



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
1600 EAST LAMAR BOULEVARD  
ARLINGTON, TEXAS 76011-4511

September 3, 2019

Mr. Steven Vercelli, Site Vice President  
Entergy Operations, Inc.  
River Bend Station  
5485 U.S. Highway 61N  
St. Francisville, LA 70775

SUBJECT: RIVER BEND STATION, UNIT 1 – DESIGN BASIS ASSURANCE INSPECTION  
(PROGRAMS) INSPECTION REPORT 05000458/2019012

Dear Mr. Vercelli:

On August 1, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at River Bend Station, Unit 1, and discussed the results of this inspection with Mr. Kent Scott, General Plant Manager, Plant Operations, and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspectors did not identify any finding or violation of more than minor significance.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

**/RA/**

Vincent G. Gaddy, Chief  
Engineering Branch 1  
Division of Reactor Safety

Docket No. 50-458  
License No. NPF-47

Enclosure:  
Inspection Report 05000458/2019012

cc w/ encl: Electronic Distribution for  
River Bend Station

**U.S. NUCLEAR REGULATORY COMMISSION**  
**Inspection Report**

Docket Number: 05000458

License Number: NPF-47

Report Number: 05000458/2019012

Enterprise Identifier: I-2019-012-0001

Licensee: Entergy Operations, Inc.

Facility: River Bend Station

Location: Saint Francisville, Louisiana

Inspection Dates: July 15, 2019, to August 1, 2019

Inspectors: W. Cullum, Reactor Inspector  
R. Kopriva, Senior Reactor Inspector  
S. Makor, Senior Resident Inspector

Approved By: Vincent G. Gaddy, Chief  
Engineering Branch 1  
Division of Reactor Safety

Enclosure

## **SUMMARY**

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a design basis assurance inspection (programs) inspection at River Bend Station, Unit 1, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

### **List of Findings and Violations**

No findings or violations of more than minor significance were identified during the inspection.

### **Additional Tracking Items**

None

## INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

## REACTOR SAFETY

### 71111.21N - Design Bases Assurance Inspection (Programs)

The inspectors evaluated the 10 CFR 50.49 environmental qualification program implementation through the sampling of the following components:

#### Select Sample Components to Review - Risk Significant/Low Design (Inside/Outside Containment) (IP Section 02.01) (7 Samples)

- (1) E22-FTN056, HPCS Pump Discharge Pressure Transmitter. R369 - Rosemount 1154DP4RBN0037
- (2) E22-PC001, HPCS Motor. G080 – General Electric Company 5K6348XC98A
- (3) EHS-MCC2E-2D, Motor Control Center for E12-MOVF003A Heat Exchanger A Return to Reactor Valve. G182 – Gould Inc (Formerly ITE) I HE43-B030
- (4) HVR-UC5, Aux Building Unit Circulation 5 Fan Motor. R165 – Reliance Electric Company 326TCZ
- (5) RCP-LVP09, Containment Low Voltage Power Cables Electrical Penetration. RCP-LVP09, C515 - Conax Corporation
- (6) SWP-MOV55B, Standby Cooling Tower 1 – Division 2 Return Line Isolation Valve Operator. L200 – Limitorque Corporation SMB-00
- (7) HVR-SOV162, Air Operated Damper 162 Solenoid Valve. A610 - ASCO – Automatic Switch Company NP8321A5E

#### Select Sample Components to Review - Primary Containment (Inside Containment) (IP Section 02.01) (3 Samples)

- (1) B21-LTN091A, Reactor Level Transmitter for ADS AZ-38. R369 - Rosemount 1154DP5RBN0037
- (2) C11-SOV139-0433, Scram Discharge Riser 3-Way Solenoid Valve. G080 – General Electric Company 112D5214P001

- (3) RCP-TCR05A, Reactor Containment Electrical Inboard Penetration LVP9 & 9A  
Termination Cabinet. R098 – Raychem Corporation RCP-TCR05A

## **INSPECTION RESULTS**

No findings were identified.

## **EXIT MEETINGS AND DEBRIEFS**

On August 1, 2019, the inspectors presented the design basis assurance inspection (programs) inspection results to Mr. K. Scott, General Plant Manager, Plant Operations, and other members of the licensee staff. The inspectors verified no proprietary information was retained or documented in this report.

## DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21N	Calculations	ES-170	Accident Environmental Conditions in the Containment, Auxiliary Building, and Steam Tunnel, Addendum E	6
71111.21N	Calculations	G13.18.9.4*022	Environmental Design Criteria (EDC) Radiation Zone Dose Rates and Doses (Normal, Abnormal, and Accident)	2
71111.21N	Calculations	G13.18.9.4*22	Effect of Core Uprate on Environmental Design Criteria Radiation Dose Rates and Doses	1
71111.21N	Corrective Action Documents	Condition Reports	CR-RBS-2014-00172, CR-RBS-2014-02790, CR-RBS-2014-03643, CR-RBS-2014-03657, CR-RBS-2014-06176, CR-RBS-2014-06563, CR-RBS-2015-06622, CR-RBS-2015-06914, CR-RBS-2015-08690, CR-RBS-2015-09010, CR-RBS-2016-01371, CR-RBS-2016-02390, CR-RBS-2016-03204, CR-RBS-2016-03580, CR-RBS-2016-04706, CR-RBS-2016-06479, CR-RBS-2016-07810, CR-RBS-2017-08190, CR-RBS-2019-03937, CR-RBS-2019-04836, CR-RBS-2019-04837, CR-RBS-2019-04851, CR-RBS-2019-04856, CR-RBS-2019-04905, CR-RBS-2019-04949, CR-RBS-2019-05056, CR-RBS-2019-05061, CR-RBS-2019-05087, CR-RBS-2019-05101, CR-RBS-2019-05110	
71111.21N	Corrective	Condition	CR-RBS-2019-04836,	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Action Documents Resulting from Inspection	Reports	CR-RBS-2019-04906, CR-RBS-2019-05101, CR-RBS-2019-04837, CR-RBS-2019-04949, CR-RBS-2019-05110, CR-RBS-2019-04851, CR-RBS-2019-05056, CR-RBS-2019-04856, CR-RBS-2019-05061, CR-RBS-2019-04905, CR-RBS-2019-05087	
71111.21N	Drawings	0242.562-082-092	Front View and Bill of Material 1EHS-MCC2E	1
71111.21N	Drawings	0242.562-082-302	Schematic and Wiring Diagram for FVR Starter	0
71111.21N	Drawings	105D4988	Hydraulic Control Unit	4
71111.21N	Drawings	12210-EM-2B-7	MACH LOCN Reactor Building SH 2 Plans EL 114'-0" and 140'-0"	7
71111.21N	Drawings	EE-001AA	480V One Line Diagram Standby Bus EJS-LDEC1A & 2A	27
71111.21N	Drawings	EE-001TC	480 V One Line Diagram EHS-MCC2E Auxiliary Building	10
71111.21N	Drawings	EE-009NG	480V Wiring Diagram EHS-MCC2E Auxiliary Building	7
71111.21N	Drawings	EE-450BB	Class 1E Equipment Conduit Seal List and Devices	8
71111.21N	Drawings	EE-450BC-3	Seismic Conduit Supports Standard Details	3
71111.21N	Drawings	EE-450BD-5	Class 1E Equipment Conduit Seal List and Devices	5
71111.21N	Drawings	ESK-06RHS01	480V Control Circuit Residual Heat Removal System	9
71111.21N	Drawings	I2210-EM-34B-7	MACH LOCN Auxiliary Bldg. Plans EL 114'-0" & 141'-0"	N/A
71111.21N	Drawings	TLD-HVR-103	Containment / Drywell Purge to Standby Gas Treatment System HVR-AOD162	0
71111.21N	Drawings	TLD-MSS-107	Test Loop Diagram Reactor	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Water Level B21-LTN044E	
71111.21N	Miscellaneous	3221.4111-000-004H	P/N for Motor Oil Drain Plug	H
71111.21N	Miscellaneous	3224.110-000-049A	O/M Hydraulic Control Unit	301
71111.21N	Miscellaneous	3242.562-082-001A	Instruction Manual – I/O & Maintenance MCC's	08/08/2018
71111.21N	Miscellaneous	6215.480-278-002H	ASCO IEEE-323 Test Report	301
71111.21N	Miscellaneous	6215.480-278-011A	Qualification of Automatic Switch Co. (ASCO) NS Solenoid Valves for Safety-Related Applications in Nuclear Power Generating Stations	1
71111.21N	Miscellaneous	6228.212-047-068D	Limiter Valve Actuator Qualification for Nuclear Power Station Service – Report B0058. Seismic and Qualification Test Report for IEEE 323, 382, and 344.	10/26/1984
71111.21N	Miscellaneous	6228.212-047-117A	Nuclear Power Station Qualification Type Test Report Limitorque Valve Actuators with Type LR Motor for Westinghouse PWR, Report B0212	01/29/1992
71111.21N	Miscellaneous	6228.212-047-120A	Supplier's Document Data Form, Comparative Analysis of Neubla and MOV Long Life Greases for Limitorque Main Gearbox Applications	300
71111.21N	Miscellaneous	6247.481-130-002I	Qualification Report for Pressure Transmitters, Rosemount Model 1153 Series B, Rosemount Report 108025	I
71111.21N	Miscellaneous	6247.481-130-010C	Qualification Report for Pressure Transmitters, Rosemount Model 1153 Series D, Rosemount Report D8300040	E
71111.21N	Miscellaneous	6247.481-130-	Qualification Report for	F



Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		011A	Pressure Transmitter Model 1154	
71111.21N	Miscellaneous	6247.481-130-011E	Qualification Report for Pressure Transmitters, Rosemount Model 1154, Rosemount Report D8400102	F
71111.21N	Miscellaneous	6247.481-130-012A	Qualification Test Procedure for Modified Temperature Compensated Units, Model 1154, Procedure D8400004	B
71111.21N	Miscellaneous	6247.481-130-021E	Qualification Report Model 1153/1154 Damping Option - N0037, Rosemount Report D8800053	E
71111.21N	Miscellaneous	6247.481-130-025B	Type Test Report for Pressure Transmitters Rosemount Models 1153, Series B and Output code "R", Rosemount Report D8300131	C
71111.21N	Miscellaneous	6247.481-130-027A	Type Test Report for Extension of Qualified Life of Pressure Transmitters, Rosemount Models 1153, Series B and D, Rosemount Report D8300010	A
71111.21N	Miscellaneous	6247.481-130-028A	Type Test Report for Overranged Range 4 Units, Model 1153 and 1154, Rosemount Report D8600010	D
71111.21N	Miscellaneous	6247.481-130-029B	Qualification Report for Rosemount Model 1154, Series H Pressure Transmitter, Rosemount Report D8700096	I
71111.21N	Miscellaneous	6247.481-130-030B	Qualification Report for Output Code R OP Amp Replacement, Rosemount Report D9900005	B
71111.21N	Miscellaneous	6247.481-130-031A	Qualification Test Procedure Model 1153/1154 Pressure Transmitter, Rosemount	A

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Procedure D8800046	
71111.21N	Miscellaneous	6247.481-130-031A	Qualification Test Procedure Model 1153/1154 Pressure Transmitter, Rosemount Procedure D8800060	B
71111.21N	Miscellaneous	6247.481-130-032A	Qualification Report R Output Code Electronics with N53304 Operational Amplifier, Rosemount Report D9100062	B
71111.21N	Miscellaneous	8224.150-000-057A	Environmental Qualification Conditions for BWR/6 ECCS Motors	0
71111.21N	Miscellaneous	8224.150-000-095A	Environmental Qualification Report for the Differential and Gage Pressure Transmitter	06/28/1985
71111.21N	Miscellaneous	8224.150-000-095B	BQR-Pressure Transmitter Differential and Gage 1154	2
71111.21N	Miscellaneous	8224.150-000-096A	BQR-Pressure Transmitters 1152	08/14/1985
71111.21N	Miscellaneous	8224.150-000-105	Equipment Qualification for ASCO Valve Inc. Redundant Solenoid Pilot Valve for Class 1E Applications	0
71111.21N	Miscellaneous	8224.150-006-057B	Topical Report on Qualification Tests on General Electric Class 1E EES Motors Covered by ECCS Qualification Program 22A722, Rev. 0, at Higher Radiation Levels	07/18/1980
71111.21N	Miscellaneous	8224.212-150-000-098A	River Bend Station – Unit 1, Environmental Qualification Report (NUREG 0588, Category 1), Book No. S03A, Volume 1	11/26/1986
71111.21N	Miscellaneous	8224.212-150-000-098A	River Bend Station – Unit 1, Environmental Qualification Report (NUREG 0588, Category 1), Book No. S03A, Volume 2	11/26/1986
71111.21N	Miscellaneous	EN-IC-S-031-R	Replacement of Rosemount Model 1154 Transmitters at	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			River Bend Station	
71111.21N	Miscellaneous	EQAR-007	Raychem Heat Shrink and Tubing Kits	4
71111.21N	Miscellaneous	EQAR-017	ASCO NP Series Solenoid Operated Valves	4
71111.21N	Miscellaneous	EQAR-025	Limiterque Motorized Valve Actuators with Class B Insulated AC Motors	5
71111.21N	Miscellaneous	EQAR-035	Conax 600V Power & Control and Personnel Airlock Electrical Penetrations	3
71111.21N	Miscellaneous	EQAR-049	Telemecanique Series 5600 Motor Control Centers	5
71111.21N	Miscellaneous	EQAR-058	Rosemount Model 1154 Alphaline Pressure Transmitters	3
71111.21N	Miscellaneous	EQAR-073	GE Vertical 4160V Pump Motors	3
71111.21N	Miscellaneous	EQAR-079	ASCO Scram Pilot Solenoid Valves	0
71111.21N	Miscellaneous	EQCL Report – 9283	EQCL Master Equipment List. EQCL Report Supporting the EQ Program	06/13/2019
71111.21N	Miscellaneous	EQIS C-350	Equipment Qualification Impact Summary (EQIS): Deletion of lubrication Requirements for Double Shielded Bearings in Westinghouse Motors	3
71111.21N	Miscellaneous	LPL-EQMI-01.00	Environmental Qualification Installation Configurations	3
71111.21N	Miscellaneous	None	Entergy Nuclear- Riverbend: Oil Analysis Severity Summary HPCS Motor Bearings	02/14/2019
71111.21N	Miscellaneous	PSA-RBS-01	River Bend Station Probabilistic Safety Assessment Summary Report	0
71111.21N	Miscellaneous	R369-0141	Rosemount Instructions for Model 1154 Alphaline	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Pressure Transmitter for Nuclear Service	
71111.21N	Miscellaneous	Report B0058	Limiter Valve Actuator Qualification for Nuclear Power Station Service	01/11/1980
71111.21N	Miscellaneous	Report B0119	Qualification Type Test Report of Multi-Point Terminal Strips for use in Limitorque Valve Actuators for PWR Service	07/01/1982
71111.21N	Miscellaneous	VTD-G080-1707	Vendor Technical Document: General Electric Instructions – Boiling Water Reactor Emergency Core Cooling Pump Motors (Pub.# GEH-4215)	0
71111.21N	Miscellaneous	VTD-G080-2360	ECCS Pump Motor Upper Bearing Clamp Ring	0
71111.21N	Miscellaneous	VTD-G080-2361	Experience with AC Motors	0
71111.21N	Miscellaneous	VTD-P959-0100	PDMA Product Support Manual: Motor Monitoring Test Equipment	0
71111.21N	Miscellaneous	VTD-W120-0246	Westinghouse Instruction Leaflet – AC Motors Frames	05/30/1996
71111.21N	Procedures	220.950/960	High Energy Line Break (HELB) Evaluation Report	1A
71111.21N	Procedures	EDP-EQ-23	Equipment Qualification Assessment Reports (EQAR) G12.1.22	3
71111.21N	Procedures	EDP-EQ-24	Environmental Qualification Thermal Aging Program (EQTAP) G12.1.22	301
71111.21N	Procedures	EN-DC-115	Engineering Change Process	26
71111.21N	Procedures	EN-DC-141	Design Inputs	17
71111.21N	Procedures	EN-DC-164	Environmental Qualification (EQ) Program	5
71111.21N	Procedures	EN-DC-210	Environmental Qualification Master List Control	4
71111.21N	Procedures	EN-OP-104	Operability Determination Process	16

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21N	Procedures	G12.1.15	Accident Monitoring – Reactor Vessel Water Level Fuel Zone Channel Calibration (B21-LTN044E, B21-R610E)	12
71111.21N	Procedures	SEP-EQ-RBS-001	Environmental Qualification (EQ) Review	0
71111.21N	Procedures	STP-203-6305	HPCS Quarterly Pump and Valve Operability Test	31
71111.21N	Work Orders	Work Orders	WO-RBS-00236138, WO-RBS-00287279, WO-RBS-00287282, WO-RBS-00287284, WO-RBS-00287286, WO-RBS-00287298, WO-RBS-00287306, WO-RBS-00363378, WO-RBS-00363379, WO-RBS-00363382, WO-RBS-00364280, WO-RBS-00364283, WO-RBS-00364288, WO-RBS-00388747, WO-RBS-00392184, WO-RBS-00397667, WO-RBS-00488608, WO-RBS-52409651, WO-RBS-52416439, WO-RBS-52479628, WO-RBS-52605262, WO-RBS-52619454, WO-RBS-52667391, WO-RBS-52742104, WO-RBS-52766262, WO-RBS-52768253, WO-RBS-52854272, WO-RBS-52863758, WO-RBS-52864026, WO-RBS-52868836, WO-RBS-52870416, WO-RBS-52873652	

RIVER BEND STATION, UNIT 1 – DESIGN BASIS ASSURANCE INSPECTION (PROGRAMS)  
INSPECTION REPORT 05000458/2019012 – SEPTEMBER 3, 2019

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