

**NUCLEAR REGULATORY COMMISSION**

**[NRC-2010-0162]**

**STP Nuclear Operating Company**

**South Texas Project, Units 1 and 2**

**Docket Nos. 50-498 and 50-499**

**Exemption**

**1.0 BACKGROUND**

STP Nuclear Operating Company (STPNOC, the licensee) is the holder of Facility Operating Licenses numbered NPF-76 and NPF-80, which authorize operation of the South Texas Project (STP), Units 1 and 2, respectively. The licenses provide, among other things, that the facility is subject to all rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (NRC, the Commission) now or hereafter in effect.

The facility consists of two pressurized-water reactors located in Matagorda County, Texas.

**2.0 REQUEST/ACTION**

By letter dated September 21, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML092720178), and supplemented by letters dated October 14, 2009 (ADAMS Accession No. ML092930172), and February 11, April 19, and May 10, 2010 (ADAMS Accession Nos. ML100490048, ML101160042, and ML101340116, respectively), the licensee requested an exemption, pursuant to Section 26.9, "Specific exemptions," of Title 10 of the *Code of Federal Regulations* (10 CFR), 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.

The regulations in 10 CFR 26.205(c), "Work hours scheduling," a performance-based provision, require that licensees shall schedule the work hours of individuals who are subject to this section consistent with the objective of preventing impairment from fatigue due to duration, frequency, or sequencing of successive shifts. The regulations in 10 CFR 26.205(d), "Work hour controls," specify the maximum work hour limits, the minimum break requirements and the minimum day-off requirements for covered workers (defined below).

The regulations apply to individuals designated as the "storm crew" who are sequestered on-site to perform duties identified in 10 CFR 26.4(a)(1) through (a)(5). Those duties are: (1) operating or onsite directing of the operation of structures, systems and components (SSCs) 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's 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 watchperson [security personnel].

The storm crew members perform these duties and are designated as covered workers.

The licensee's request states that adherence to all work hour controls could impede the licensee's ability to use whatever staff resources may be necessary to respond to a plant emergency and ensure that the plant maintains a safe and secure status. The licensee requests exemption from the requirements of 10 CFR 26.205(c) and (d) during declaration of severe weather conditions associated with tropical storms and hurricane force winds. The

exemption would allow the storm crew to sequester on-site, as travel to and from the site during high-wind conditions may be hazardous or not possible.

According to the National Weather Service's Tropical Cyclone Classification, a sustained wind speed of 40 miles per hour (mph) makes travel unsafe for the common traveler (National Weather Service Glossary). If conditions worsen such that sustained winds of 73 mph are present on-site, then an unusual event will be declared. When an unusual event is declared, the licensee will shutdown the plant, and the exception under current regulations at 10 CFR 26.207(d), "Plant Emergencies," will allow the licensee not to meet the requirements of 10 CFR 26.205(c) and (d), from the time that the storm or hurricane sequestering conditions are met until severe weather exit conditions are sustained. The exemption will only apply to individuals in the storm crew who perform duties identified in 10 CFR 26.4(1) through (5).

The requested exemption is needed during initiation of high-wind conditions, and will continue after the exception under a declared emergency pursuant to current regulation at 10 CFR 10 CFR 26.207(d) has ended. The exemption will terminate upon declaration of the Emergency Operations Facility Director that sufficient personnel are able to return to the site to make the reconstitution of work hour control possible. When storm crew sequestering exit conditions are met, full compliance with 10 CFR 26.205(c) and (d) is again required.

### **3.0 DISCUSSION**

The Nuclear Regulatory Commission, pursuant to 10 CFR 26.9, requires that upon application of any interested person or on its own initiative, Commission may grant such exemptions from the requirements of the regulations at 10 CFR 26.205(c) and (d), 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."

The NRC staff has reviewed the licensee's request using the regulations contained in 10 CFR 26.205 and 10 CFR 26.207 and related Statements of Consideration in the 10 CFR Part 26 Final Rule published in the *Federal Register* on March 31, 2008 (73 FR 17148). Other references include:

- NUREG-0654, "Criteria for Preparation of and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants;"
- NRC Regulatory Guide 5.73, "Fatigue Management for Nuclear Power Plant Personnel," dated March 2009 (ADAMS Accession No. ML083450028);
- NRC Information Notice 93-53, "Effect of Hurricane Andrew on Turkey Point Nuclear Generating Station and Lessons Learned," dated July 20, 1993 (ADAMS Accession No. ML031070364);
- NRC Information Notice 93-53, Supplement 1, "Effect of Hurricane Andrew on Turkey Point Nuclear Generating Station and Lessons Learned," dated April 29, 2004 (ADAMS Accession No. ML031070490);
- NUREG-0933, "Resolution of Generic Safety Issues, Section 3, 'New Generic Issues: Issue 178: Effect of Hurricane Andrew on Turkey Point (Revision 2)'" ; and
- NUREG-1474, "Effect of Hurricane Andrew on the Turkey Point Nuclear Generating Station from August 20-30, 1992," produced jointly by the NRC and the Institute of Nuclear Power Operations (non-publicly available).

Based on its review, the NRC staff agrees that preparing the site for the onset of tropical storms and hurricanes, which includes sequestering enough essential personnel to provide for shift relief, is necessary to ensure adequate protection of the plant and personnel safety, would maintain protection of health and safety of the public, and would not adversely affect the common defense and security.

Under 10 CFR 26.207(d), licensees need not meet the requirements of 10 CFR 26.205(c) and (d) during declared emergencies (unusual event) as defined in the licensee's emergency plan. The STPNOC's exemption request states that during the period that STPNOC requested to be exempt from 10 CFR 26.205(c) and (d), STPNOC may meet the conditions for entering the emergency plan. Since 10 CFR 26.207(d) states that the licensees need not meet the requirements of 10 CFR 26.205(c) and (d) during the declared emergencies, there is no need for an exemption for members of the storm crew during the period of a declared emergency.

Therefore, STPNOC'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 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.

### **High-Wind Exemption**

A high-wind exemption encompasses the period starting with the initiating conditions (see list below) to just prior to the declaration of an unusual event (sustained winds of 73 mph are present onsite). As a tropical storm or hurricane approaches landfall, high wind speeds—in excess of wind speeds that create unsafe travel conditions—are expected. During these times, the National Weather Service typically publishes a projected path of the storm. This condition will be described as the "high-wind condition" or "period of high winds," (National Weather Service's Tropical Cyclone Classification).

For the purposes of this exemption, declaration of the entry condition allows any onsite individual who performs duties identified in 10 CFR 26.4(a)(1) through (a)(5) to not have to meet

the requirements of 10 CFR 26.205(c) and (d) if they are designated as part of the storm crew.

This entry condition occurs when:

- The site enters the STP Hurricane Plan.
- The Emergency Operations Facility (EOF) Director determines that travel conditions to the site will potentially become hazardous such that storm crew staffing will be required based on verifiable weather conditions (STP procedure 0PGP03-ZV-0002, Rev. 4, "Hurricane Plan").
- Verifiable weather conditions are defined as when the site is located within the National Hurricane Center 5-day cone of probability for predicted winds of Tropical Storm or Hurricane force impact.

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 concludes that STP's proceduralized actions are consistent with the lessons learned.

#### **Recovery Exemption Immediately Following a High-Wind Exemption**

The period defined as after the high-wind exemption, possibly several days, when an unusual event was not declared, but a recovery period is still necessary, as high winds exist that make travel unsafe. Also, after the high-wind condition has passed, sufficient numbers of personnel may not be able to access the site to relieve the sequestered storm crew. An exemption during these conditions is consistent with the intent of the 10 CFR 26.207(d) exception.

#### **Recovery Exemption Immediately Following an Emergency Plan Exception**

Following a declared emergency under 10 CFR 26.207(d), due to high wind conditions, and once the high wind conditions have passed and the unusual event exited, the site may not

be accessible by sufficient numbers of personnel to allow relief of the sequestered storm crew. During these conditions, an exemption is consistent with the intent of 10 CFR 26.207(d).

Once STPNOC has entered into high-wind exemption or 10 CFR 26.207(d) exception, the licensee would not need to make a declaration that it is invoking the recovery exemption.

### **Unit Shutdown**

The STP exemption request states that following the declaration of an unusual event resulting from predicted natural phenomenon, the units are required to be shut down to hot standby at least 2 hours prior to hurricane force winds arriving on-site. Lessons learned from Hurricane Andrew, NUREG-1474, include having both units shut down and on residual heat removal when the storm strikes so that a loss-of-offsite power will not jeopardize core cooling. The NRC staff concludes that the STP plan is consistent with the lessons learned.

### **Storm Crew**

STPNOC plans to sequester sufficient individuals to staff two 12-hour shifts of workers consisting of personnel from operations, maintenance, health physics, chemistry and security to maintain the safe and secure operation of the facility. The STPNOC'S hurricane plan provides for bunking facilities in the power block that allows for restorative rest for the off-crew. This plan is consistent with managing fatigue. A 12-hour break provides each individual with an opportunity for restorative rest. However, the accommodations and potentially stressful circumstances may not be as restful as individuals would otherwise desire. The NRC staff concludes that, under the circumstances, these actions are consistent with the expected practice of fatigue management.

### **Maintenance**

The NRC staff does not consider discretionary maintenance to be maintenance of SSCs that is required as a result of the storm's high winds or required Technical Specification

surveillances. In its letter dated April 19, 2010, the licensee clarified that the exemption request is not intended for performing discretionary maintenance or the direction of discretionary maintenance. The exemption is for specific work necessary to maintain the plant in a safe and secure condition, or to protect equipment required for safety or power generation from potential storm damage. The NRC staff concludes that this definition of discretionary maintenance and the exclusion of discretionary maintenance from the exemption request is consistent with the intent of this exemption.

### **Procedural Guidance**

In its letter dated May 10, 2010, in response to a phone call on May 6, 2010, the licensee made a commitment to incorporate the following guidance in site procedures:

- The conditions necessary to sequester site personnel are consistent with the conditions specified in the STPNOC exemption request,
- Provisions for ensuring that personnel who are not performing duties are provided an opportunity as well as accommodations for restorative rest, and
- The condition for departure from the exemption is based on the EOF Director's determination that adequate staffing is available to meet the requirements of 10 CFR 26.205(c) and (d).

### **Returning to Work Hour Controls**

The licensee must return to work hour controls when the EOF Director determines that adequate staff is available to meet the 10 CFR 26.205(c) and (d) requirements.

Upon exiting the exemption, all work hour controls will apply. The individuals must have had a minimum of a 10-hour break prior to the start of the first shift following exiting the exemption. The minimum day-off requirement (10 CFR 26.205(d)(3)) is considered reset and the forward shift schedules must be designed to meet the minimum day-off requirements.

**Authorized by Law**

As stated above, this exemption would apply to the storm crew sequestered on site. The licensee's request states that adherence to all work hour controls could impede the licensee's ability to use whatever staff resources may be necessary to respond to a plant emergency and ensure that the plant maintains a safe and secure status. As stated above, 10 CFR 26.9 allows the NRC to grant exemptions from the requirements of 10 CFR 26.205(c) and (d). 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 Undue Risk to Public Health and Safety**

The underlying purposes of 10 CFR 26.205(c) and (d) are to prevent impairment from fatigue due to duration, frequency, or sequencing of successive shifts. Based on the above evaluation, no new accident precursors are created by utilizing whatever staff resources may be necessary to respond to a plant emergency and ensure that the plant maintains a safe and secure status; therefore, the probability of postulated accidents is not increased. Also, the consequences of postulated accidents are not increased, because there is no change in the types of accidents previously evaluated. Therefore, there is no undue risk to public health and safety.

**Consistent with Common Defense and Security**

The proposed exemption would allow the licensee to utilize whatever staff resources may be necessary to respond to a plant emergency and ensure that the plant maintains a safe and secure status. This change to the operation of the plant has no relation to security issues. Therefore, the common defense and security is not impacted by this exemption.

#### **4.0 CONCLUSION**

Accordingly, the Commission concludes that granting the requested exemption is consistent with existing regulation at 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 10 CFR Part 26 Statements of Consideration (73 FR 17148; March 31, 2008), state 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 maintains a safe and secure status.

The actions described in the exemption request and "Hurricane Plan" procedure 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 determined that (1) the proposed exemption is authorized by law, (2) there is a reasonable assurance that the health and safety of the public will not be endangered by the proposed exemption, (3) such activities will be consistent with the Commission's regulations and guidance, and (4) the issuance of the exemption will not endanger the common defense and security.

Pursuant to 10 CFR 51.32, "Finding of no significant impact," the Commission has previously determined that the granting of this exemption will not have a significant effect on the quality of the human environment (75 FR 21678; April 26, 2010).

This exemption is effective upon issuance.

Dated at Rockville, Maryland, this 2<sup>nd</sup> day of July 2010.

FOR THE NUCLEAR REGULATORY COMMISSION

**/RA/**

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