



Entergy[®]

Entergy Operations, Inc.

River Bend Station
5485 U.S. Highway 61N
St. Francisville, LA 70775
Tel 225-381-4374

William F. Maguire
Site Vice President

RBG-47880

July 3, 2018

Attn: Document Control Desk
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Subject: Licensee Event Report 50-458 / 2018-004-00

River Bend Station, Unit 1
Docket No. 50-458
License No. NPF-47

Dear Sir or Madam:

In accordance with 10 CFR 50.73, enclosed is the subject Licensee Event Report. This document contains no commitments. If you have any questions, please contact Mr. Tim Schenk at 225-381-4177.

Sincerely,

WFM/twf

Enclosure

cc: (with Enclosure)

U.S. Nuclear Regulatory Commission
Attn: Ms. Lisa M. Regner, Project Manager
09-D-14
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

U.S. Nuclear Regulatory Commission
Region IV
1600 East Lamar Blvd.
Arlington, TX 76011-4511

RBG-47874

Page 2 of 2

NRC Senior Resident Inspector
Attn: Mr. Jeff Sowa
5485 U.S. Highway 61, Suite 1
St. Francisville, LA 70775

Public Utility Commission of Texas
Attn: PUC Filing Clerk
1701 N. Congress Avenue
P. O. Box 13326
Austin, TX 78711-3326

INPO
(via ICES reporting)

RB1-18-0140

**LICENSEE EVENT REPORT (LER)**

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form
<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/>)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. Facility Name River Bend Station - Unit 1	2. Docket Number 05000 458	3. Page 1 OF 3
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4. Title Unanalyzed Condition due to Inadequate Protection from Tornado Generated Missiles
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5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved	
Month	Day	Year	Year	Sequential Number	Rev No.	Month	Day	Year	Facility Name	Docket Number
05	04	2018	2018	004	00	07	03	2018	NA	05000

9. Operating Mode	11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)			
1	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☒ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
10. Power Level	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
100	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(1)
	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☒ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(i)
	☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☒ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(ii)
		☐ 50.73(a)(2)(i)(C)	☐ Other (Specify in Abstract below or in NRC Form 366A)	

12. Licensee Contact for this LER	
Licensee Contact Tim Schenk, Manager - Regulatory Assurance	Telephone Number (Include Area Code) 225-381-4177

13. Complete One Line for each Component Failure Described in this Report									
Cause	System	Component	Manufacturer	Reportable to ICES	Cause	System	Component	Manufacturer	Reportable to ICES
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14. Supplemental Report Expected					15. Expected Submission Date				
☐ Yes (If yes, complete 15. Expected Submission Date) ☒ No					Month: NA Day: NA Year: NA				

Abstract (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines)

On May 4, 2018 with the reactor operating in Mode 1 at 100% power, several licensing basis non-compliances associated with tornado-generated missile protection were identified in the Diesel Generator Building. Structures, Systems, or Components (SSC) affected by the non-compliances were declared inoperable. NRC Enforcement Guidance Memorandum (EGM) 5-002, Enforcement Discretion for Tornado-Generated Missile Protection Noncompliance, was utilized to change the classification of the affected SSCs from Inoperable to Operable but Nonconforming. Several days later, additional non-conformances were identified in the Control Building and Standby Cooling Tower. EGM 15-002 was utilized once again to change the classification of the affected SSCs. The identified non-compliances were introduced during original plant construction. Initial and long-term compensatory actions were put in place to meet the enforcement discretion requirements of EGM 15-002. Plans are underway to resolve the non-compliances.

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

(See NUREG-1022, R.3 for instruction and guidance for completing this form
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1. FACILITY NAME

River Bend Station - Unit 1

2. DOCKET NUMBER

05000-

458

3. LER NUMBER

YEAR

2018

SEQUENTIAL
NUMBER

004

REV
NO.

00

NARRATIVE**BACKGROUND**

Enforcement Guidance Memorandum (EGM) 15-002, Enforcement Discretion for Tornado-Generated Missile Protection Noncompliance, provides guidance for exercising enforcement discretion when an operating power reactor licensee does not comply with a plant's current site-specific licensing basis for tornado-generated missile protection. Specifically, enforcement discretion would apply to the applicable Technical Specification (TS) Limiting Condition for Operation (LCO), which would require a reactor shutdown or mode change, if a licensee could not complete TS LCO Required Action within the stated TS Completion Time. Interim Staff Guidance DSS-ISG-2016-01, Clarification of Licensee Actions in Receipt of Enforcement Discretion per Enforcement Guidance Memorandum EGM 15-002, includes additional information intended to facilitate an understanding of the expectations for consistent NRC oversight associated with implementing enforcement discretion for tornado missile protection non-compliance per EGM 15-002. Appendix A to DSS-ISG-2016-01 includes guidance for acceptable initial and follow-up comprehensive compensatory measures for licensee use in implementing the enforcement discretion outlined in EGM 15-002. The licensee is expected to document the utilization of EGM 15-002, inform the NRC resident inspector, and enter the issue into the corrective action program. With respect to initial compensatory measures, it is expected that the measures listed in Appendix A are already in place at sites that may be affected by severe weather, such as tornadoes and/or hurricane force winds. The measures provided should be verified as current and readily deployable within a very short timeframe (the shortest timeframe could, in some scenarios, be dictated by a TS LCO 3.0.3 Completion Time of one hour).

REPORTED CONDITION

On May 4, 2018 with the reactor operating in Mode 1 at 100% power, several licensing basis non-compliances associated with tornado-generated missile protection were identified in the Diesel Generator Building [NB]. The Emergency Diesel Generators [EK] were declared inoperable. NRC Enforcement Guidance Memorandum (EGM) 15-002, Enforcement Discretion for Tornado-Generated Missile Protection Noncompliance, was then utilized to change the classification of the affected System, Structure, or Component (SSC) from Inoperable to Operable but Nonconforming. The utilization of EGM 15-002 was declared in the Main Control Room Log, the resident NRC inspector was notified, and the non-compliances were entered into the corrective action program.

On May 9, 2018 non-conformances were identified in the Control Building [NA] and Standby Cooling Tower [MK]. The following SSCs were affected:

- Division II DC [EJ] electrical power distribution subsystem.
- Division II and III Residual Heat Removal [BO] pumps.
- Division I and II Standby Service Water [BI].

Once again the guidance of EGM 15-002 was followed to change the classification of the affected SSCs from Inoperable to Operable but Non-conforming.

CAUSAL ANALYSIS

These vulnerabilities were introduced during the original design of the plant. Engineering judgement was exercised at the time of original construction to only protect certain openings from tornado missile transit with tornado-generated missile resistant barriers. Other small penetrations were deemed to be inconsequential. Typical engineering and licensing documentation practices at the time of construction did not include documenting such engineering judgements. Due to the historical nature of the issue, a specific cause for the non-compliances was not determined.

CORRECTIVE ACTION

The initial compensatory actions of DSS-ISG-2016-01 Appendix A were verified to be in place and readily deployable. Long



LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
River Bend Station - Unit 1	05000-458	YEAR	SEQUENTIAL NUMBER	REV NO.
		2018	004	00

NARRATIVE

term comprehensive compensatory measures were developed and implemented in accordance with DSS-ISG-2016-01 Appendix A. Plans are underway to resolve the non-compliances with modifications or probabilistic analysis and are being tracked in the station's corrective action program.

PREVIOUS OCCURRENCE EVALUATION

There have been no similar events reported by River Bend Station.

SAFETY SIGNIFICANCE

As stated in the NRC Enforcement Guidance Memorandum, 15-002, the basis for exercising enforcement discretion is a result of a generic risk analysis performed by the Office of Nuclear Reactor Regulation (NRR), Division of Risk Assessment (DRA). The assessment documents a conservative, bounding-type analysis of the risk significance for plant facilities that may not be in compliance with their tornado missile protection licensing basis. The generic nature of this analysis did not afford the staff the capability to assess plant-specific tornado missile protections which likely exist at many reactors in accordance with their Current License Basis, and that would result in lower risk determinations. It also did not consider the plant-specific nature of the non-compliances or the redundancies of SSCs. The generic analysis assumed that core damage would occur if a tornado hit a plant located in the most active tornado region in the country and that it caused a tornado-generated missile to fail all emergency core cooling equipment at the plant with no ability to recover. Given this conservative assumption, the core-damage frequency (CDF) was calculated to be 4E-5 per year, which is more than an order of magnitude below the 1E-3 per year threshold provided in the NRR Office Instruction LIC-504, Integrated Risk-Informed Decision-Making Process for Emergent Issues. Per LIC-504, 1E-03 per year provides a guideline that can be used to determine whether additional regulatory actions should be considered to place a plant in a safe condition. Consequently, the staff's study established that the CDF associated with tornado missile related non-compliances are well below CDFs requiring immediate regulatory action.

As a result of the NRR DRA (ref. EGM 15-002) generic bounding risk analysis, it was concluded that this issue is of low risk significance. This event was of minimal significance to the health and safety of the public.

Tornados are not postulated to occur during or initiate any of the design basis accidents described in UFSAR Chapter 6 or 15. As a result although the issue is being reported as a condition which had the potential for causing the loss of a safety function, no safety function was lost due to this event.

(NOTE: Energy Industry Identification System component function identifier and system name of each component or system referred to in the LER are annotated as (**XX**) and [XX], respectively.