



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

December 2, 2019

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

SUBJECT: RIVER BEND STATION – TRIENNIAL FIRE PROTECTION INSPECTION  
REPORT 05000458/2019010

Dear Mr. Vercelli:

On November 7, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at River Bend Station. On November 7, 2019, the NRC inspectors discussed the results of this inspection with Mr. K. 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/**

Nicholas H. Taylor, Chief  
Engineering Branch 2  
Division of Reactor Safety

Docket No. 05000458  
License No. NPF-47

Enclosure:  
As stated

cc w/ encl: Distribution via LISTSERV®

RIVER BEND STATION – TRIENNIAL FIRE PROTECTION INSPECTION  
REPORT 05000458/2019010 – DECEMBER 2, 2019

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NRC-002

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

Docket Number: 05000458

License Number: NPF-47

Report Number: 05000458/2019010

Enterprise Identifier: I-2019-010-0001

Licensee: Entergy Operations, Inc.

Facility: River Bend Station

Location: St. Francisville, LA

Inspection Dates: October 21, 2019, to November 7, 2019

Inspectors: S. Anderson, Health Physicist  
C. Hobbs, Reactor Inspector  
J. Mateychick, Senior Reactor Inspector  
N. Okonkwo, Reactor Inspector

Approved By: Nicholas H. Taylor, Chief  
Engineering Branch 2  
Division of Reactor Safety

Enclosure

## **SUMMARY**

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a triennial fire protection inspection at River Bend Station 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.

### **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**

### 71111.05T - Fire Protection

#### Fire Protection Inspection Requirements (IP Section 02.02) (4 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas and/or fire zones, including analyzed electrical circuits:

- (1) AB-1/Z-4 Auxiliary Building – West Side Crescent, 141' Level
- (2) C-2 Control Building Cable Chase II
- (3) C-15 Division I Standby Switchgear Room
- (4) C-25 Control Room

#### B.5.b Inspection Activities (IP Section 02.03) (1 Sample)

- (1) OSP-0066, Revision 31, Attachment 20 – "Operation of FPW-P4"

## **INSPECTION RESULTS**

No findings were identified.

## **EXIT MEETINGS AND DEBRIEFS**

The inspectors verified no proprietary information was retained or documented in this report.

- On November 7, 2019, the inspectors presented the triennial fire protection inspection results to Mr. K. Scott, General Plant Manager, Plant Operations, and other members of the licensee staff.

## DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.05T	Calculations	G13.18.14.0*171	Determine if Post-Fire Safe Shutdown SSW loads can be satisfied with one SSW pump	1
	Corrective Action Documents	Condition Reports (CR-RBS-XXX-YYYYY)	2013-03397, 2016-02953, 2016-03264, 2018-03030, 2018-03575, 2019-00830, 2019-02524, 2019-05541, 2019-06023, 2019-06086, 2019-06097, 2019-06149, 2019-06801, 2019-06838, 2019-06839, 2019-07049, 2019-07130, 2019-07134, 2019-07135, 2019-07136, 2019-07188	
	Corrective Action Documents Resulting from Inspection	Condition Report (CR-RBS-XXXX-YYYYY)	2019-6795, 2019-6796, 2019-6805, 2019-6809, 2019-6838, 2019-6839, 2019-6920, 2019-6968, 2019-6989, 2019-7010, 2019-7023, 2019-7134, 2019-7135, 2019-7136, 2019-7140, 2019-7143, 2019-7188	
	Drawings	12210-CBD-10ANN17-01	Cable Block Diagram, Annunciators	08
		CE-001A	Appendix R Safe Shutdown Analysis Emergency Lighting Control Building EL. 98'-0"	6
		CE-001C	Appendix R Safe Shutdown Analysis Emergency Lighting Control Building EL. 136'-0"	5
		CE-001K	Appendix R Safe Shutdown Analysis Emergency Lighting Auxiliary Building EL. 141'-0"	6
		EE-001AZ	480 V MCC One Line Diagram, General Notes, Symbols, Location and References	12
		EE-001K	4160V One Line Diagram, Standby Bus ENS-SWG1A	26
		EE-001TA	480V One Line Diagram, EHS-MCC2A & 2L, Auxiliary Building	19
		EE-001TB	480V One Line Diagram, EHS-MCC2C & 2D, Auxiliary Building	13
		EE-001TE	480V One Line Diagram, EHS-MCC2J & K, Auxiliary Building	21
		EE-008AQ	4160V Wiring Diagram, Standby Bus ENS-SWG1A	17
		EE-008AR	4160V Wiring Diagram, Standby Bus ENS-SWG1A	21
		EE-008AS	4160V Wiring Diagram, Standby Bus ENS-SWG1A	10

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		EE-027A	Arrangement Main Control Room	17
		EE-027C	Arrangement Control BLDG, Standard Switchgear Area	9
		EE-34ZE	Standard Details For Separation Requirement	9
		EE-34ZH	Standard Details For Separation Requirement	8
		EE-34ZJ	Standard Details Installation of Barriers For Separation	4
		ESK-05CSL01, Sh. 1	Elementary Diagram 4.16KV Low Pressure Core Spray Pump	14
		ESK-05ENS01, Sh. 1	Elementary Diagram 4.16KV Switchgear Standby Bus 1A Normal Supply ACB	19
		ESK-05ENS04, Sh. 1	Elementary Diagram 4.16KV Switchgear Standby Bus 1A Alternate Supply ACB	19
		ESK-05ENS06, Sh. 1	Elementary Diagram 4.16KV Switchgear Standby Bus 1A GEN ACB	21
		ESK-05ENS08, Sh. 1	Elementary Diagram 4.16KV Switchgear Transformer EJS-X1A Feeder ACB	17
		ESK-05ENS09, Sh. 1	Elementary Diagram 4.16KV SWGR XFMR EJS-X2A FDR ACB	18
		ESK-05ENS14, Sh. 1	Elementary Diagram 4.16KV SWGR STBY NORM. SPLY ACB	9
		ESK-05ENS16, Sh. 1	Elementary Diagram 4.16KV SWGR STBY BUS 1A ALTN SPLY ACB	9
		ESK-05ENS18, Sh. 1	Elementary Diagram 4.16KV SWGR STBY XFMR 1EJS-3A FDR ACB	13
		ESK-05RHS01, Sh. 1	Elementary Diagram 4.16KV Residual Heat Removal Pump E12-PC002A	19
		ESK-05SWP04, Sh. 1	Elementary Diagram 4.16KV Switchgear Standby SWP-P2A	31
		ESK-06CSL01, Sh. 1	Elementary Diagram 480V Control Circuit Low Pressure Core Spray MOV'S	8
		ESK-06RHS06, Sh. 1	480V Control CKT Residual Heat Removal System	13
		ESK-11SWP05, Sh. 1	Elementary Diagram, 125V Cont. CKT, Standby Service water Aux. Control	5

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		EW-103K	480V One Line Diagram, NHS-MCC-9L2 & L3, Admin Complex in Services Building	13
		PID-09-100	Engineering P & I D Diagram, System 118, Service Water Normal	37
		PID-09-10E	Engineering P & I Diagram System 256 Service Water - Standby	24
		PID-23-12B	Engineering P & I Diagram System 609 Drains - Floor and Equipment	7
		PID-27-06A	Engineering P & I Diagram System 209 reactor core Isolation Cooling	45
		PID-27-07A	Engineering P & I Diagram System 204 Residual Heat Removal - LPCI	38
		PID-27-20C	Engineering P & I Diagram System 208 LSV*C3A Copressor Skid	3
		Updated Safety Analysis Report Figure 9A.2-2	Fire Area boundaries Plant Plan View-Elevations 65'-0" to 90'-0"	13
		Updated Safety Analysis Report Figure 9A.2-3	Fire Area Boundaries Plant Plan View -Elevations 83'-0" to 106'-0"	22
		Updated Safety Analysis Report Figure 9A.2-4	Fire Area Boundaries Plant Plan View-Elevations 109'-0" to 148'-0"	21
		Updated Safety Analysis Report Figure 9A.2-5	Fire Area Boundaries Plant Plan View-Elevations 113'-0" to 186'-0"	13
		WD-84-51380-23-C97	Schematic and Wiring Diagram for FVR Starter	0
	Engineering Changes	EC 64599	Backup FPW Connections	0
		EC 71077	Permanent Abandonment of Temperature Control Valves HVK-TV17A and HVK-TV17B Instrument and Controls	0
		EC 75020	240.201A Mark-Up for Addition of Emergency Lights	0
		EC 75864	Replacement of Transformer RCS-X1B for Recirc Pump B Motor	0



Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		EC 78833	Install Blind Flange on 066-13-4 Line to Stop Leak	0
		EC EE 81170	Engineering Change EC Engineering Temporary Power for SFC-PIB During RF 20	0
		EC-80650	Spared in Place Automatic Beam Smoke Detection systems in FLEX Buildings (North and South)	0
	Fire Plans	AB-141-529	Mezzanine Area West Fire Area AB-1/Z-4	4
		CB-070-102	Cable Chase II Fire Area C-2	3
		CB-098-116	Cable Chase II Fire Area C-2	3
		CB-098-118	Standby Switchgear 1A Room Fire Area C-15	3
		CB-116-126	Cable Chase II Fire Area C-2	4
		CB-136-138	Control Room Fire Area C-25	6
		NS-98	Normal Switchgear Building, Elevation 98'	2
	Miscellaneous	1EJSCRC204	Circuits Reviewed	N/A
		1NNSANH309		
		1NNSANH310		
		1NNSANH312		
		1NNSANH306		
		1NNSANH305		
		1ENSARH300		
		1ENBARC619		
		1ENBARC628		
		1SWPA2H300		
		1ENSARH301		
		1ENSARH304		
		1ENBARC630		
		1ENSARC300		
		1ENSARC301		
		1ENSARC302		
		1SYDARC450		
		1CSLNRC004		
		1CSLNRC005		
		1CSLNRK005		
		1EHSJRL200		
		1EHSJRL201		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		1EHSCRL202 1EGSARC451 1ENSARC304 1ENSARC307 1ENSARC317 1ENSARC318 1ENSARC319 1ENSARC326 1ENSARC338 1ENSARC450 1ENSARC451 1SYDARC451 1SYDARC452		
		Design Criterion 240.201A	Post-Fire Safe Shutdown Analysis	6
		EN-DC-330	Fire Protection Program	5
		RBS-FP-17-00003	River Bend Supplementary MSO Analysis for Fire Area Outside of the Main Control Room	0
		RBS-FP-17-00004	River Bend Supplementary MSO Analysis for Appendix R Alternate Shutdown Areas	0
		SEA-95-001	River Bend Station Engineering Report for Individual Plant Examination of External Plants (IPEEE)	0
		SEP-FPP-RBS-001	River Bend Station Fire Protection Program	6
		Updated Final Safety Analysis Report Appendix A	Aging Management	26
		Updated Safety Analysis Report Section 9.5.2	Communication Systems	24
		Updated Safety Analysis Report Section 9B	Fire Protection Program Comparison With Appendix R to 10CFR50	24

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		Updated Safety Analysis Report, Section 9A	Fire Hazards Analysis	26
		Yokogawa DX2000 Recorder Operator Code	VTD-Y006-0234	0
	Procedures	OSP-0602	Remote Shutdown System Control Circuit Operability Test (Switches 43-1HVCN30, 43-1HVCN31 and 43-1HVKA01)	7
		ADM-0037	Equipment Identification and Labeling	018
		AOP-0031	Shutdown from Outside the Main Control Room	335
		AOP-0052	Fire Outside the Main Control Room in Areas Containing Safety Related Equipment	29
		CMP-1277	Lugging, Splicing, and Termination of Power, Control and Instrument Cable.	14
		EN-DC-115	Engineering Change Process	27
		EN-DC-127	Control of Hot Work and Ignition Sources	20
		EN-DC-132	Control of Engineering Documents	8
		EN-DC-161	Control of Combustibles	20
		EN-DC-179	Preparation of Fire Protection Engineering Evaluations	6
		EN-DC-330	Fire Protection Program	5
		EN-WM-105	Firefighting Equipment	11/05/2019
		NE-DC-128	Fire Protection Impact Reviews	12
		NEI 00-01	Guidance For Post Fire Safe Shutdown Circuit Analysis	3
		OP-0052	Fire Outside the Main Control Room in Areas Containing Safety Related Equipment	020
		OSP-0066	Extensive Damage Mitigation Procedure	31
		OSP-0600	Remote Shutdown System Control Circuit Operability (Switches 43-LSVA08 AND 1A-LSV08)	002
		OSP-0610	Remote Shutdown System Control Circuit Operability Test (Switch 43-1EGAN05)	0
		SEP-FFP-RBS-002	River Bend Station Fire Fighting Procedure	3
		SEP-FPP-RBS-	River Bend Station Fire Protection Program	6

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		001		
		SEP-FPP-RBS-005	River Bend Station Duties of Fire Watch	2
		SEP-FPP-RBS-006	Fire Protection System Impairment	004
		SOP-0027	Remote Shutdown System (#200)	308
		SOP-0031	Residual Heat Removal (Sys #204)	342
		SOP-0058	Control Building HVAC System (Sys. #402)	27
		SOP-0061	Diesel Generator Building Ventilation	16
		STP-200-0603	Division III Remote Shutdown System Control Circuit Operability Test	17
		STP-200-0605	Shutdown System Control Circuit Operability Test (Switches S1, S6, S7, S8, S9 & S12)	309
		STP-200-0606	Remote Shutdown System Control Circuit Operability Test (Switches S1, S2, S3, S4, S5, and S11)	309
		STP-200-0607	Division 1 Remote Shutdown System Control Circuit Operability Test (Switch S10)	305
		STP-200-0613	Remote Shutdown System Control Circuit Operability Test (Switches 43-1SWPA45, and 43-SWPA46)	004
		STP-251-3602	Fire Pump Functional Test	016
		TPP-7-021	Fire Protection Training and Qualifications	15
	Self-Assessments	LO-RLO-2018-00010	RBS Fire Protection Focused Self-Assessment	4/18/2019
		QA-9-2018-RBS-1	Quality Assurance Audit Report	1
	Work Orders	00046684	EJS-SWG2B Global PM Clean and Inspect, RE	28
		00234145	EHS-MCC2J-1C INSTALL BREAKER FROM EHS-MCC16A-8BT/BB	01
		00446603	STP-251-3700: Fire System Yard Water Suppression Loop Flow	01
		52427157	STP-303-1700: (Div. 2) Table 4 / EHS-MCC2K-4A (E12-F009)	01
		52442213	STP-000-3604: Fire Barrier Sealed Penetration Inspection	01
		52505675	STP-251-3701: Spray and Sprinkler Open Nozzle Head Air Flow	01
		52528148	STP-251-3700: Fire System Yard Water Suppression Loop	01

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Flow	
		52541735	STP-000-3604: Fire Barrier Sealed Penetration Inspection	01
		52559801	STP-251-7607: FPW-P1A Fire Pump Engine 72 Month Inspection	01
		52572828	Post Service Discharge Test for Appendix R Emergency Lights	06/28/16
		52633994	STP-251-3602: Fire Pump Functional Test	01
		52644283	STP-000-3603: Fire Damper Visual Inspection	01
		52644283	STP-000-3603: Fire Damper Visual Inspection	01
		52651144	Post Service Discharge Test for Appendix R Emergency Lights	08/24/17
		52660042	STP-251-3601: Fire Protection Sprinkler Header/Nozzle Inspection	01
		52695875	STP-251-3701: Spray and Sprinkler Open Nozzle Head Air Flow	01
		52717898	FPW-P2 OFF-LINE MOTOR TESTING WITH GVI - GENERAL VISUAL INSP.	01
		52732340	STP-251-3602: Fire Pump Functional Test	01
		52739162	STP-281-7609: FPW-P1B Fire Pump Engine 72 Month Inspection	01
		52740244	STP-251-3501: Tech Spec Related Yard Fire Hydrant Flow Test	01
		52756896	STP-251-3601: Fire Protection Sprinkler Header/Nozzle Inspection	01
		52763560	STP-200-0608: REMOTE SHUTDOWN SYSTEM CONTROL CIRCUIT OPERAB	01
		52767668	STP-200-0607: DIVISION 1 REMOTE SHUTDOWN CONTROL CIRCUIT OP	01
		52786304	Fire Extinguishers - Perform Annual Inspection	01
		52805279	STP-251-3501: Tech Spec Related Yard Fire Hydrant Flow Test	01
		52806840	STP-000-3603: Non-Divisional on Line Fire Damper Visual Inspection	01
		52806840	STP-000-3603: Non-Divisional on Line Fire Damper Visual Inspection	01
		52827617	FPW-P4 Mitigation Strategy Pump Annual Maintenance	06/28/19

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		52844634	Gaitronics Speaker Verification - Control Building & Diesel Building	08/04/019
		52871619	Gaitronics Speaker Verification - Auxiliary Building	08/17/19
		52882768	SOP-0054, FWP-P4 Contingency Equipment Quarterly Run and Inspection	08/27/19
		52888427	FPP-0090: Fire-Fighting Equipment Inventory Inspection	01
		52894962	STP-251-3205: Diesel Fire Pump Operational Test	01
		52896369	Fire Extinguishers - Perform Monthly Inspection	01
		52897387	Operations Fire Extinguisher Monthly Inspection	01
		52901393	Operations Fire Extinguisher Monthly Inspection	01