



Entergy Operations, Inc.
P.O. Box 756
Port Gibson, Mississippi 39150

Jeffery A. Hardy
Manager Regulatory Assurance
Grand Gulf Nuclear Station
Tel: 601-437-2103

GNRO2022/00001

10 CFR 50.54(q)(5)

January 11, 2022

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Grand Gulf Nuclear Station Unit1, ANS Evaluation Report

Grand Gulf Nuclear Station, Unit 1
NRC Docket No. 50-416
Renewed Facility Operating License No. NPF-29

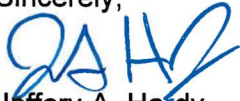
In accordance with 10CFR50 50.54(q)(5) and 10CFR72.44(f), Entergy Operations Inc. (Entergy) hereby submits Grand Gulf Nuclear Station Unit 1, (GGNS) ANS (Alert and Notification System) Evaluation Report (dated March 15, 2021), including a summary and analysis of the changes, which became effective December 15, 2021.

The changes to the GGNS ANS Evaluation System were evaluated by Entergy and determined to not reduce the effectiveness of the plan. Attachment 1 contains the Summary and Analysis of the GGNS ANS Evaluation Report. Attachment 2 contains the GGNS ANS Evaluation Report.

This letter contains no new commitments.

If you have any questions concerning this submittal, please contact Mr. Mike Lewis, Manager Emergency Planning, at (601) 437-2166.

Sincerely,



Jeffery A. Hardy
JAH/rm

- Attachments:
1. Summary and Analysis of the Grand Gulf Nuclear Station Unit 1, ANS Evaluation Report
 2. Grand Gulf Nuclear Station Unit 1, ANS Evaluation Report

cc:

NRC Region IV - Regional Administrator
NRC Senior Resident Inspector, Grand Gulf Nuclear Station
State Health Officer, Mississippi Department of Health
NRR Project Manager
Director, Division of Spent Fuel Storage & Transportation, Office of Nuclear

Attachment 1

GNRO2022/00001

Summary and Analysis of the Grand Gulf Nuclear Station Unit 1, ANS Evaluation Report

10CFR50.54(Q)(3) Screening

Procedure/Document Number: ENTANSERGGN201217	Revision:0
Equipment/Facility/Other: ANS sirens and Control System	
Title: ANS Evaluation Report Grand Gulf Nuclear	

Part I. Description of Activity Being Reviewed

This is a totally new report written to capture a new siren and activation system.

Part II. Activity Previously Reviewed?

Is this activity fully bounded by an NRC approved 10CFR50.90 submittal or Alert and Notification System Design Report?

If YES, identify bounding source document number/approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below:

Justification:

☐ YES
50.54(q)(3)
Evaluation is
NOT required.
Enter
justification
below and
complete Part
VI.

☒ NO
Continue to
next part

☐ Bounding document attached (optional)

Part III. Applicability of Other Regulatory Change Control Processes

Check if any other regulatory change processes control the proposed activity.(Refer to EN-LI-100)

N/A

APPLICABILITY CONCLUSION

If there are no other controlling change processes, continue the 10CFR50.54(q)(3) Screening.

☐ One or more controlling change processes are selected, however, some portion of the activity involves the emergency plan or affects the implementation of the emergency plan; continue the 10CFR50.54(q)(3) Screening for that portion of the activity. Identify the applicable controlling change processes below.

☐ One or more controlling change processes are selected and fully bounds all aspects of the activity. 10CFR50.54(q)(3) Evaluation is NOT required. Identify controlling change processes below and complete Part VI.

CONTROLLING CHANGE PROCESSES

10CFR50.54(q)

10CFR50.54(Q)(3) Screening

Procedure/Document Number: ENTANSERGGN201217	Revision: 0
Equipment/Facility/Other: ANS sirens and Control System	
Title: ANS Evaluation Report Grand Gulf Nuclear	

Part IV. Editorial Change Is this activity an editorial or typographical change such as formatting, paragraph numbering, spelling, or punctuation that does not change intent? Justification:	<input type="checkbox"/> YES 50.54(q)(3) Evaluation is NOT required. Enter justification and continue to next part or complete Part VI as applicable.	<input checked="" type="checkbox"/> NO Continue to next part
Part V. Emergency Planning Element/Function Screen (Associated 10CFR50.47(b) planning standard function identified in brackets) Does this activity affect any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II?		
1. Responsibility for emergency response is assigned. [1]	<input type="checkbox"/>	
2. The response organization has the staff to respond and to augment staff on a continuing basis (24/7 staffing) in accordance with the emergency plan. [1]	<input type="checkbox"/>	
3. The process ensures that on shift emergency response responsibilities are staffed and assigned. [2]	<input type="checkbox"/>	
4. The process for timely augmentation of onshift staff is established and maintained. [2]	<input type="checkbox"/>	
5. Arrangements for requesting and using off site assistance have been made. [3]	<input type="checkbox"/>	
6. State and local staff can be accommodated at the EOF in accordance with the emergency plan. [3]	<input type="checkbox"/>	
7. A standard scheme of emergency classification and action levels is in use. [4]	<input type="checkbox"/>	
8. Procedures for notification of State and local governmental agencies are capable of alerting them of the declared emergency within 15 minutes after declaration of an emergency and providing follow-up notifications. [5]	<input type="checkbox"/>	
9. Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. [5]	<input checked="" type="checkbox"/>	
10. The public ANS meets the design requirements of FEMA-REP-10, Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants, or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter. [5]	<input checked="" type="checkbox"/>	
11. Systems are established for prompt communication among principal emergency response organizations. [6]	<input type="checkbox"/>	
12. Systems are established for prompt communication to emergency response personnel. [6]	<input type="checkbox"/>	
13. Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). [7]	<input type="checkbox"/>	
14. Coordinated dissemination of public information during emergencies is established. [7]	<input type="checkbox"/>	
15. Adequate facilities are maintained to support emergency response. [8]	<input type="checkbox"/>	
16. Adequate equipment is maintained to support emergency response. [8]	<input type="checkbox"/>	
17. Methods, systems, and equipment for assessment of radioactive releases are in use. [9]	<input type="checkbox"/>	

10CFR50.54(Q)(3) Screening

Procedure/Document Number: ENTANSERGGN201217	Revision:0
Equipment/Facility/Other: ANS sirens and Control System	
Title: ANS Evaluation Report Grand Gulf Nuclear	

18. A range of public PARs is available for implementation during emergencies. [10]	<input type="checkbox"/>
19. Evacuation time estimates for the population located in the plume exposure pathway EPZ are available to support the formulation of PARs and have been provided to State and local governmental authorities. [10]	<input type="checkbox"/>
20. A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.[10]	<input type="checkbox"/>
21. The resources for controlling radiological exposures for emergency workers are established. [11]	<input type="checkbox"/>
22. Arrangements are made for medical services for contaminated, injured individuals. [12]	<input type="checkbox"/>
23. Plans for recovery and reentry are developed. [13]	<input type="checkbox"/>
24. A drill and exercise program (including radiological, medical, health physics and other program areas) is established. [14]	<input type="checkbox"/>
25. Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses. [14]	<input type="checkbox"/>
26. Identified weaknesses are corrected. [14]	<input type="checkbox"/>
27. Training is provided to emergency responders. [15]	<input type="checkbox"/>
28. Responsibility for emergency plan development and review is established. [16]	<input type="checkbox"/>
29. Planners responsible for emergency plan development and maintenance are properly trained. [16]	<input type="checkbox"/>

APPLICABILITY CONCLUSION

- ☐ If no Part V criteria are checked, a 10CFR50.54(q)(3) Evaluation is NOT required; document the basis for conclusion below and complete Part VI.
- ☒ If any Part V criteria are checked, complete Part VI and perform a 10CFR50.54(q)(3) Evaluation.

BASIS FOR CONCLUSION

This 50.54(q)3 screening is for a complete change of the Alert Notification System (ANS) and an entirely new ANS Evaluation Report. Screening has determined that Planning Standard 10 CFR 50.47(b)[5] is potentially affected by this change.

A 10 CFR 50.54q(3) evaluation will be performed on this change to determine whether the effectiveness of the emergency plan is reduced and prior NRC approval is required.

10CFR50.54(Q)(3) Screening

Procedure/Document Number: ENTANSERGGN201217	Revision:0
Equipment/Facility/Other: ANS sirens and Control System	
Title: ANS Evaluation Report Grand Gulf Nuclear	

Part VI. Signatures:

Preparer Name (Print) Sidney Reeves	Preparer Signature Sidney N Reeves, III <small>Digitally signed by Sidney N Reeves, ■ DN: cn=Sidney N Reeves, ■, c=US, o=Grand Gulf Nuclear Station, ou=Emergency Planning, email=sreeve1@entergy.com Reason: 5054 preparer Date: 2021.12.02 15:21:50 -06'00'</small>	Date:
(Optional) Reviewer Name (Print) Dennis Coulter	Reviewer Signature Dennis M. Coulter <small>Digitally signed by Dennis M. Coulter Date: 2021.12.04 11:31:59 -06'00'</small>	Date:
Reviewer Name (Print) Nuclear EP Project Manager	Reviewer Signature Anthony J. Ringgold <small>Digitally signed by Anthony J. Ringgold DN: cn=Anthony J. Ringgold, c=US, o=Entergy, ou=Senior Project Manager, Nuclear, email=aringgo@entergy.com Reason: I attest to the accuracy and integrity of this document Date: 2021.12.05 06:19:50 -06'00'</small>	Date:
Approver Name (Print) Emergency Planning Manager or designee	Approver Signature Michael Lewis 2021.12.06 09:33:04 -06'00'	Date:

10CFR50.54(Q)(3) Evaluation

Procedure/Document Number: ENTANSERGGN201217	Revision:0
Equipment/Facility/Other: Grand Gulf Nuclear Station	
Title: ANS Evaluation Report Grand Gulf Nuclear	

Part I. Description of Proposed Change:

This is a totally new report written to capture a new siren and activation system.

Part II. Description and Review of Licensing Basis Affected by the Proposed Change:

Adobe Search Engine – GGNS Emergency Plan, EAL Technical Bases, UFSAR, & TRM Bases-” Keywords: Alert Notification System, ANS, Siren.

Historical review of all available copies of the Grand Gulf Emergency Plan and ANS reports were conducted back to Rev 0. This change does not change the meaning or intent of any portion of the E-Plan.

Part III. Describe How the Proposed Change Complies with Relevant Emergency Preparedness Regulation(s) and Previous Commitment(s) Made to the NRC:

10 CFR 50.47[b](5); Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway and the public ANS meets the design requirements of FEMA-REP-10. Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter.

Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and follow up messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

The new Alert Notification System (ANS) and Sirens meets or exceeds all specifications for the system being replaced. The requirements are that there be an administrative and physical means for alerting the public. The ANS system must meet the design requirements of the FEMA-REP-10 Guide for evaluation of Alert and Notification Systems for Nuclear Power Plants; or comply with the licensee's FEMA approved ANS design report and supporting FEMA approval letter.

The previously approved ANS sirens are rated at 119.5 dBC @ 100'. The new sirens are rated at 123 dBC @ 100'. The previous system consisted of the 43 sirens that had four control stations. The new system has 43 sirens located in the same proximity as the previous sirens. It also has four control stations at the same locations as the previous system. The new sirens are designed to require less maintenance due to newer technology equipment powered by solar energy.

All commitments to FEMA REP-10 have been verified to have been met related to the Alert and Notification System.

10CFR50.54(Q)(3) Evaluation

Procedure/Document Number: ENTANSERGGN201217	Revision:0
Equipment/Facility/Other: Grand Gulf Nuclear Station	
Title: ANS Evaluation Report Grand Gulf Nuclear	

Part IV. Description of Emergency Plan Planning Standards, Functions and Program Elements Affected by the Proposed Change:

10 CFR 50.47(b)(5); Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway and the public ANS meets the design requirements of FEMA-REP-10. Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter.

Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and follow up messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

10 CFR 50 Appendix E, section IV.D.1: Administrative and physical means for notifying local, State, and Federal officials and agencies and agreements reached with these officials and agencies for the prompt notification of the public and for public evacuation or other protective measures, should they become necessary, shall be described. This description shall include identification of the appropriate officials, by title and agency, of the State and local government agencies within the EPZs.

10 CFR 50 Appendix E, section IV.D.3: A licensee shall have the capability to notify responsible State and local governmental agencies within 15 minutes after declaring an emergency. The licensee shall demonstrate that the appropriate governmental authorities have the capability to make a public alerting and notification decision promptly on being informed by the licensee of an emergency condition. Prior to initial operation greater than 5 percent of rated thermal power of the first reactor at a site, each nuclear power reactor licensee shall demonstrate that administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway EPZ. The design objective of the prompt public alert and notification system shall be to have the capability to essentially complete the initial alerting and initiate notification of the public within the plume exposure pathway EPZ within about 15 minutes. The use of this alerting and notification capability will range from immediate alerting and notification of the public (within 15 minutes of the time that State and local officials are notified that a situation exists requiring urgent action) to the more likely events where there is substantial time available for the appropriate governmental authorities to make a judgment whether or not to activate the public alert and notification system. The alerting and notification capability shall additionally, include administrative and physical means for a backup method of public alerting and notification capable of being used in the event the primary method of alerting and notification is unavailable during an emergency to alert or notify all or portions of the plume exposure pathway EPZ population. The backup method shall have the capability to alert and notify the public within the plume exposure pathway EPZ but does not need to meet the 15-minute design objective for the primary prompt public alert and notification system. When there is a decision to activate the alert and notification system, the appropriate governmental authorities will determine whether to activate the entire alert and notification system simultaneously or in a graduated or staged manner. The responsibility for activating such a public alert and notification system shall remain with the appropriate governmental authorities.

NUREG 0654 Section II.E.6. Each organization shall establish administrative and physical means, and the time required for notifying and providing prompt instructions to the public within the plume exposure pathway Emergency Planning Zone.

10CFR50.54(Q)(3) Evaluation

Procedure/Document Number: ENTANSERGGN201217	Revision: 0
Equipment/Facility/Other: Grand Gulf Nuclear Station	
Title: ANS Evaluation Report Grand Gulf Nuclear	

Part V. Description of Impact of the Proposed Change on the Effectiveness of Emergency Plan Functions:

This new ANS Evaluation Report supports replacement of old sirens with new sirens and a new control system. This change does not reduce the effectiveness of the Emergency Plan. The new ANS control system is of newer technology and more reliable from the same control locations as the previous system. There are the same number of sirens, in the same proximity as the system being replaced. The new sirens have been confirmed to be louder than the sirens being replaced based upon vendor testing. The new sirens are designed to require less maintenance due to newer technology equipment powered by solar energy. This change continues to meet the planning standard outlined in 10 CFR 50.47[B]4. This change does not represent a reduction in the effectiveness to the emergency plan and can be incorporated without prior NRC approval.

10CFR50.54(Q)(3) Evaluation

Procedure/Document Number: ENTANSERGGN201217	Revision:0
Equipment/Facility/Other: Grand Gulf Nuclear Station	
Title: ANS Evaluation Report Grand Gulf Nuclear	

Part VI. Evaluation Conclusion

Answer the following questions about the proposed change.

1. Does the proposed change comply with 10CFR50.47(b) and 10CFR50 Appendix E?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
2. Does the proposed change maintain the effectiveness of the emergency plan (i.e., no reduction in effectiveness)?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
3. Does the proposed change constitute an emergency action level scheme change?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

If questions 1 or 2 are answered NO, or question 3 answered YES, reject the proposed change, modify the proposed change and perform a new evaluation or obtain prior NRC approval under provisions of 10CFR50.90. If questions 1 and 2 are answered YES, and question 3 answered NO, implement applicable change process(es). Refer to Section 6.7 Step 8.

Part VII. Signatures

Preparer Name (Print) Sidney Reeves	Preparer Signature Sidney N Reeves, III <small>Digitally signed by Sidney N Reeves DN: cn=Sidney N Reeves, c=US, o=Grand Gulf Nuclear Station, ou=Emergency Planning, email=sreeves1@entergy.com Reason: 5054 preparer Date: 2021.12.02 15:14:10 -08'00'</small>	Date:
(Optional) Reviewer Name (Print) Dennis Coulter	Reviewer Signature Dennis M. Coulter <small>Digitally signed by Dennis M. Coulter Date: 2021.12.04 11:34:51 -06'00'</small>	Date:
Reviewer Name (Print) Nuclear EP Project Manager	Reviewer Signature Anthony J. Ringgold <small>Digitally signed by Anthony J. Ringgold DN: cn=Anthony J. Ringgold, c=US, o=Entergy, ou=Senior Project Manager, Nuclear, email=aringgo@entergy.com Reason: I attest to the accuracy and integrity of this document Date: 2021.12.05 05:20:28 -06'00'</small>	Date:
Approver Name (Print) Emergency Planning Manager or designee	Approver Signature Michael Lewis <i>M Lewis</i> 2021.12.06 09:32:35 -06'00'	Date: