
Watts Bar Nuclear Plant Unit 2

Watts Bar Nuclear Plant (WBN) Unit 2
Pre-submittal Meeting for Request for Exemption from Requirements of
10 CFR 26.205(d)(4) and 10 CFR 26.205(d)(6)

April 12, 2022

Agenda

- Introduction
- Affected Regulations
- Proposed Exemption
- Basis for Proposed Exemption
- Mitigating Actions
- Summary
- Precedents
- Schedule for Submittal

Introduction

- The purpose of the meeting is to provide information for a proposed one-time exemption pursuant to 10 CFR 26.9, “Specific exemptions,” for WBN Unit 2.
- The proposed exemption would allow the use of the less restrictive work hour limitations described in 10 CFR 26.205(d)(4) to support activities required for the WBN Unit 2 steam generator replacement (SGR) project (**i.e., Category A personnel**).
- Additionally, TVA is requesting an exemption from portions of 10 CFR 26.205(d)(6) for those personnel that perform normal outage shutdown startup, maintenance, fuel handling, and modification activities that are not related to the SGR Project (**i.e., Category B personnel**).
- Further information on the Category A and B personnel is provided later in the presentation.

Introduction (cont'd)

- The WBN Unit 2 SGR outage (U2R4) outage commenced on March 1, 2022, and was originally planned to be completed in mid-May 2022. U2R4 is now scheduled to be completed in early June 2022.
- TVA requests approval of this exemption request by April 30, 2022, which is when the 60-day requirement of 10 CFR 26.205(d)(4) expires.
- TVA is requesting these exemptions for a period not to exceed 60 days beyond the end of the current 60-day allowance of 10 CFR 26.205(d)(4) (i.e., no later than June 29, 2022).

Affected Regulations

- 10 CFR 26.9, Specific exemptions, states:

Upon application of any interested person or on its own initiative, the Commission may grant such exemptions from the requirements of the regulations in 10 CFR 26 as it determines are authorized by law and will not endanger life or property or the common defense and security, and are otherwise in the public interest.

Affected Regulations(cont'd)

- 10 CFR 26.4(a) defines the categories of individuals that are subject to the work hour controls specified in 10 CFR 26.205. These categories include:
 - (1) Operating or onsite directing of the operation of systems and components that a risk informed evaluation process has shown to be significant to public health and safety;
 - (2) Performing health physics or chemistry duties required as a member of the onsite emergency response organization minimum shift complement;
 - (3) Performing the duties of a fire brigade member who is responsible for understanding the effects of fire and fire suppressants on safe shutdown capability;
 - (4) Performing maintenance or onsite directing of the maintenance of SSCs that a risk informed evaluation process has shown to be significant to public health and safety; and
 - (5) Performing security duties as an armed security force officer, alarm station operator, response team leader, or watchman, hereinafter referred to as security personnel.
- The proposed exemption to 10 CFR 26.205(d)(4) applies to item (4) above.
- The proposed exemption to 10 CFR 26.205(d)(6) applies to items (1), (2), and (4) above.

Affected Regulations (cont'd)

- 10 CFR 26.205(d)(4) provides the following requirements:

During the first 60 days of a unit outage, licensees need not meet the requirements of § 26.205(d)(3) or (d)(7) for individuals specified in § 26.4(a)(1) through (a)(4), while those individuals are working on outage activities. However, the licensee shall ensure that the individuals specified in § 26.4(a)(1) through (a)(3) have at least 3 days off in each successive (i.e., non-rolling) 15-day period and that the individuals specified in § 26.4(a)(4) have at least 1 day off in any 7-day period ;

- 10 CFR 26.205(d)(6) provides the following requirement:

The 60-day periods in paragraphs (d)(4) and (d)(5) of this section may be extended for each individual in 7-day increments for each non-overlapping 7-day period the individual has worked not more than 48 hours during the unit or security system outage or increased threat condition, as applicable.

Proposed Exemption

- **Category A personnel** [those directly related to performing or supporting the SGR project activities as defined in 10 CFR 26.4(a)(4)]
 - TVA requests the application of the less restrictive work hour limitations described in 10 CFR 26.205(d)(4) to be applied to those support activities required for plant startup from the current extended outage, in lieu of the work hour limitations described in 10 CFR 26.205(d)(7). The proposed exemption would be applicable for a period not to exceed an additional 60 days to support the activities required for plant startup from the current U2R4 extended outage. The proposed exemption would apply to the following personnel covered by 10 CFR 26.4(a)(4). During the period of exemption, TVA will apply the limitations of 10 CFR 26.205(d)(4) as applicable to the individuals performing the duties specified in 10 CFR 26.4(a)(4).
- **Category A personnel** include pipefitters, boilermakers, operating engineers, and iron workers.

Proposed Exemption (cont'd)

- **Category B personnel** (personnel that perform normal outage shutdown startup, maintenance, fuel handling, and modification activities that are not related to the SGR Project)
 - TVA requests an exemption from portions of 10 CFR 26.205(d)(6) for those personnel that perform normal outage shutdown startup, maintenance, fuel handling, and modification activities that are not related to the SGR Project covered by 10 CFR 26.4(a)(1), (a)(2), and (a)(4). 10 CFR 26.205(d)(6) states that the 60-day period in 10 CFR 26.205(d)(4) may be extended for each individual in seven-day increments for each non-overlapping seven-day period the individual has worked not more than 48 hours during the unit or security system outage or increased threat condition, as applicable. Category B personnel will have a rest period equivalent to or greater than the break workers gets between back-to-back outages to reset them for the reactor reassembly and startup portion of the outage.

Basis for Proposed Exemption

- The U2R4 SGR Outage commenced on March 1, 2022. Therefore, per 10 CFR 26.205(d)(4), the 60-day period allowed for continuous 72-hour work weeks will expire on April 30, 2022.
- WBN Unit 2 is performing an SGR outage, which is an extensive complex outage involving the removal of the four original SGs (OSG) and replacing them with the four replacement SGs (RSG). This evolution involves complex highly skilled craft workers.
- The U2R4 outage has experienced significant schedule delays in removal of the OSGs primarily due to the following:
 - Weather delays
 - Emergent discovery issues
 - Delays in site access

Basis for Proposed Exemption (cont'd)

- The SGR Project re-baselined the outage schedule based on current available resources and projections on April 12, 2022.
 - This estimate depicts a completion of major SGR activities with a return of the polar crane and containment back to the plant to begin core reload activities in mid-May 2022 (Schedule Milestone SGM0184).
 - This projected timeline aligns with a breaker closed and generator synced to the grid in early June 2022 (Schedule Milestone CLOSEBREAKER).
- The current revised schedule **does not account** for additional weather delays or emergent additional discovery issues with SG installation.
- For the SGR project to complete without additional impact to the WBN Unit 2 return to service date, this exemption requests a one-time 60-day extension for the time allowed to work 72-hour work weeks. Fatigue impact mitigating actions will be taken as discussed later in the presentation.

Basis for Proposed Exemption (cont'd)

- Regulatory position C.10 of Regulatory Guide 5.73, “Fatigue Management for Nuclear Power Plant Personnel,” allows personnel to work extended hours during successive unit outages provided an adequate interval is provided between the unit outages to address the effects of cumulative fatigue.
- Review of the hours worked during the period of the work hour exemption indicate that collectively individuals had periods of reduced hours, and the additional minimum 30-day period of working normal average hours provides assurance that cumulative fatigue will not compromise the ability of these individuals to safely and competently perform their duties.
- Therefore, the proposed exemption will not endanger life or property or the common defense and security, and is otherwise in the public interest.

Mitigating Actions

- Category A Personnel
 - During this extended period, prior to craft going to the field, the expectation will include performance and discussion of signs of fatigue with personnel for both self-awareness and keeping watch on crew members. The station will promote fatigue awareness and perform targeted observations of fatigue signs using an observation program.
- Category B Personnel
 - Category B personnel will have their outage time reset back to 60 days of 72-hour work weeks after a rest period equivalent to performing the safe transition from one outage to another prior to the turnover of the polar crane from SGR Project team to the TVA outage team (Outage Milestone SGM0184).

Summary

- TVA is requesting a one-time exemption pursuant to 10 CFR 26.9, for WBN Unit 2 to allow the use of the less restrictive work hour limitations described in 10 CFR 26.205(d)(4) to support activities required for the WBN Unit SGR project (**i.e., Category A personnel**)
- TVA is requesting these exemptions for a period not to exceed 60 days beyond the end of the current 60-day allowance of 10 CFR 26.205(d)(4) (**i.e., no later than June 29, 2022**)
- Additionally, TVA is requesting an exemption from 10 CFR 26.205(d)(6) for those personnel that perform normal outage shutdown startup, maintenance, fuel handling, and modification activities that are not related to the SGR Project (**i.e., Category B personnel**).

Precedents

- On November 10, 2009, the NRC approved an exemption request for the Donald C. Cook Nuclear Plant Unit 1 (D.C. Cook) which applied the requirements of 10 CFR 26.205(d)(4) for a 60-day period to encompass the restart from an extended outage (ML092630003 and ML09263004). The D.C. Cook exemption is relevant in that the provisions of 10 CFR 26.205(d)(4) were approved for application during the restart from an extended outage.
- On June 24, 2010, the NRC approved an exemption request for the Davis-Besse Nuclear Power Station (DBNPS) Unit 1, which applied the requirements of 10 CFR 26.205(d)(4) and (d)(5) to support the restart from an extended outage (ML101730457). Davis-Besse is cited as precedent because it also sought an exemption because of an extended outage, for a period not to exceed 60 days. Davis-Besse personnel transitioned to an online schedule that complied with 10 CFR 26.205(d)(3) requirements.
- On October 28, 2013, the NRC approved an exemption request for the Fort Calhoun Station, Unit 1 from 10 CFR 26.205 (ML13274A025 and ML13274A026). Fort Calhoun is also cited as precedent because it also sought an exemption because of an extended outage. The exemption allowed the use of the less restrictive working hour limitations described in 10 CFR 26.205(d)(4) to support activities required for plant startup from an extended outage, for a period not to exceed 45 days. Fort Calhoun Station Unit 1 also previously received an NRC approved exemption from 10 CFR 26.205 on June 11, 2013 (ML13157A135 and ML13157A139).

Schedule for Submittal

- TVA to submit exemption request to NRC by April 15, 2022.
- TVA requests NRC approval by April 30, 2022, which is when the 60-day requirement of 10 CFR 26.205(d)(4) expires.

TVA

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