

NUCLEAR REGULATORY COMMISSION
Virginia Electric and Power Company
North Anna Power Station, Unit Nos. 1 and 2
Docket Nos. 50-338 and 50-339
Exemption

1.0 BACKGROUND

Virginia Electric Power Company (VEPCO, the licensee) is the holder of Facility Operating License Nos. NPF-4 and NPF-7, which authorize operation of the North Anna Power Station, Unit Nos. 1 and 2 (North Anna) respectively. The license provides, among other things, that the facility is subject to all rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (NRC or the Commission) now or hereafter in effect. The facility consists of two pressurized water reactors located in Louisa County, Virginia.

2.0 REQUEST/ACTION

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 26, "Fitness For Duty Programs," Subpart I, "Managing Fatigue," requires that individuals described in 10 CFR 26.4(a)(1) through (a)(5) are subject to the work hour controls provided in 10 CFR 26.205. By letter dated February 10, 2011 (Agencywide Documents Access and Management System (ADAMS), Accession No. ML110450583), and supplemented March 10, 2011 (ADAMS Accession No. ML110740442), and pursuant to 10 CFR 26.9, VEPCO, doing business as Dominion, requested an exemption from the requirements of 10 CFR 26.205(c) and (d) during declarations of severe weather conditions such as tropical storm and hurricane force winds at the North Anna site. A subsequent response to requests for additional information (RAI) is dated May 26, 2011 (ADAMS Accession No. ML111470265).

The requested exemption applies to individuals who perform duties identified in 10 CFR 26.4(a)(1) through (a)(5) who are designated to perform work as a member of the North Anna hurricane response organization (HRO). The exemption request states that the station HRO typically consists of enough individuals to staff two 12-hour shifts of workers consisting of personnel from operations, maintenance, engineering, emergency planning, radiation protection, chemistry, site services and security to maintain the safe and secure operation of the plant.

Entry conditions for the requested exemption occur when the site activates the station HRO and the Site Vice President (or his designee) determines that travel conditions to the site will potentially become hazardous such that HRO staffing will be required based on verifiable weather conditions. Verifiable weather conditions are defined in the exemption request as when the National Weather Service issues an Inland High Wind Warning for Hurricane Force Winds for Louisa County or when the Dominion Weather Center projects tropical storm or hurricane force winds onsite within 12 hours.

After the high wind conditions pass, wind damage to the plant and surrounding area might preclude sufficient numbers of individuals from immediately returning to the site. Additionally, if mandatory civil evacuations were ordered, this would also delay the return of sufficient relief personnel. The exemption request states that the exemption will terminate when hurricane watches and warnings or inland hurricane watches and warnings have been cancelled; when weather conditions and highway infrastructure support safe travel; and when the Site Vice President or his designee determine that sufficient personnel who perform the duties identified in 10 CFR 26.4(a)(1) through (a)(5) are available to restore normal shift rotation and thereby meet the requirements of 10 CFR 26.205(c) and (d).

3.0 DISCUSSION

Pursuant to 10 CFR 26.09, the Commission may, upon application of an interested person or on its own initiative, grant exemptions from the requirements of 10 CFR Part 26 when the exemptions are authorized by law and will not endanger life or property or the common defense and security, or are otherwise in the public interest.

Authorized by Law

The exemption being requested for North Anna would allow the licensee to not meet the work hour control requirements of 10 CFR 26.205(c) and (d), which would allow the licensee to sequester specific individuals on site, prior and subsequent to severe weather conditions such as tropical storms and hurricanes. No law exists which precludes the activities covered by this exemption request. As stated above, 10 CFR 26.09 allows the NRC to grant exemptions from the requirements of 10 CFR Part 26. The NRC staff has determined that granting of the licensee's proposed exemption will not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations. Therefore, the exemption is authorized by law.

No Endangerment of Life or Property and Otherwise in the Public Interest

This exemption request expands on an exception that is already provided in 10 CFR Part 26, during declared emergencies, and allows the licensee to not meet the requirements in 10 CFR 26.205(c) and (d) during time periods just prior and subsequent to the existing exception (10 CFR 26.207(d)). Granting this exemption will allow the licensee to ensure that the control of work hours does not impede the ability to use whatever staff resources may be necessary to respond to a severe weather event to ensure the plant reaches and maintains a safe and secure status. Therefore, this exemption will not endanger life or property or the common defense and security. Thus, this exemption request is in the interest of the public health and safety.

The Fatigue Management provisions found in 10 CFR Part 26 Subpart I are designed as an integrated approach to managing both cumulative and acute fatigue through a partnership

between licensees and individuals. It is the responsibility of the licensees to provide training to individuals regarding fatigue management. It is also the responsibility of the licensee to provide covered workers with work schedules that are consistent with the objective of preventing impairment from fatigue due to duration, frequency or sequencing of successive shifts.

Individuals are required to remain fit-for-duty while at work.

- Section 26.205(c) is the requirement to schedule individuals work hours consistent with the objective of preventing impairment from fatigue due to duration, frequency or sequencing of successive shifts. The requirement to schedule is important as the work hour controls, contained in 10 CFR 26.205, are not necessarily sufficient to ensure that individuals will not be impaired owing to the effects of fatigue.
- Section 26.205(d) provides the actual work hour controls. Work hour controls are limits on the number of hours an individual may work; limits on the minimum break times between work periods; and limits for the minimum number of days off an individual must be given.
- Section 26.205(b) is the requirement to count work hours and days worked. 10 CFR 26.205(d)(3) is the requirement to look back into the “calculation period” so that all work hours can be included in appropriate work hour calculations, when a covered individual resumes covered work.
- Section 26.207(d) provides an allowance for licensees to not meet the requirements of Sec. 26.205(c) and (d) during declared emergencies as defined in the licensee's emergency plan.

North Anna is located in Louisa County, Virginia, and is approximately 40 miles north-northwest of Richmond, Virginia. Historical analysis of severe weather in the vicinity of the station shows that there has been approximately an average of two tropical storms or hurricanes every five years that have passed within 100 nautical miles of the site.

Consequently, there is a reasonable likelihood of North Anna being affected by severe wind events. The proposed exemption would support effective response to severe weather conditions when travel to and from the North Anna site may not be safe or even possible.

During these times, the North Anna HRO staff typically consists of enough individuals to staff two 12-hour shifts of workers consisting of personnel from operations, maintenance, engineering, emergency planning, radiation protection, chemistry, site services and security to maintain the safe and secure operation of the plant. This exemption would be applied to the period established by the entry and exit conditions regardless of whether the Emergency Plan is entered or not. Therefore, North Anna's exemption request can be characterized as having three parts: (1) high-wind exemption encompassing the period starting with the initiating conditions to just prior to declaration of an unusual event, (2) a period defined as immediately following a high-wind condition, when an unusual event is not declared, but when a recovery period is still required, and (3) a recovery exemption immediately following an existing 10 CFR 26.207(d) exception as discussed above.

Once North Anna has entered into a high-wind exemption or 10 CFR 26.207(d) exception, it would not need to make a declaration that it is invoking the recovery exemption. As a tropical storm or hurricane approaches landfall, high wind speeds in excess of wind speeds that create unsafe travel conditions are expected. The National Hurricane Center defines a hurricane warning as an announcement that hurricane conditions (sustained winds of 74 mph or higher) are expected somewhere within the specified coastal area within a 24-hour period. Severe wind preparedness activities become difficult once winds reach tropical storm force, a tropical storm warning is issued 36 hours in advance of the anticipated onset of tropical-storm-force winds (39 to 73 mph). Lessons learned that are included in NUREG-1474, "Effect of Hurricane Andrew on the Turkey Point Nuclear Generating Station from August 20-30, 1992," include the acknowledgement that detailed, methodical preparations should be made prior to the onset of hurricane force winds. The NRC staff finds the North Anna proceduralized actions are consistent with those lessons learned.

The entry conditions for the requested exemption could have been exceeded, yet wind speeds necessary for the declaration of an unusual event may not have been reached. This circumstance may still require a recovery period. Also, high winds that make travel unsafe but that fall below the threshold of an emergency, could be present for several days. After the high wind condition has passed, sufficient numbers of personnel may not be able to access the site to relieve the sequestered individuals. An exemption during these conditions is consistent with the intent of the 10 CFR 26.207(d) exemption. Following a declared emergency, under 10 CFR 26.207(d), due to high wind conditions, the site may not be accessible by sufficient numbers of personnel to allow relief of the sequestered individuals. Once the high wind conditions have passed and the unusual event exited, a recovery period might be necessary. An exemption during these circumstances is consistent with the intent of 10 CFR 26.207(d).

The licensee's RAI response letter of May 26, 2011, states that the HRO shift start times will be pre-planned and consistent and that the hurricane response plan is being revised to emphasize the need for pre-planned and consistent work shift start times to better facilitate fatigue management. The RAI response also states that the hurricane response plan will be updated to include that the HRO staff will be provided with an opportunity for restorative rest of at least 10 hours when off and that these individuals will not be assigned any duties when off-shift.

The exemption request specifies that the exemption is not for discretionary maintenance activities. The exemption request states that the exemption would provide for use of whatever plant staff and resources may be necessary to respond to a plant emergency and ensure that the units achieve and maintain a safe and secure status and can be safely restarted. The exemption request also states that maintenance activities for structures, systems and components that are significant to public health and safety will be performed, if required. The

NRC staff finds the exclusion of discretionary maintenance from the exemption request to be consistent with the intent of the exemption.

In its exemption request the licensee committed to maintain the following guidance in a North Anna site procedure:

- The conditions necessary to sequester site personnel that are consistent with the conditions specified in the North Anna exemption request.
- The provisions for ensuring that personnel who are not performing duties are provided an opportunity as well as accommodations for restorative rest.
- The condition for departure from this exemption, consistent with the Site Vice President's (or his designee's) determination that adequate staffing is available to meet the requirements of Part 26.205(c) and (d).

In its RAI response letter the licensee committed to maintain the following guidance in its hurricane response procedure:

- Guidance that emphasizes the need for pre-planned and consistent work-shift start times to better facilitate fatigue management.
- Guidance that states that the Station Hurricane Response Organization staff will be provided an opportunity for at least 10 hours of restorative rest when off-shift and should not be assigned any duties when off-shift.

When the exemption period(s) ends, the licensee is immediately subject to the scheduling requirements of 10 CFR 26.205(c) and the work hour/rest break/days off requirements of 10 CFR 26.205(d), and must ensure that any individual performing covered work complies with these requirements. Section 26.205(d)(3) requires the licensee to "look back" over the calculation period and count the hours the individual has worked and the rest breaks and days off he/she has had, including those that occurred during the licensee-declared emergency. Hours worked must be below the maximum limits and rest breaks must be above the minimum requirements in order for the licensee to allow the individual to perform covered work. Days off and hours and shifts worked during the licensee-declared emergency and the exempted period

before and after the declared emergency, would be counted as usual in the establishment of the applicable shift schedule and compliance with the minimum-days-off requirements.

Granting these exemptions is consistent with 10 CFR 26.207(d) Plant Emergencies which allows the licensee to not meet the requirements of 10 CFR 26.205 (c) and (d) during declared emergencies as defined in the licensee's emergency plan. The Part 26 Statement of Considerations in the *Federal Register* on March 31, 2008, page 17148, states that "Plant emergencies are extraordinary circumstances that may be most effectively addressed through staff augmentation that can only be practically achieved through the use of work hours in excess of the limits of § 26.205(c) and (d)." The objective of the exemption is to ensure that the control of work hours do not impede a licensee's ability to use whatever staff resources may be necessary to respond to a plant emergency and ensure that the plant reaches and maintains a safe and secure status. The actions described in the exemption request and submitted procedures are consistent with the recommendations in NUREG-1474, "Effect of Hurricane Andrew on the Turkey Point Nuclear Generating Station from August 20-30, 1992." Also consistent with NUREG-1474, NRC staff expects the licensee would have completed a reasonable amount of hurricane preparation prior to the need to sequester personnel, in order to minimize personnel exposure to high winds.

The NRC staff has reviewed the exemption request from certain work hour controls during conditions of high winds and recovery from high wind conditions. Based on the considerations discussed above, the NRC staff has concluded that (1) there is a reasonable assurance that the health and safety of the public will not be endangered by the proposed exemption (2) such activities will be consistent with the Commission's regulations and guidance, and (3) the issuance of the exemption will not be contrary to the common defense and security or to the health and safety of the public.

Consistent with Common Defense and Security

This change has no relation to security issues. Therefore, the common defense and security is not impacted by this exemption.

4.0 CONCLUSION

Accordingly, the Commission has determined that, pursuant to 10 CFR 26.09, granting an exemption to the licensee from the requirements in 10 CFR 26.205(c) and (d) during severe wind events such as tropical storms and hurricanes and bounded by the entry and exit conditions of the exemption request, by allowing North Anna to sequester individuals to ensure the plant reaches and maintains a safe and secure status, is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. Therefore, the Commission hereby grants Virginia Electric Power Company an exemption from the requirement of 10 CFR 26.205(c) and (d) during periods of severe winds.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will not have a significant effect on the quality of the human environment published in the *Federal Register* on August 31, 2011 (76 FR 54259).

This exemption is effective upon issuance.

Dated at Rockville, Maryland, this 20th day of September 2011.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Joseph G. Giitter, Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation