

RS-20-150

10 CFR 26.9

December 1, 2020

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001Byron Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. 50-454 and 50-455Subject: Response to Request for Additional Information Related to Subsequent
Exemption from Part 26 Requirements

- References:
1. NRC letter from H. Nieh to NEI, "U.S. Nuclear Regulatory Commission Planned Actions Related to the Requirements for Work Hour Controls During the Coronavirus Disease 2019 Public Health Emergency," dated March 28, 2020 (ML20087P237).
 2. NRC letter from H. Nieh to NEI, "U.S. Nuclear Regulatory Commission Updated Planned Actions Related to Certain Requirements for Operating and Decommissioning Reactor Licensees During the Coronavirus Disease 2019 Public Health Emergency," dated November 10, 2020 (ML20261H515).
 3. Exelon Generation Company, LLC letter for COVID-19 Related Request for Subsequent Exemption from Part 26 Work Hours Requirements on November 24, 2020 (ML20329A533).
 4. Email from J. Wiebe (U.S. Nuclear Regulatory Commission) to P. A. Henderson (Exelon Generation Company, LLC), "RAIs for Byron Subsequent Request for Part 26 Exemption," dated November 30, 2020.

In Reference 3, Exelon Generation Company, LLC (EGC) requested subsequent exemption from Part 26 requirements as a result of the Coronavirus Disease 2019 (COVID-19) public health emergency (PHE) to utilize the alternative work hour controls delineated in References 1 and 2 for Byron Station, Units 1 and 2 (Byron).

In Reference 4, the NRC determined that additional information is required to complete its review. The attachment to this letter provides the response to the requested information.

There are no regulatory commitments contained within this letter.

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Should you have any questions concerning this letter, please contact Mr. Phillip A. Henderson at (630) 657-4727.

Respectfully,

A handwritten signature in black ink, appearing to read "Dwi Murray". The signature is fluid and cursive, with a long horizontal stroke at the end.

Dwi Murray
Sr. Manager, Licensing
Exelon Generation Company, LLC

Attachment: Response to Request for Additional Information

cc: NRC Regional Administrator, Region III
NRC Senior Resident Inspector – Byron Station
Illinois Emergency Management Agency – Division of Nuclear Safety

ATTACHMENT
Response to Request for Additional Information

NRC Request for Additional Information (RAI)

By application on November 24, 2020 (Reference 3), Exelon Generation Company, LLC (the Licensee) requested an Exemption from Part 26 requirements.

By letter dated November 10, 2020 (Reference 2), the NRC staff provided guidance on the continued use of expedited processes beyond December 31, 2020. In Enclosure 1 to its November 10, 2020, letter the NRC staff stated, in part, that subsequent requests for expedited review should include the following information:

- a technical basis for why the NRC would continue to have reasonable assurance that cumulative fatigue during the subsequent exemption period from 10 CFR 26.205(d)(1)-(d)(7) work hour controls will not compromise plant safety or security due to impaired worker fitness for duty.

At a minimum, the technical basis should address:

- the number of days, if any, immediately preceding the initial exemption period that the work hours of personnel specified in 10 CFR 26.4(a) were controlled in accordance with neither 10 CFR 26.205(d)(3) nor (d)(7) (e.g., during a unit outage);
- actual hours worked during the initial exemption period (i.e., shift duration, whether the shift is fixed or rotating, shift start and end times, pattern of days on and off, and average number of hours worked per week) of each work group for which the licensee is requesting an exemption from the work hour controls;
- self-declarations and behavioral observations of fatigue or impaired alertness, if any, during the initial exemption period;
- the site-specific administrative controls that will be used to manage worker fatigue during the subsequent exemption period; and
- the scheduled modes of operation for the reactor unit(s) during the subsequent exemption period.

The following additional information is needed to support the NRC staff's understanding of the cumulative fatigue issues (the NRC staff requires an understanding of each affected work group's involvement in online, outage, and exemption work controls):

NRC RAI 1

For each group of positions covered in the table included in the licensee's letter dated November 24, 2020, what is the date those individuals began working the outage schedule?

EGC Response to NRC RAI 1

The following table provides the dates of outage schedules worked at Byron by each group included in the November 24, 2020 letter:

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Positions	Outage Schedule Start Date	Outage Schedule End Date
Operations	9/28/2020	11/1/2020
Radiation Protection	9/21/2020	10/25/2020
Chemistry	10/3/2020	10/23/2020
EMD	10/5/2020	10/23/2020
IMD	10/5/2020	10/23/2020
MMD	10/5/2020	10/20/2020

Note: Fire Brigade positions are covered under the response for Operations position. Security personnel worked their normal online schedule throughout the outage period which was from 10/5/2020 until 10/19/2020.

NRC RAI 2

Operator Positions - When did the 8 operators work at Dresden? When did they resume the online schedule at Byron? Is the online shift rotation described in the November 24, 2020 letter the schedule planned during requested extension of the exemption?

EGC Response to NRC RAI 2

The operators supported Dresden's outage from 10/25/2020 to 11/11/2020. The operators worked a fixed schedule as described in the November 24, 2020 letter of four days on and one day off for the duration they were there. Shifts worked were either from 0700 to 1900 or from 1900 to 0700. The online schedule resumed for these operators at Byron on 11/12/2020 as part of their normally scheduled shift rotation.

The online shift rotation schedule described in the November 24, 2020 letter is the schedule that is planned to be worked for the requested extension of the exemption.

NRC RAI 3

Radiation Protection (RP) Positions – For the RP technicians who supported Dresden's outage for 17 days, what were the calendar dates of the support? What were the shift hours worked and the schedule of days on and days off? Were the shifts fixed or rotating?

EGC Response to NRC RAI 3

Radiation Protection (RP) technicians supported Dresden's outage from 10/26/2020 to 11/11/2020. Three RP technicians worked a fixed night shift from 1830 to 0630 and three RP technicians worked a fixed day shift from 0630 to 1830. All of the RP technicians that supported Dresden's outage were uncovered workers and did not have any required days off (RDO). Prior to supporting Dresden's outage, all six RP technicians had 4 RDOs from 10/22/2020 to 10/25/2020 to ensure that 6 days off in a 30 day period was met. Prior to returning to Byron, all six RP technicians had 2 additional days off on 11/10/2020 and 11/11/2020 for COVID-19 testing purposes.

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NRC RAI 4

Chemistry and RP Positions – The online schedule is described as having included 8-hour shifts during all days of the week. What is the sequencing of days on and days off in the online schedule? Is this the schedule planned during the requested extension of the exemption?

EGC Response to NRC RAI 4

Radiation Protection (RP) technicians work a days (0700-1500), afternoons (1500-2300), and nights (2300-0700) shift for online schedule during all days of the week. Three RP technicians are on each of the afternoons shift and nights shift with the rest of the 13 RP technicians on days shift.

RP technicians has a normal Monday through Friday schedule for all technicians not in a duty rotation. During a duty rotation, RP technicians have required days off (RDO) on Monday and Tuesday, work their normal shift Wednesday through Friday, work their picked duty weekend shift (days, afternoons, or nights), then work their normal shift again from Monday through Wednesday, have Thursday and Friday as RDOs, work their picked duty weekend shift again (days, afternoons, or nights), and then work Monday through Friday again on their normal scheduled shift. Therefore, a RP technician has 2 RDOs, works 8 days, then has another 2 RDOs, works another 7 days, and then has 2 RDOs. This is the schedule that is planned to be worked for the requested extension of the exemption.

Chemistry technicians work a days (0700-1500), afternoons (1500-2300), and nights (2300-0700) shift for online schedule during all days of the week. These shifts are eight hours in length. Most technicians work days shift from Monday through Friday unless they are in their duty rotation to fill a backshift.

During a duty rotation, the technician has required days off (RDO) on Thursday and Friday and then fills one of the backshifts for the weekend and throughout the following week. This is the normal rotation for Chemistry technicians through the end of 2020. Beginning in 2021, there will be a permanent technician for the backshifts from Monday through Friday and the rest of the technicians will rotate in the same manner as described above. This is the schedule that is planned to be worked for the requested extension of the exemption.

NRC RAI 5

Electrical Maintenance Department (EMD) Positions – For the EMD personnel who supported Dresden's outage for 17 days, what were the calendar dates of the support? What were the shift hours worked and the schedule of days on and days off? Were the shifts fixed or rotating?

EGC Response to NRC RAI 5

EMD technicians supported Dresden's outage from 10/25/2020 (night shift) to 11/8/2020 for 14 days as described in the November 24, 2020 letter. During this time, they worked fixed twelve-hour shifts of either nights from 1900 to 0700 or days from 0700 to 1900. The technicians and supervisors were given days off prior to the Dresden outage and one day off prior to resuming their online schedule at Byron to ensure they received 6 days off in a rolling 30 day period.

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NRC RAI 6

EMD Positions –The online schedule is described as having included 8-hour shifts Monday through Friday. Are the shifts fixed or rotating? Is this to be understood as individuals are working 40-hours per week? Is this the schedule planned during the requested extension of the exemption?

EGC Response to NRC RAI 6

The EMD technicians work on fixed shifts. The online schedule is 8 hours a day for three different shifts from Monday through Friday with individuals working 40-hours a week. The day shift is from 0700-1530, afternoon shift is from 1500-2330, and midnight shift is from 2300-0730. This is the schedule that is planned to be worked for the requested extension of the exemption.

NRC RAI 7

Instrument Maintenance Department (IMD) Positions - Is the IMD outage schedule to be understood as 19 consecutive days of 12-hour shifts? If not, clarify.

EGC Response to NRC RAI 7

IMD technicians' outage schedule began on 10/5/2020 and ended on 10/23/2020 during Byron's outage. During this time, individuals worked 14 consecutive days of twelve-hour shifts followed by one or two days off before working 5 consecutive days of twelve-hour shifts the following week.

NRC RAI 8

IMD Positions – For IMD personnel who supported Dresden's outage for 14 days, what are the calendar start and end dates of this 14-day period? What was the shift duration and pattern of days on and off? Were the shifts fixed or rotating?

EGC Response to NRC RAI 8

IMD technicians supported Dresden's outage from 10/25/2020 (night shift) to 11/8/2020. During this time, they worked fixed twelve-hour shifts of either nights from 1900 to 0700 or days from 0700 to 1900. The technicians and supervisors were given a day or two days off prior to resuming their online schedule at Byron.

NRC RAI 9

IMD Positions – Is the online schedule to be understood as individuals are working 40-hours per week? Are these shifts fixed or rotating? Is this the schedule planned during the requested extension of the exemption?

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EGC Response to NRC RAI 9

The IMD technicians work on fixed shifts. The online schedule is 8 hours a day for three different shifts from Monday through Friday with individuals working 40-hours a week. The day shift is from 0700-1530, afternoon shift is from 1500-2330, and midnight shift is from 2300-0730. This is the schedule that is planned to be worked for the requested extension of the exemption.

NRC RAI 10

Mechanical Maintenance Department (MMD) Positions – For the MMD personnel who supported Dresden's outage for 14 days, what were the calendar dates of the support? What were the shift hours worked and the schedule of days on and days off? Were the shifts fixed or rotating?

EGC Response to NRC RAI 10

MMD technicians supported Dresden's outage from 10/25/2020 (night shift) to 11/8/2020. During this time, they worked fixed twelve-hour shifts of either nights from 1900 to 0700 or days from 0700 to 1900. The technicians and supervisors were given days off prior to supporting Dresden's outage and one day off prior to resuming their online schedule at Byron to ensure they received 6 days off in a rolling 30 day period.

NRC RAI 11

MMD Positions –Is the online schedule to be understood as individuals working 40-hours per week? Are these shifts fixed or rotating? Is this the schedule planned during the requested extension of the exemption?

EGC Response to NRC RAI 11

The MMD technicians work on fixed shifts. The online schedule is 8 hours a day for three different shifts from Monday through Friday with individuals working 40-hours a week. The day shift is from 0700-1530, afternoon shift is from 1500-2330, and midnight shift is from 2300-0730. This is the schedule that is planned to be worked for the requested extension of the exemption.

NRC RAI 12

The licensee's letter dated November 24, 2020 states that since the end of the outage, 2 Chemistry Technicians have utilized alternative controls due to call offs from COVID-19 cases. Is this to be understood as the only cases in which actual hours worked deviated from the outage and online schedules described in this letter? If not, for each group of positions covered in the table, describe the extent to which actual hours worked deviated from the schedules described in this letter.

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EGC Response to NRC RAI 12

For group of positions covered in Reference 3, the following positions deviated from the online schedules since the end of the outage described in the letter:

- 1) For Operations position, each of the thirteen operators worked an additional twelve-hour shift due to call offs.
- 2) For Radiation Protection position, one technician worked an additional eight hours on two separate occasions due to a call off.
- 3) For Chemistry position, each of the two technicians worked two sixteen-hour shifts due to call offs.

Following the schedule deviation, the individuals' subsequent shifts were adjusted to maintain compliance with the alternative controls.

The above information provides the requested information of how cumulative fatigue has been managed for the various positions during the initial alternative work hour controls exemption and how it will be managed during the requested extension of the exemption period.

References:

1. NRC letter from H. Nieh to NEI, "U.S. Nuclear Regulatory Commission Planned Actions Related to the Requirements for Work Hour Controls During the Coronavirus Disease 2019 Public Health Emergency," dated March 28, 2020 (ML20087P237).
2. NRC letter from H. Nieh to NEI, "U.S. Nuclear Regulatory Commission Updated Planned Actions Related to Certain Requirements for Operating and Decommissioning Reactor Licensees During the Coronavirus Disease 2019 Public Health Emergency," dated November 10, 2020 (ML20261H515).
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