

10 CFR 50.90
10 CFR 50.54(q)

RS-21-029

March 15, 2021

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. STN 50-454, STN 50-455 and 72-068

Dresden Nuclear Power Station, Units 1, 2 and 3
Amended Facility Operating License No. DPR-2
Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-010, 50-237, 50-249, and 72-037

Subject: Response to Request for Additional Information (RAI) Regarding License
Amendment Request - Proposed Changes to the Byron and Dresden Stations
Emergency Plan for Post-Shutdown and Permanently Defueled Condition

References: 1) Letter from Patrick R. Simpson (Exelon Generation Company, LLC) to U.S.
Nuclear Regulatory Commission – "License Amendment Request - Proposed
Changes to Byron Emergency Plan for Post-Shutdown and Permanently
Defueled Condition," dated November 2, 2020 (ML20307A333)

2) Letter from Patrick R. Simpson (Exelon Generation Company, LLC) to U.S.
Nuclear Regulatory Commission – "License Amendment Request - Proposed
Changes to Dresden Emergency Plan for Post-Shutdown and Permanently
Defueled Condition," dated November 2, 2020 (ML20307A434 &
ML20307A436)

3) Electronic Mail Request from Russell Haskell (U.S. Nuclear Regulatory
Commission) to Rebecca Steinman and Mitchel Mathews (Exelon Generation
Company, LLC) – "Request for Additional Information re: Byron/Dresden –
Proposed Changes to Site Emergency Plans to Support Post-Shutdown and
Permanently Defueled Conditions (EPID-2020-LLA-0240 & EPID-2020-LLA-
0237)," dated February 18, 2021 (ML21049A257)

By letters dated November 2, 2020 (References 1 and 2), Exelon Generation Company, LLC (Exelon) submitted License Amendment Requests (LARs) for changes to the Site Emergency Plans (SEP) for Byron Station (Byron) and Dresden Nuclear Power Station (Dresden), respectively. The proposed amendments would revise the SEPs to change the staffing for certain emergency response organization (ERO) positions for the post shutdown and permanently defueled condition.

Subsequently, in an electronic mail request dated February 18, 2021 (Reference 3), the NRC issued a Request for Additional Information (RAI) with a response due 30-days from the date of the Reference 3 electronic mail request. Accordingly, the attachment to this letter provides Exelon's response to the NRC's RAI.

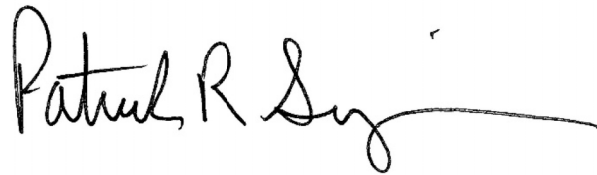
Exelon has reviewed the information supporting a finding of No Significant Hazards Consideration and the Environmental Consideration provided to the NRC in References 1 and 2. The additional information provided in this submittal does not affect the previously stated bases in References 1 and 2 for concluding that the proposed license amendment does not involve a significant hazards consideration. In addition, the information provided in this submittal does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

There are no commitments contained within this submittal.

If you have any questions concerning this submittal, please contact Leslie Holden at (630) 657-2524.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 15th day of March 2021.

Respectfully,

A handwritten signature in black ink, appearing to read "Patrick R. Simpson", with a long horizontal flourish extending to the right.

Patrick R. Simpson
Sr. Manager - Licensing
Exelon Generation Company, LLC

Attachment: Response to NRC's Request for Additional Information - Byron and Dresden Post Shutdown Emergency Plans (PSEPs)

cc: NRC Regional Administrator, Region III
NRC Project Manager, NRR – Byron Station
NRC Senior Resident Inspector – Byron Station
NRC Project Manager, NMSS – Dresden Nuclear Power Station, Unit 1
NRC Project Manager, NRR – Dresden Nuclear Power Station, Units 2 and 3
NRC Senior Resident Inspector – Dresden Nuclear Power Station
Illinois Emergency Management Agency – Division of Nuclear Safety

Attachment 1

Response to NRC's Request for Additional Information –
Byron and Dresden Post Shutdown Emergency Plans (PSEPs)

SUMMARY

By letters dated November 2, 2020 (References 1 and 2), Exelon Generation Company, LLC (Exelon) submitted License Amendment Requests (LARs) for changes to the Site Emergency Plans (SEPs) for Byron Station (Byron) and Dresden Nuclear Power Station (Dresden), respectively, for U.S. Nuclear Regulatory Commission (NRC) review and prior approval, pursuant to Title 10 of the Code of Federal Regulations (10 CFR) Section 50.54(q). The proposed changes would revise the Byron and Dresden SEPs to change the staffing for certain emergency response organization (ERO) positions, based on receipt by the NRC of certification under 10 CFR 50.82(a)(2) that the Byron and Dresden reactors had permanently ceased operations and permanently removed fuel from the reactor vessel. Upon docketing of these certifications for each site, the 10 CFR 50 licenses for Byron and Dresden will no longer authorize operation of the reactors or emplacement or retention of fuel into the reactor vessels.

Subsequently, in an electronic mail request dated February 18, 2021 (Reference 3), the NRC issued a Request for Additional Information (RAI) with a response due 30-days from the date of the Reference 3 electronic mail request on March 18, 2021.

Accordingly, this attachment provides Exelon's response to the RAI questions contained in Reference 3. The specific questions are identified below followed by Exelon's response.

Discussion: (RAI-1a & 1b) – re: Emergency Preparedness Function: Dose Assessment / Projections

In LAR Attachment 1, Section 5.3.5.a, "Emergency Preparedness Function: Dose Assessment / Projections," "ON-SHIFT," states, in part:

The analysis of proposed post-shutdown On-Shift Staffing Assessment concluded that in a permanently defueled condition, the Operations crew can perform all required [site specific] Emergency Plan actions in a timely manner and there are no collateral duties that would prevent the timely performance of emergency plan functions.

RAI-1.a

Staff Request:

Please clarify if the on-shift operations personnel are members of the Fire Brigade, and if so, who would perform assessment of radiological releases during a fire involving radioactive material or in areas containing radioactive materials requiring a Fire Brigade response?

Exelon's Response:

On-shift Operations personnel will be assigned as members of the Fire Brigade, however they are counted separate from the ERO. Operations personnel assigned to the ERO will perform the dose assessment function. In the scenario postulated in the question, the Operations personnel assigned to the Fire Brigade would respond to the fire, while an Operations person assigned to the ERO would perform the dose assessment.

Operations personnel designated to be part of Fire Brigade are counted as separate, distinct, and in addition to those counted as part of the ERO. As indicated in the LARs (References 1

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and 2), Attachment 1, Section 5.4.1, the Post Shutdown On-Shift Staff will be comprised of five (5) individuals plus the Fire Brigade.

The reassignment of the responsibility for the dose assessment function from the On-Shift Radiation Protection Technician (RPT) to the Operations crew was assessed in the Emergency Response Organization Task Analysis included as Attachment 4 to the LARs (References 1 and 2) as acceptable. Operations staff can perform initial dose assessment using existing Emergency Preparedness Implementing Procedures (EPIPs). Additionally, as provided in the LARs (References 1 and 2), Attachment 1, Section 5.3.3.a, the Operations crew will be trained and qualified to perform the dose assessment function.

RAI-1.b

Staff Request:

Please clarify if the on-shift operations personnel have actions to perform for implementation the site-specific spent fuel pool mitigation strategies, and if so, does this create a collateral duty that would prevent the timely performance of emergency plan functions (e.g., dose assessment)?

Exelon's Response:

Operations personnel assigned to the Fire Brigade will be responsible for implementation of the spent fuel pool inventory mitigation strategies. These strategies will continue to be maintained to satisfy applicable portions of the Byron/Dresden Mitigation Strategy License Conditions (LCs) (i.e., Byron: Unit 1 LC 2.C.(22) and Unit 2 LC 2.C.(11) / Dresden Unit 2 LC 2.C.(18) and Unit 3 LC 3.AA), and 10 CFR 50.155(b)(2).

As provided in response to RAI-1.a above, the Operations personnel that are assigned to the Fire Brigade are counted as separate from the Operations personnel who are assigned ERO functions. In the scenario postulated in the question, the Operations personnel assigned to the Fire Brigade would be responsible for implementing the mitigating strategies and would have no ERO collateral duties, while an Operations person assigned to the ERO would perform emergency plan functions (e.g., dose assessment).

Discussion: (RAI-2a & 2b) – re: Operations Support Center Radiation Protection Lead

In LAR, Attachment 3, Section B.3.9, "OSC [Operations Support Center] RP [Radiation Protection] Lead," "[site-specific] Proposed Revision to Site Emergency Plan," provides the responsibilities for the managing and supervising OSC team RP personnel, including:

- Conduct of adequate pre-dispatch briefings;
- Ensuring adequate protective equipment and measures have been identified;
- Tracking of OSC team activities while dispatched, and
- Debriefing of team personnel upon return to the OSC.

However, in LAR, Attachment 1, Section 5.3.10.b, "Emergency Preparedness Function: Supervision of Repair Team Activities," "AUGMENTED ERO" states, in part:

(1) Radiation Protection Supervisor / Lead¹

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Note 1. Other personnel may be assigned this function if no collateral duties are assigned to an individual that are beyond the capability of that individual to perform at any given time.

Additionally, in LAR, Attachment 3, Figure B-1b, "Emergency Onsite Organization," states, includes a footnote that states:

¹ Rad Protection Lead responsibilities will be performed by a Rad Protection Pool responder as a collateral function.

Further, in LAR for Byron, Attachment 4, item #95 (pg. 223/230), "ERO Staffing Assessment Matrix," states the following as noted in the column for the justification/implementing action:

The duties for oversight of the RP OSC staff will be taken as a collateral function for a RP Technician.

RAI-2.a

Staff Request:

Please clarify why the OSC RP Lead position is included since it is a collateral function of another augmenting responder.

Exelon's Response:

The OSC Supervisor/Lead position is included to perform the Emergency Preparedness (EP) Function associated with the supervision of RP personnel as provided in the proposed Emergency Plans. This function is required within 90-minutes of ERO activation (required at an Alert or greater) as stated in Part III, Appendix 5, Table 5-1: "Emergency Response Organization (ERO) Staffing and Augmentation Plan" for the EP Function under the Supervision of Repair Team Activities. This function is deemed as necessary but has been evaluated by the Task Analysis to be capable of being performed as a collateral duty.

In addition to the responsibilities stated above in the NRC's discussion, the purpose of the OSC RP Supervisor/Lead position (function) is to provide for; safety of RP team personnel, management and supervisory oversight, and to keep the OSC Director apprised of team status. Based on the Emergency Response Task Analysis provided in Attachment 4 (Item 95) to the LARs (References 1 and 2), the RP Supervisor/Lead function is capable as being carried out as a collateral duty by one of the RP support personnel arriving in response to an ERO activation without impacting the capability of that individual to perform their RP Support functions.

The OSC Supervisor/Lead represents the fourth RP position to be filled. Initially, there is one (1) RPT on shift. Within 60-minutes of ERO activation an additional two (2) RPT arrive. When the fourth RP responder arrives at 90-minutes, there is expected to be sufficient OSC RP related activities and RP personnel on-site that the supervision is viewed as necessary as reflected in the EP functional requirements for Supervision of Repair Team Activities in Table 5-1. Because the Byron and Dresden Stations RP pooled responders are RPTs, the 90-minute RP responder will be a RPT.

RAI-2.b

Staff Request:

Additionally, are the RP Technicians trained and qualified to perform these identified functions?

Exelon's Response:

As stated above in the NRC's discussion, the OSC RP Lead position responsibilities for the managing and supervising OSC team RP personnel, include:

- Conduct of adequate pre-dispatch briefings,
- Ensuring adequate protective equipment and measures have been identified,
- Tracking of OSC team activities while dispatched, and
- Debriefing of team personnel upon return to the OSC.

The OSC RP Leads and RP pool responders are trained and qualified on their ERO roles through TQ-AA-113, "ERO Training and Qualification". Specifically, the listed responsibilities are trained via the "OSC Team Dispatch and Control" module. Performance is reinforced and demonstrated during participation in drills and exercises. Many of the functions that an RPT would perform as the OSC RP Lead are routine RPT functions, including briefings, dose monitoring, and ensuring that adequate protective measures and equipment are being identified. Based on training and ERO procedural guidance, RPT Pool Responders are capable of performing the OSC RP Lead responsibilities.

EP-AA-112-300-F-03, "OSC Group Leads Checklist," provides guidance with respect to the OSC Lead responsibilities during an emergency event. EP-AA-112-300-F-03, Section 1.7 addresses initial responsibilities specific to the RP Group Lead, which include dispatch and briefing of personnel. Section 2.4 of EP-AA-112-300-F-03, addresses the conduct of briefings and team dispatch including radiological hazards, exposure limits, and protective equipment requirements as designated by the OSC RP Lead (or designated RPT). Tracking and debriefing of teams is covered by Sections 2.5 and 2.6, respectively. EP-AA-112-300-F-03 will be maintained while the PSEP is in effect.

The reduced spectrum of possible accidents limits the necessity to take measures requiring multiple damage control or survey teams in the Protected Area. If additional resources are determined to be necessary during an emergency, Exelon maintains the necessary staffing to provide sufficient personnel trained in RP to respond and perform the required actions, as necessary, in the permanently shutdown and defueled condition.

Therefore, it is concluded that the RP responder designated to perform the OSC RP Lead function as a collateral function is trained and qualified to do so via training, routine job performance responsibilities, and procedural guidance. Participation in drills and exercises is used to verify these conclusions.

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REFERENCES

- 1) Letter from Patrick R. Simpson (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission – "License Amendment Request - Proposed Changes to Byron Emergency Plan for Post-Shutdown and Permanently Defueled Condition," dated November 2, 2020 (Accession No. ML20307A333)
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