in Appendix 1 must be established by the licensee. The specific instruments, parameters or equipment status shall be shown for establishing each emergency class, in the in-plant emergency procedures. The plan shall identify the parameter values and equipment status for each emergency class*."

As documented in a letter and supporting SER dated February 14, 2020, the NRC issued Amendment Nos. 211 and 211 for Byron, Units 1 and 2, respectively. The amendments approved Emergency Plan changes related to revising certain EALs in support of adopting select NRC-accepted EPFAQs. The changes to the EALs as described above, reflect the implementation of the NRC-approved amendments for Byron, Units 1 and 2.

The changes are considered conforming changes that have already been approved by the NRC. Applicable emergency preparedness regulations and commitments to the NRC continue to be met.

EP-AA-111-F-03, Revision J

The changes to this Procedure as described above (Sections II and III, Item 3) do not alter the meaning or intent of the PARs or alter the meaning or intent of approved EALs and any corresponding PARs. Applicable emergency preparedness regulations and commitments to the NRC continue to be met.

**Summary**

The changes described above do not alter the meaning or intent of the basis of the NRC-approved Emergency Plan for Byron. Applicable regulatory commitments made to the NRC continue to be met. Existing requirements and capabilities under the Emergency Plan were not deleted or reduced and applicable regulatory requirements established in 10 CFR 50.47, 10 CFR 50, Appendix E, and the Program Element guidance of NUREG-0654 continue to be met.

## V. Description of Why the Changes are Not a Reduction in Effectiveness (RIE)

Based on the changes described in Sections III and IV above, the emergency response capabilities are maintained and are not adversely impacted. The changes made under these revisions are either consistent with changes previously approved by the NRC or have been appropriately evaluated pursuant to 10 CFR 50.54(q) and were determined not to require prior NRC approval. Some of the changes are also supported by the guidance specified in RG 1.219. Applicable emergency preparedness regulatory commitments made to the NRC and applicable regulatory requirements established in 10 CFR 50.47, 10 CFR 50, Appendix E, and the Program Element guidance of NUREG-0654 continue to be met. Therefore, the changes described do not constitute a reduction in effectiveness of the Emergency Plans for Byron.

# ATTACHMENT 2

Radiological Emergency Plan Addendum Revision

**EP-AA-1002, Addendum 3, Revision 3, *"Emergency Action Levels for Byron Station"***

# ATTACHMENT 3

Radiological Emergency Plan Addendum Revision

**EP-AA-1002, Addendum 3, Revision 4, *"Emergency Action Levels for Byron Station"***

# ATTACHMENT 4

Radiological Emergency Plan Procedure Revision

**EP-AA-111-F-03, Revision J, *"Byron PAR Flowchart"***