



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION IV  
1600 EAST LAMAR BOULEVARD  
ARLINGTON, TEXAS 76011-4511

September 12, 2022

EA-22-033

John Ferrick, Site Vice President  
Entergy Operations, Inc.  
17265 River Road  
Killona, LA 70057

**SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 - FINAL SIGNIFICANCE DETERMINATION OF A WHITE FINDING, NOTICE OF VIOLATION, AND FOLLOW-UP ASSESSMENT LETTER; NRC INSPECTION REPORT 05000382/2022090**

Dear John Ferrick:

This letter provides you the final significance determination of the preliminary White finding discussed in our previous communication dated June 11, 2022, which included Emergency Preparedness Inspection Report 05000382/2022501, Agencywide Documents Access and Management System (ADAMS) Accession No. ML22159A275. The finding involved errors associated with the main condenser wide range gas monitor (WRGM) which introduced the potential to overclassify radiological emergencies and made the results of dose assessment using the main condenser WRGM inaccurate.

At your request, a Regulatory Conference was held on July 29, 2022, to discuss your views on this issue. A summary of this meeting, that included a copy of your presentation, was issued on August 17, 2022 (ML22231A467). During the conference, your staff described your assessment of the significance of the finding, and the corrective actions taken to resolve it, including the root cause evaluation of the finding. On August 15, 2022, you provided additional information regarding outstanding questions from the conference (ML22229A130).

After considering the information developed during the inspection, the information you provided at the regulatory conference, and additional written information provided on August 15, 2022, the NRC has concluded that the finding is appropriately characterized as White, a finding of low to moderate safety significance. Specifically, the NRC considers findings involving dose assessment to be of low to moderate significance (White), if the licensee is not able to provide technically adequate estimates of radioactive material releases to the environment or projected offsite doses. The NRC considers adequate dose assessments essential to ensuring licensees are able to make accurate protective action recommendations to state and local officials. The details of the NRC's final evaluation of the significance of the finding are documented in Enclosure 2.

You have 30 calendar days from the date of this letter to appeal the staff's determination of significance for the identified White finding. Such appeals will be considered to have merit only if they meet the criteria given in Inspection Manual Chapter 0609, Attachment 2 (ML20337A296). An appeal must be sent in writing to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 1600 East Lamar Blvd., Arlington, Texas 76011-4511.

The NRC has also determined that the failure to maintain the effectiveness of an emergency plan that met the requirements in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix E, and the planning standards of 10 CFR 50.47(b), is a violation of 10 CFR 50.54(q)(2) as cited in the enclosed Notice of Violation (Notice), Enclosure 1. The circumstances surrounding the violation were described in detail in Inspection Report 05000382/2022501. In accordance with the NRC Enforcement Policy, the Notice is considered an escalated enforcement action because it is associated with a White finding.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC review of your response to the Notice will also determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

As a result of our review of Waterford Steam Electric Station, Unit 3's performance, including this White finding, we have assessed the performance of Waterford Steam Electric Station, Unit 3 to be in the Regulatory Response column of the NRC's Action Matrix, effective the second quarter of 2022. Therefore, we plan to conduct a supplemental inspection using Inspection Procedure 95001, "Supplemental Inspection Response to Action Matrix Column 2 (Regulatory Response) Inputs," when your staff has notified us of your readiness for this inspection. This inspection procedure is conducted to provide assurance that the root cause and contributing causes of risk significant performance issues are understood, the extent of condition and the extent of cause are identified, and the corrective actions are sufficient to prevent recurrence.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter, its enclosures, and your response will be made available electronically for public inspection in the NRC Public Document Room and from the NRC's ADAMS, accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy or proprietary information so that it can be made available to the public without redaction.

If you have any questions concerning this matter, please contact Mark Haire of my staff at 817-200-1223.

Sincerely,



Signed by Monninger, John  
on 09/12/22

John D. Monninger  
Deputy Regional Administrator

Docket No. 05000382  
License No. NPF-38

Enclosures:

1. Notice of Violation
2. NRC Significance Evaluation

WATERFORD STEAM ELECTRIC STATION, UNIT 3 - FINAL SIGNIFICANCE DETERMINATION OF A WHITE FINDING, NOTICE OF VIOLATION, AND FOLLOW-UP ASSESSMENT LETTER; NRC INSPECTION REPORT 05000382/2022090 – DATED SEPTEMBER 12, 2022

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ADAMS ACCESSION NUMBER: **ML22241A143**

SUNSI Review: ADAMS:  Non-Publicly Available  Non-Sensitive Keyword:  
 By: ACR  Yes  No  Publicly Available  Sensitive

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SIGNATURE	/RA/ E	/RA/ E	/RA/ E	/RA/ E	/RA/ E	/RA/ E
DATE	08/19/22	08/23/22	8/22/22	08/19/22	08/24/22	08/29/22
OFFICE	OE	D:DORS	D:DRSS	DRA		
NAME	JPeralta	RLantz	MMuessle	JMonninger		
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DATE	08/29/22	08/30/22	09/08/22	09/12/2022		

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## NOTICE OF VIOLATION

Entergy Operations, Inc.  
Waterford Steam Electric Station, Unit 3

Docket No. 05000382  
License No. NPF-38  
EA-22-033

During an NRC inspection conducted from April 24 to May 17, 2022, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

10 CFR 50.54(q)(2) requires, in part, that a holder of a license under 10 CFR Part 50 shall follow and maintain the effectiveness of an emergency plan that meets the requirements in 10 CFR Part 50, Appendix E, and the planning standards of 10 CFR 50.47(b).

10 CFR 50.47(b)(4) requires, in part, that a standard emergency classification and action level scheme is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

10 CFR 50.47(b)(9) requires, in part, that adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

Contrary to the above, from January 1, 2011, to February 4, 2022, the licensee failed to follow and maintain the effectiveness of an emergency plan which met the requirements in 10 CFR Part 50 Appendix E and the planning standards of 10 CFR 50.47(b). Specifically, the licensee failed to maintain a standard emergency classification scheme as required by 10 CFR 50.47(b)(4) because PRM-IRE-0002 (condenser exhaust wide range gas monitor, mid and high range detectors) had errors in its output that could result in an over-classification up to a General Emergency, resulting in unnecessary public protective actions. Also, the licensee failed to use adequate methods, systems, and equipment for assessing and monitoring actual and potential offsite consequences of a radiological emergency as required by 10 CFR 50.47(b)(9), because those same errors would result in inaccurate dose assessments for a radiological release through the main condenser exhaust path.

This violation is associated with a White significance determination process finding.

Pursuant to 10 CFR 2.201, Entergy Operations, Inc. is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 1600 East Lamar Blvd., Arlington, Texas 76011-4511, and the NRC Resident Inspector at the Waterford Steam Electric Station, Unit 3, and email it to [R4Enforcement@nrc.gov](mailto:R4Enforcement@nrc.gov) within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation, EA-22-033" and should include: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken; and (4) the date when full compliance will be achieved.

Your response may reference or include previous docketed correspondence if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, the NRC may issue an order or a demand for information requiring you to explain why your license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room and from the NRC's ADAMS, accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html>, to the extent possible, it should not include any personal privacy or proprietary information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information).

Dated this 12th day of September 2022

## NRC SIGNIFICANCE EVALUATION

On July 29, 2022, the NRC held a Regulatory Conference in the Region IV office with representatives of Entergy Operations, Inc. (Entergy) and U.S. Nuclear Regulatory Commission (NRC) personnel to discuss a preliminary White finding and associated apparent violation identified in NRC Inspection Report 05000382/2022501.

### Entergy Position

At the conference, Entergy participants stated that they agreed that the performance deficiency occurred; however, they stated that the finding is more appropriately characterized as very low safety significance (Green). The two key aspects of the basis for asserting that the issue should be considered Green were: (1) the perspective that timely and accurate emergency classification would occur by other unaffected Emergency Action Levels (EALs), and (2) the contention that dose assessment capabilities would not be negatively impacted because, procedurally, the main condenser wide range gas monitor would be isolated from use within an hour of a steam generator tube rupture event, and, if for some reason it was not isolated in accordance with procedure, projected dose rates based on the output of the affected wide range gas monitor would not reach a threshold at which protective actions would be recommended.

The licensee participants asserted that, for the worst-case event, the expected dose rate at the site boundary would be 15 millirem per hour, but with the calibration errors included, dose rates projected from the affected wide range gas monitor would be 26 millirem per hour. Based on information provided to the NRC on August 15, 2022, the licensee's worst-case analysis was based on assuming approximately 0.2 percent fuel clad damage.

### NRC Evaluation

The NRC evaluated the licensee's perspectives provided during the conference, the information developed during the inspection, and the additional information provided by the licensee after the conference. The NRC evaluated both the Title 10 of the *Code of Federal Regulations* (10 CFR) 50.47(b)(4) and the 10 CFR 50.47(b)(9) aspects of the 10 CFR 50.54(q)(2) violation.

#### Title 10 CFR 50.47(b)(4) evaluation

With respect to the 10 CFR 50.47(b)(4) aspect of the 10 CFR 50.54(q)(2) violation, the NRC concluded that appropriate classifications could be made in an accurate and timely manner using other EALs. The licensee EAL schemes are designed to consider multiple methods of ensuring event classifications for a given accident scenario. There have been no identified effects from the radiation monitor equipment issues that would negatively affect the licensee's ability to use the fission product barrier matrix EALs to make appropriate classifications during a steam generator tube rupture event. Therefore, the NRC has concluded that the 10 CFR 50.47(b)(4) aspect of the 10 CFR 50.54(q)(2) violation does not, by itself, make the significance of the performance deficiency above very low safety significance (Green).

#### Title 10 CFR 50.47(b)(9) evaluation

With respect to the 10 CFR 50.47(b)(9) aspect of the 10 CFR 50.54(q)(2) violation, the NRC concluded that the main condenser wide range gas monitor would remain an input to the dose projection process for some period of time during a steam generator tube rupture event. Therefore, for some period of time during the relevant accident sequence, the dose projection

process would have been incapable of providing technically adequate estimates of radioactive material releases to the environment or projected offsite doses in some cases. This condition is defined by the emergency preparedness significance determination process (NRC Inspection Manual Chapter 0609, Appendix B) as a degraded risk-significant planning standard function irrespective of the possible magnitude of the inadequacy.

The significance of the finding is based upon the performance deficiency associated with the calibration error of an instrument included as part of the approved dose assessment model, regardless of the magnitude of the error or arguments related to anticipated actions of plant personnel. Therefore, the NRC has concluded that the significance of the 10 CFR 50.47(b)(9) aspect of the 10 CFR 50.54(q)(2) violation is of low to moderate safety significance (White).

### **NRC Conclusion**

The NRC concluded that this performance deficiency resulted in a White finding within the Emergency Preparedness Cornerstone of the Reactor Oversight Process for the degradation of the risk-significant planning standard.