



## **NUCLEAR REGULATORY COMMISSION**

**[Docket No. 50-328; NRC-2024-0226]**

**Tennessee Valley Authority; Sequoyah Nuclear Plant, Unit 2; Exemption**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Notice; issuance.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) has issued an exemption in response to a request dated November 27, 2024, from Tennessee Valley Authority. The exemption authorizes a one-time exemption for Sequoyah Nuclear Plant, Unit 2, to allow the use of the less restrictive work hour limitations described in NRC regulations for a 21-day period starting no earlier than January 6, 2025, and no later than January 31, 2025.

**DATES:** The exemption was issued on December 23, 2024.

**ADDRESSES:** Please refer to Docket ID NRC-2024-0226 when contacting the NRC about the availability of information regarding this document. You may obtain publicly available information related to this document using any of the following methods:

- *Federal Rulemaking Website:* Go to <https://www.regulations.gov> and search for Docket ID NRC-2024-0226. Address questions about Docket IDs in Regulations.gov to Stacy Schumann; telephone: 301-415-0624; email: [Stacy.Schumann@nrc.gov](mailto:Stacy.Schumann@nrc.gov). For technical questions, contact the individual listed in the “For Further Information Contact” section of this document.

- *NRC’s Agencywide Documents Access and Management System (ADAMS):* You may obtain publicly available documents online in the ADAMS Public Documents collection at <https://www.nrc.gov/reading-rm/adams.html>. To begin the search, select “Begin Web-based ADAMS Search.” For problems with ADAMS, please contact the NRC’s Public Document Room (PDR) reference staff at 1-800-397-4209, at 301-415-4737, or by email to [PDR.Resource@nrc.gov](mailto:PDR.Resource@nrc.gov). The exemption request dated November 27, 2024, is available in ADAMS under Accession No. ML24332A119.

- *NRC's PDR*: The PDR, where you may examine and order copies of publicly available documents, is open by appointment. To make an appointment to visit the PDR, please send an email to [PDR.Resource@nrc.gov](mailto:PDR.Resource@nrc.gov) or call 1-800-397-4209 or 301-415-4737, between 8 a.m. and 4 p.m. eastern time (ET), Monday through Friday, except Federal holidays.

**FOR FURTHER INFORMATION CONTACT:** Perry Buckberg, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone: 301-415-1383, email: [Perry.Buckberg@nrc.gov](mailto:Perry.Buckberg@nrc.gov).

**SUPPLEMENTARY INFORMATION:** The text of the exemption is attached.

Dated: January 8, 2025.

For the Nuclear Regulatory Commission.

**Perry H. Buckberg,**  
*Senior Project Manager,  
Plant Licensing Branch II-2,  
Division of Operating Reactor Licensing,  
Office of Nuclear Reactor Regulation.*

**Attachment – Exemption.**

**NUCLEAR REGULATORY COMMISSION**

**Docket No. 50-328**

**Tennessee Valley Authority**

**Sequoyah Nuclear Plant, Unit 2**

**Exemption**

**I. Background.**

The Tennessee Valley Authority (TVA, the licensee) is the holder of Renewed Facility Operating License No. DPR-79, which authorizes operation of Sequoyah Nuclear Plant (Sequoyah), Unit 2. The license provides, among other things, that the facility is subject to all applicable rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (NRC, the Commission) now or hereafter in effect. Sequoyah consists of two pressurized-water reactors located in Hamilton County, Tennessee.

**II. Request/Action.**

By letter dated November 27, 2024 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML24332A119), and pursuant to title 10 of the *Code of Federal Regulations* (10 CFR) part 26, "Fitness for Duty Programs," section 26.9, "Specific exemptions," TVA requested a one-time exemption from the work hour requirements in 10 CFR 26.205, "Work hours," paragraph (d)(7). Specifically, TVA requested to use the work hour requirements in 10 CFR 26.205(d)(4), which are applicable during the first 60 days of a unit outage, in lieu of the work hour requirements in 10 CFR 26.205(d)(7), for a period of no more than 21 days for individuals specified in 10 CFR 26.4(a)(1), (a)(2), and (a)(4).

Licensees are required to control the work hours of any individual who performs

the duties identified in 10 CFR 26.4(a). One way of doing this is by complying with the 10 CFR 26.205(d)(7) requirements for maximum average work hours wherein the individuals may not work more than a weekly average of 54 hours, calculated using an averaging period of up to 6 weeks, which advances by 7 consecutive calendar days at the finish of every averaging period. However, according to 10 CFR 26.205(d)(4), licensees need not meet these requirements during the first 60 days of a unit outage for individuals specified in 10 CFR 26.4(a)(1) through (a)(4), while those individuals are working on outage activities. Instead, licensees shall ensure that the individuals specified in 10 CFR 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 10 CFR 26.4(a)(4) have at least 1 day off in any 7-day period. This alternative work hour requirement is known as the outage minimum days off (MDO) requirement.

Sequoyah, Unit 2, entered an unplanned shutdown on July 30, 2024. During this unplanned outage, the licensee commenced an extended turbine generator outage. This allowed the licensee to administer outage work hour controls in accordance with 10 CFR 26.205(d)(4). Although these outage work hour controls ended after the first 60 days of the outage on September 29, 2024, the outage remains in progress and is scheduled to be completed in April 2025. Due to the unplanned nature of the shutdown, TVA was unable to complete the testing of the main steam safety valves. In its exemption request, TVA stated that the operating experience with past refueling outages establishes the need to use outage work hour controls to provide the necessary conditions to complete the testing of the main steam safety valves and the associated activities to identify and resolve any issues. Since the outage work hour controls have already ended for this outage, TVA requested a one-time exemption from the non-outage work hour controls in 10 CFR 26.205(d)(7) for personnel in the categories described in 10 CFR 26.4(a)(1), (a)(2), and (a)(4) so that they may work the less restrictive outage work hours as described in 10 CFR 26.205(d)(4) to support a main steam safety valve maintenance window from January 6, 2025, to January 31, 2025, for a period not to exceed 21 days.

Additionally, the licensee stated that the emergency diesel generator (EDG) outages are scheduled to immediately follow the proposed 3-week maintenance window. Several individuals in operations and maintenance roles included in the proposed exemption request would also work on EDG outage activities. The licensee plans to perform that work in compliance with the non-outage work hour controls in 10 CFR 26.205(d)(7) with the averaging period beginning immediately after the exemption period. Therefore, this exemption would also relieve the licensee from the 10 CFR 26.205(d)(7) requirements of including the preceding 21-day period in the rolling 6-week average of 54 hours, and instead the licensee would be able to treat the proposed maintenance window as an outage as described in 10 CFR 26.205(d)(4).

### **III. Discussion.**

Pursuant to 10 CFR 26.9, the Commission may, upon application of any interested person or on its own initiative, grant exemptions from the requirements of 10 CFR part 26 as it determines (1) are authorized by law; (2) will not endanger life or property; (3) will not endanger the common defense and security; and (4) are otherwise in the public interest.

#### **A. The Exemption Is Authorized by Law**

The proposed exemption would authorize a one-time exemption from the requirements of 10 CFR 26.205(d)(7) to allow the use of the less restrictive work hour controls in 10 CFR 26.205(d)(4) for up to an additional 21 days. As stated, 10 CFR 26.9 allows the Commission to grant exemptions from the requirements of 10 CFR part 26, including 10 CFR 26.205(d)(7), when, in part, the exemptions are authorized by law. Exemptions are authorized by law where they are not expressly prohibited by statute or regulation. A proposed exemption is implicitly authorized by law if it will not endanger life or property or the common defense and security and is otherwise in the public interest and no other provisions in law prohibit, or otherwise restrict, its application. The NRC staff has determined that no provisions in law expressly prohibit or otherwise restrict the

application of the requested exemption. The NRC staff has also determined, as explained in subsequent sections of this document, that the requested exemption will not endanger life or property or the common defense and security and is otherwise in the public interest. Therefore, the exemption is authorized by law.

#### **B. The Exemption Will Not Endanger Life or Property**

The purpose of 10 CFR part 26, subpart I, "Managing Fatigue," is to ensure that fatigue does not compromise the abilities of specified individuals to perform their duties safely and competently. The purpose of 10 CFR 26.205(d)(4) is to provide licensees flexibility in scheduling required days off while accommodating more intense work schedules associated with a unit outage for a limited period of time.

Under the proposed exemption, personnel in the categories described in 10 CFR 26.4(a)(1), (a)(2), and (a)(4) would be permitted to work in accordance with the less restrictive outage MDO requirements in 10 CFR 26.205(d)(4) for up to an additional 21 days. TVA cited regulatory position C.10 of NRC Regulatory Guide 5.73, "Fatigue Management for Nuclear Power Plant Personnel" (ML083450028), which discusses the expectation that licensees should confirm that an individual transitioning from an outage at one plant to another "has had a 34-hour break period within the 9 days that precede the day on which the individual begins working for the receiving licensee." TVA stated that the workers affected by the proposed exemption will have received a rest and reset period prior to starting the 72-hour work weeks during the maintenance window. In addition, TVA stated that from September 30, 2024, through November 17, 2024, personnel in the categories described in 10 CFR 26.4(a)(1), (a)(2), and (a)(4) have worked under the non-outage work hour controls in 10 CFR 26.205(d)(7) and will continue to do so until the proposed period of the exemption, and have been granted annual leave and other personal time-off as requested.

The NRC staff determined that the added mitigating actions of providing a rest and reset period prior to the proposed exemption period, maintaining the non-outage work hour controls in 10 CFR 26.205(d)(7) during the 14-week period from the end of the

60-day initial outage period until the proposed exemption period while allowing the affected workers to use annual leave or other personal time-off as requested, and the use of an outage oversight plan for fatigue assessments during the proposed work period will allow TVA to adequately manage cumulative fatigue during the proposed exemption period of up to 21 days. Acute fatigue will be managed using the outage MDO requirements combined with fatigue assessments by supervisors, which is consistent with common practice during unit outages. Based on this, the NRC staff finds that the proposed mitigating actions will adequately manage cumulative and acute fatigue. Therefore, the exemption will not endanger life or property.

**C. The Exemption Will Not Endanger the Common Defense and Security**

The proposed exemption would authorize a one-time exemption from the requirements of 10 CFR 26.205(d)(7) to allow the use of the less restrictive work hour controls in 10 CFR 26.205(d)(4) for up to an additional 21 days. The proposed exemption is not applicable to security personnel, nor does it have any relation to or impact on security issues. Therefore, the exemption will not endanger the common defense and security.

**D. The Exemption Is Otherwise in the Public Interest**

The proposed exemption would authorize a one-time exemption from the requirements of 10 CFR 26.205(d)(7) to allow the use of the less restrictive work hour controls in 10 CFR 26.205(d)(4) for up to an additional 21 days. In considering whether this exemption would be in the public interest, the NRC staff considered several factors, including:

- the unplanned nature of the shutdown and extended outage;
- the public health and safety interests of the communities impacted by the safe operation of the plant; and
- the potential adverse impacts on communities resulting from any further extension of the shutdown of the unit, which could challenge the reliability of

the service territory and result in not meeting reserve capacity for the warmer months.

The NRC staff considered that the current outage was not planned and has extended beyond the initial 60 days of the less restrictive outage work hour controls in 10 CFR 26.205(d)(4) and that the required work needed to complete testing, discovery, and resolution of issues has not been completed. The NRC staff also considered TVA's reasonable efforts to develop a proposed maintenance window schedule that accommodates the completion of items needed for testing and to make potential repairs that may require a long-lead time. The NRC staff noted that TVA also plans to complete maintenance on the EDGs while additional resources are onsite immediately following the proposed exemption period. These maintenance activities are important to assuring the safe operation of the unit.

In its exemption request, TVA discussed the potential impacts of the Commission not granting the proposed exemption. TVA stated that without this exemption, TVA would be challenged from a reliability perspective, as the area supplied by the unit transitions further into a period of the year characterized by warmer weather and higher loads. TVA discussed the likelihood that without the exemption, TVA may need to commit other generating assets or purchase replacement power from the market, which could introduce reliability risk.

The NRC staff considered the balance of public interest considerations. The NRC staff considered the importance of the maintenance activities and the potential impacts of not granting the exemption, including the potential need for TVA to extend the Sequoyah, Unit 2, outage if non-outage work hour controls were to reduce the availability of personnel. The NRC staff also considered the potential impacts of granting the exemption, including impacts that could result from an increase in overall cumulative fatigue due to personnel working longer hours for an extended period beyond that of a typical outage under the established regulatory limits. However, as explained, TVA currently has mitigating actions in place for managing cumulative and acute fatigue that

include adequate rest intervals and assessments for fatigue. Also, TVA will have adequately managed fatigue for personnel in the categories described in 10 CFR 26.4(a)(1), (a)(2), and (a)(4) leading up to the exemption period through compliance with the requirements in 10 CFR 26.205(d)(7). Based on these considerations, the NRC staff finds that there are no expectations for an impact on the public health and safety as a result of an increase in fatigue for the proposed period of up to 21 days. The NRC staff also finds that an earlier conclusion of the Sequoyah, Unit 2, extended outage may allow TVA to meet elevated electrical demands without relying on purchasing replacement power. Finally, the NRC staff finds that TVA took reasonable measures in its project planning to ensure that all testing, maintenance, and resolution of discovery items will be completed within the proposed exemption period. Therefore, the exemption is otherwise in the public interest.

#### **E. Environmental Considerations**

The Commission has determined that granting the proposed one-time exemption from the requirements of 10 CFR 26.205(d)(7) to allow the use of the less restrictive work hour controls in 10 CFR 26.205(d)(4) for up to an additional 21 days involves (1) no significant hazards consideration, (2) no significant change in the types or significant increase in the amounts of any effluents that may be released offsite, (3) no significant increase in individual or cumulative public or occupational radiation exposure, (4) no significant construction impact, and (5) no significant increase in the potential for or consequences from radiological accidents.

(1) Under 10 CFR 50.92(c), there is no significant hazards consideration if the action does not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The proposed exemption is administrative in nature because it provides an additional period when less restrictive outage work hour controls can apply for personnel

in the categories described in 10 CFR 26.4(a)(1), (a)(2), and (a)(4). The proposed exemption has no effect on structures, systems, and components (SSCs) and no effect on the capability of the SSCs to perform their design function. The proposed exemption does not make any changes to the facility or operating procedures and does not alter the design, function, or operation of any plant equipment. Therefore, the exemption does not increase the probability or consequences of an accident previously evaluated.

Similarly, the proposed exemption does not authorize any physical changes to any SSCs involved in the mitigation of any accidents. Therefore, the exemption does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed exemption does not authorize alteration of the design basis or any safety limits for the plant. The exemption would not impact station operation or any SSC that is relied upon for accident mitigation. Therefore, the exemption does not involve a significant reduction in a margin of safety.

For these reasons, the NRC staff has determined that approval of the proposed exemption involves no significant hazards consideration.

(2) The proposed exemption does not authorize any changes to the design basis requirements for the SSCs at Sequoyah, Unit 2, that function to limit the release of non-radiological effluents, radiological liquid effluents, or radiological gaseous effluents during and following postulated accidents. Additionally, the exemption does not change any requirements with respect to the conduct of radiation surveys and monitoring. Therefore, there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

(3) The proposed exemption does not affect the limits on the release of any radioactive material or the limits provided in 10 CFR part 20 for radiation exposure to workers or members of the public. Additionally, the exemption will not increase or decrease the amount of work activities that must be completed in order to connect the reactor unit to the electrical grid. Therefore, there is no significant increase in individual

or cumulative public or occupational radiation exposure.

(4) The proposed exemption does not involve any construction. Therefore, there is no significant construction impact.

(5) The proposed exemption does not alter any of the assumptions or limits in the licensee's accident analyses. Therefore, there is no significant increase in the potential for or consequences from radiological accidents.

Based on the foregoing and because the requirements from which the exemption is sought involve other requirements of an administrative, managerial, or organizational nature, the exemption meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(25)(vi)(I). Therefore, in accordance with 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with granting the proposed exemption.

#### **IV. Conclusion.**

Accordingly, the Commission has determined that, pursuant to 10 CFR 26.9, the exemption is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest. Therefore, the Commission hereby grants TVA a one-time exemption from 10 CFR 26.205(d)(7) for personnel in the categories described in 10 CFR 26.4(a)(1), (a)(2), and (a)(4) to allow the use of the outage MDO requirements in 10 CFR 26.205(d)(4) for a 21-day period starting no earlier than January 6, 2025, and no later than January 31, 2025. While the exemption is in effect, TVA will ensure that individuals specified in 10 CFR 26.4(a)(1) and (a)(2) have at least 3 days off in each successive (i.e., non-rolling) 15-day period and that individuals specified in 10 CFR 26.4(a)(4) have at least 1 day off in any 7-day period. The use of the outage MDO requirements and an outage plan will adequately manage cumulative and acute fatigue for covered personnel. The exemption ends either at the end of the approved 21-day period or at the time when Sequoyah, Unit 2, is connected to the electrical grid, whichever occurs first.

Dated: December 23, 2024.

For the Nuclear Regulatory Commission.

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Aida Rivera-Varona, Deputy Director,  
Division of Operating Reactor Licensing,  
Office of Nuclear Reactor Regulation.

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