



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

February 24, 2011

Vice President, Operations  
Entergy Operations, Inc.  
Waterford Steam Electric Station, Unit 3  
17265 River Road  
Killona, LA 70057-3093

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 – EXEMPTION FROM SPECIFIC REQUIREMENTS OF TITLE 10 OF THE *CODE OF FEDERAL REGULATIONS*, PART 26, "FITNESS FOR DUTY PROGRAMS (TAC NO. ME4016)

Dear Sir/Madam:

The U.S. Nuclear Regulatory Commission (NRC) has approved the enclosed exemption from specific requirements under Title 10 of the *Code of Federal Regulations* (10 CFR), Part 26, "Fitness for Duty Programs," for Waterford Steam Electric Station, Unit 3 (Waterford 3). This action is in response to the Entergy Operations, Inc.'s (the licensee's) application dated May 27, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML101520325), as supplemented by letters dated November 3 and 29, 2010 (ADAMS Accession Nos. ML103090716 and ML103350158, respectively). Specifically, the licensee requested approval of an exemption from the requirements of 10 CFR 26.205(c), "Work hours scheduling," and (d), "Work hour controls," during declarations of severe weather conditions such as hurricanes.

In its letter dated November 29, 2010, the licensee made the following commitment, with the scheduled completion date, "Upon NRC approval of the exemption":

The following information will be maintained in site procedures:

- 1) The conditions necessary to sequester site personnel that are consistent with the conditions specified in the Waterford 3 exemption request (W3F1-2010-0045).
- 2) Provisions for ensuring that personnel who are not performing duties are provided an opportunity as well as accommodations for restorative rest.
- 3) The condition for departure from the exemption is based on the Site VP's [Vice President's] (or his duly assigned designee's) determination that adequate staffing is available to meet the requirements of 10 CFR 26.205(c) and (d).

The NRC staff finds that reasonable controls for the implementation and for subsequent evaluation of proposed changes pertaining to the regulatory commitments are best provided by the licensee's administrative processes, including its commitment management program. The

regulatory commitments do not warrant the creation of regulatory requirements (items requiring prior NRC approval of subsequent changes).

A copy of the exemption is enclosed. The exemption has been forwarded to the Office of the Federal Register for publication. If there are any questions or comments, please contact me at (301) 415-1480 or e-mail [kaly.kalyanam@nrc.gov](mailto:kaly.kalyanam@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "N. Kalyanam", with a horizontal line underneath the name.

N. Kalyanam, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosure:  
As stated

cc w/encl: Distribution via Listserv

**NUCLEAR REGULATORY COMMISSION**

**[NRC-20XX-XXXX]**

**Entergy Operations, Inc.**

**Waterford Steam Electric Station, Unit 3**

**Docket No. 50-382**

**Exemption**

**1.0 BACKGROUND**

Entergy Operations, Inc. (Entergy, the licensee) is the holder of Facility Operating License Number NPF-42, which authorizes operation of the Waterford Steam Electric Station, Unit 3 (Waterford 3). 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, the Commission) now or hereafter in effect.

The facility consists of one pressurized-water reactor located in Saint Charles Parish, Louisiana.

**2.0 REQUEST/ACTION**

By letter dated May 27, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML101520325), and supplemented by letters dated November 3 and 29, 2010 (ADAMS Accession Nos. ML103090716 and ML103350158, respectively), Entergy 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 Sections 26.205(c) and (d) during declarations of severe weather conditions, such as a tropical storm and hurricane-force winds, as described in Entergy's document, Procedure ENS-EP-302, "Severe Weather Response." The requested exemption would apply to individuals who perform duties

identified in 10 CFR 26.4(a)(1) through (a)(5) who are sequestered in the event of severe winds and who would need to be available to ensure the plant remains in a safe and secure status to protect the public.

Waterford 3 is located in a coastal area and has a likelihood of being affected by hurricane watches and warnings or inland hurricane wind watches and warnings caused by a hurricane impacting the coast. The most recent events were Hurricanes Katrina (August 27, 2005) and Gustav (August 31, 2008). In both events, the site was under a Hurricane Warning. Widespread evacuations were required for both storms and response personnel were sequestered on site. The site entered an Unusual Event in both cases. The exemption request proposes to extend the exception provided by Section 26.207(d) for pre-defined entry and exit conditions related to hurricane events because the sequestering of plant personnel and related staff resource limitations may occur at times prior to and following the hurricane.

The exemption will allow Waterford 3 to sequester individuals on-site, when travel to and from the site during high-wind conditions may be hazardous or simply not possible. If conditions are such that sustained winds of 74 mile per hour are present on-site, then Waterford 3 must declare a notice of Unusual Event (UE). When this declaration is made, an exemption from work hour controls is available under 10 CFR 26.207(d).

The regulations in 10 CFR 26.205(c), "Work hours scheduling," a performance-based provision, require that licensees 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.

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 possibly delay the return of sufficient relief personnel. In its letter dated November 3, 2010, the licensee clarified that the exemption will be exited if the relevant Hurricane Watch/Warning or Inland Hurricane Watch/Warning has been canceled; if weather conditions and highway infrastructure support safe travel; and if relief crews are available to restore normal shift rotation determined by the Site VP (or designee). When this declaration is made, full compliance with 10 CFR 26.205(c) and (d) is again required.

Thus, to summarize, the Entergy exemption request for Waterford 3 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.

### **3.0 DISCUSSION**

The NRC, pursuant to 10 CFR 26.9, requires that upon application of any interested person or on its own initiative, the 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:

- 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, would not adversely affect the common defense and security, and is otherwise in the public interest.

Workers covered by the requirement are workers who perform duties identified in 10 CFR 26.4(a)(1) through (a)(5), who are sequestered in the event of severe winds, and who would need to be available to ensure the plant remains in a safe and secure status to protect the public. 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].

Pursuant to 10 CFR 26.207(d), licensees need not meet the requirements of Section 26.205(c) and (d) during declared emergencies as defined in the licensee's emergency plan. A tropical storm watch occurs when sustained winds are at least 39 mph. The entry condition for the Waterford 3 declaration of an Unusual Event is a confirmed hurricane-force wind greater or equal to 74 mph that is expected to arrive on site less than 12 hours as projected by the National Weather Service. Therefore, entry conditions for the requested exemption precede the declaration of an Unusual Event.

Section 26.207(d) states that licensees need not meet the requirements of 26.205(c) and (d) during declared emergencies, therefore there is no need for an additional exemption to be granted during the period of a declared emergency for severe winds. Although work hours, breaks, and days off are calculated as usual during a licensee-declared plant emergency, licensees are unconstrained in the number of hours they may allow individuals to work performing covered duties or the timing and duration of breaks they must require them to take.

**High-Wind Exemption**

A high-wind exemption includes the period starting with the entry conditions prior to the declaration of an Unusual Event (confirmed hurricane watch or warning is in effect). As a 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."

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. Because severe wind preparedness activities become difficult once winds reach tropical storm force, a hurricane warning is issued 36 hours in advance of the anticipated onset of tropical-storm-force winds (39 to 73 mph).

The following are entry conditions where the site may apply a proposed allowance period for exemption from fatigue rule requirements (Entergy Procedure EN-EP-309, "Fatigue Management for Hurricane Response Activities").

- (a) The site location is expected to be within a Hurricane Watch or Warning area.  
OR
- (b) The site location is expected to be within an Inland Hurricane Watch or Warning area.  
OR
- (c) Travel conditions are forecasted to be hazardous for employee commutes to and from the site (i.e., sustained wind conditions of greater than 40 mph).  
OR

- (d) Local municipalities are preparing to declare restrictions on travel that would impact employee commutes and/or are preparing to order or recommend evacuations in areas that affect essential staffing levels for the site.

Lessons learned that are included in NUREG-1474, include the acknowledgement that detailed, methodical preparations should be made prior to the onset of hurricane-force winds. The NRC staff concludes that Waterford 3's organized actions are consistent with the lessons learned.

**Recovery exemption immediately following a high-wind exemption**

The period immediately following the high-wind exemption, but when the conditions for an Unusual Event no longer exist, 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).

**Recovery exemption immediately following an emergency plan 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).

Once Waterford 3 has entered into either the high-wind exemption or the 10 CFR 26.207(d) exemption, the licensee does not need to make a declaration that it is invoking the recovery exemption.

### **Unit Shutdown**

If a hurricane warning is in effect and the storm is projected to reach the site, Waterford 3 specifies that 12 hours prior to arrival of hurricane conditions onsite, as projected by the National Weather Service, Waterford 3 will commence a plant shutdown as directed by plant management in anticipation of a loss of offsite power.

Lessons learned from Hurricane Andrew, NUREG-1474, include having the unit shut down and on decay heat removal when the storm strikes so that a loss of offsite power will not jeopardize core cooling. The NRC staff concludes the Waterford 3 plan is consistent with the lessons learned.

### **Fatigue Management**

Waterford 3 plans to establish a 12-hour duty schedule comprised of a day shift and a night shift. In its letter dated November 3, 2010, the licensee provided a checklist, in procedure ENS-EP-302, Attachment 9.2 which includes "Management Expectations" which incorporates an expectation of responders to sleep when off duty. When personnel are to be sequestered on site, Waterford 3 permits arrangements for onsite reliefs and bunking to be made in order to allow for a sufficient period of restorative sleep for personnel. The relief and bunking areas will be developed prior to sequestering personnel. Sleeping accommodations within a weather protected environment will be made available that will attempt to minimize the interruption of sleep. The licensee has also provided key features of managing fatigue, which highlight sufficient numbers of management and supervision that will be available to provide oversight for plant operating conditions and who are tasked with monitoring the effects of fatigue such that the public health and safety is adequately protected. The NRC staff concludes that the actions presented are consistent with the practice of fatigue management.

### **Maintenance**

In its letter dated November 3, 2010, the licensee clarified that the exemption request will only apply to individuals involved in hurricane response activities that perform duties identified in 10 CFR 26.4 (1) through (5). The exemption does not apply to discretionary maintenance activities. The exemption is for work necessary to maintain the plant in a safe and secure condition. Suspension of work hour controls is for storm preparation activities and those deemed critical for plant and public safety. The NRC staff concludes that the exclusion of discretionary maintenance from the exemption request to be consistent with the intent of the exemption.

### **Procedural Guidance**

In its letter dated November 29, 2010, the licensee made a commitment to incorporate the following guidance in site procedures:

- 1) The conditions necessary to sequester site personnel that are consistent with the conditions specified in the Waterford 3 exemption request (W3F1-2010-0045).
- 2) Provisions for ensuring that personnel who are not performing duties are provided an opportunity as well as accommodations for restorative rest.
- 3) The condition for departure from the exemption is based on the Site VP's [Vice President's] (or his duly assigned designee'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 Site VP (or designee) determines that sufficient relief crews are available to restore normal shift rotation.

Waterford 3 utilizes staffing rosters tied to a departmental or organizational function, known as watch bills, to monitor compliance with the fatigue rule requirements. Capability to restore normal shift rotation would be ascertained via restoration of the watch bill process. Upon exiting the exemption, the work hour controls in Section 26.205(c) and (d) apply and the requirements in Section 26.205(3)(b) must be met.

### **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.

#### **Otherwise in the Public Interest**

The proposed exemption would increase the availability of licensee staff to perform additional duties to ensure that the plant is in a safe configuration during weather-related emergencies. Therefore, granting this exemption is in the public interest.

#### **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 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.

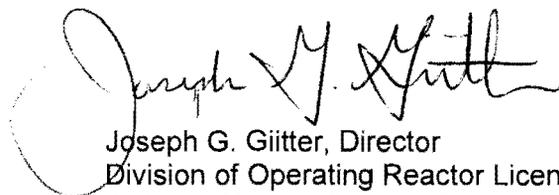
The NRC staff has reviewed the exemption request from certain work hour controls during conditions of high winds and recovery from high-wind conditions. Based on the considerations discussed above, the NRC staff has determined that (1) the proposed exemption is authorized by law, (2) there is a reasonable 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 or the health and safety of the public.

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 (76 FR 5408; January 31, 2011).

This exemption is effective upon issuance.

Dated at Rockville, Maryland, this 23<sup>rd</sup> day of February 2011.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Joseph G. Giitter". The signature is fluid and cursive, with a large initial "J" and "G".

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

regulatory commitments do not warrant the creation of regulatory requirements (items requiring prior NRC approval of subsequent changes).

A copy of the exemption is enclosed. The exemption has been forwarded to the Office of the Federal Register for publication. If there are any questions or comments, please contact me at (301) 415-1480 or e-mail [kaly.kalyanam@nrc.gov](mailto:kaly.kalyanam@nrc.gov).

Sincerely,

/RA/

N. Kalyanam, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosure:  
As stated

cc w/encl: Distribution via Listserv

**DISTRIBUTION:**

PUBLIC  
LPL4 Reading  
RidsAcrsAcnw\_MailCTR Resource  
RidsNrrDirslhpb Resource  
RidsNrrDorl Resource

RidsNrrDorlDpr Resource  
RidsNrrDorlLpl4 Resource  
RidsNrrPMWaterford  
RidsNrrLAJBurkhardt Resource  
RidsNsrDsp Resource

RidsOgcRp Resource  
CFranklin, NRR/DIRS/IHPB  
MBoggi, NRR/DIRS/IHPB  
GMiller, EDO RIV

**ADAMS Accession Nos.** Letter: ML110060470 Exemption: ML110060472 \*SE memo

OFFICE	NRR/DORL/LPL4/PM	NRR/DORL/LPL4/LA	NRR/DIRS/IHPB/BC	NSIR/DSP/ISCPB/BC
NAME	NKalyanam	JBurkhardt	UShoop*	CErlanger*
DATE	2/16/11	1/7/11	12/13/10	12/10/10
OFFICE	OGC	NRR/DORL/LPL4/BC	NRR/DORL/D	NRR/DORL/LPL4/PM
NAME	M Spencer (NLO)	MMarkley	JGitter	KKalyanam
DATE	1/20/11	1/20/11	2/23/11	2/24/11

OFFICIAL RECORD COPY