



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011-8064**

June 12, 2001

Randal K. Edington, Vice President - Operations  
River Bend Station  
Entergy Operations, Inc.  
P.O. Box 220  
St. Francisville, Louisiana 70775

SUBJECT: RIVER BEND STATION - NRC INSPECTION REPORT 50-458/01-05

Dear Mr. Edington:

On May 18, 2001, the NRC completed a 1-week onsite team triennial fire protection baseline inspection at your River Bend Station. The enclosed report presents the results of this inspection. We discussed the preliminary results of the onsite inspection with you, and other members of your staff on May 18, 2001. On June 4, 2001, we conducted a telephonic exit with Mr. B. Mashburn, and other members of your staff to present the results of the inspection.

The inspection involved an examination of the effectiveness of activities conducted under your license as they related to the implementation of your NRC-approved fire protection program and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of selected examinations of procedures and representative records, observations of activities, and interviews with personnel.

No findings of significance were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,  
/RA/

Jeffrey L. Shackelford, Chief  
Engineering and Maintenance Branch  
Division of Reactor Safety

Docket: 50-458  
License: NPF-47

Entergy Operations, Inc.

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Enclosure:  
NRC Inspection Report  
50-458/01-05

cc w/enclosure:  
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Electronic distribution from ADAMS by RIV:

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Branch Chief, DRP/B (**WDJ**)

Senior Project Engineer, DRP/B (**RAK1**)

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Scott Morris (**SAM1**)

NRR Event Tracking System (**IPAS**)

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SRI:EMB	SRI:EMB	RI:EMB	RI:PBB	C:EMB
RPMullikin/lmb	MFRunyan	PAGoldberg	JDHanna	JLShackelford
/RA/	/RA/	/RA/	/RA/	/RA/
06/06/01	06/11/01	06/05/01	06/06/01	06/07/01
C:PBB	C:EMB			
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/RA/	/RA/			
06/07/01	06/12/01			

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**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket: 50-458

License: NPF-47

Report No.: 50-458/01-05

Licensee: Entergy Operations, Inc.

Facility: River Bend Station

Location: 5485 U.S. Highway 61  
St. Francisville, Louisiana

Dates: May 14 - 18, 2001

Inspectors: R. P. Mullikin, Senior Reactor Inspector  
Engineering and Maintenance Branch

M. F. Runyan, Senior Reactor Inspector  
Engineering and Maintenance Branch

P. A. Goldberg, Reactor Inspector  
Engineering and Maintenance Branch

J. D. Hanna, Resident Inspector  
Division of Reactor Projects

Accompanying Personnel: J. L. Taylor, Reactor Inspector  
Engineering and Maintenance Branch

F. J. Wyant, Contractor  
Sandia National Laboratories

Approved By: Jeffrey L. Shackelford, Chief  
Engineering and Maintenance Branch  
Division of Reactor Safety

## SUMMARY OF FINDINGS

IR 05000458/01-05; on 05/14-18/2001; Entergy Operations, Inc.; River Bend Station; Triennial Fire Protection Inspection.

This report covers a 1-week onsite inspection by a team of four regional inspectors and one contractor from Sandia National Laboratories during May 14-18, 2001. The inspectors used NRC Inspection Procedure 71111.05 to evaluate the licensee's implementation of their NRC-approved fire protection program. However, certain associated circuit issues, which are the subject of an ongoing, voluntary industry initiative, were not reviewed in this inspection. This portion of the inspection procedure was not performed in order to permit the industry to develop an approach and methodology to resolving the associated circuits issues that the NRC can endorse and to provide for licensees to implement the resolution methodology once approved.

The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.

Cornerstones: Initiating Events and Mitigating Systems

No findings of significance were identified.

## Report Details

### 1. REACTOR SAFETY

#### 1R05 Fire Protection

The purpose of this inspection was to review the River Bend Station fire protection program for selected risk significant fire areas with emphasis on verification that the post-fire safe shutdown capability and the fire protection features provided for ensuring that at least one post-fire safe shutdown success path is maintained free of fire damage. The inspection was performed in accordance with the new NRC regulatory oversight process using a risk-informed approach for selecting the fire areas and attributes to be inspected. The team used the River Bend Station's individual plant examination of external events to choose several risk-significant areas for detailed inspection and review. The fire areas chosen for review during this inspection were:

- Fire Area AB-1 (west side crescent area)
- Fire Area AB-2 (HPCS & HPCS hatch area)
- Fire Area C-15 (Division I standby switchgear room)
- Fire Area C-17 (control building ventilation room)
- Fire Area ET-1 (B-tunnel east)

For each of these fire areas, the team focused their inspection on the fire protection features and on the systems and equipment necessary for the licensee to achieve and maintain safe shutdown conditions.

#### .1 Systems Required to Achieve and Maintain Post-Fire Safe Shutdown

##### a. Inspection Scope

The team reviewed the licensee's piping and instrumentation diagrams and the list of safe shutdown equipment documented in the River Bend Station post-fire safe shutdown analysis to verify whether the licensee's shutdown methodology had properly identified the components and systems necessary to achieve and maintain safe shutdown conditions for equipment in the fire areas selected for review. The team focused on the following functions that must be ensured to achieve and maintain post-fire safe shutdown conditions: (1) reactivity control capable of achieving and maintaining cold shutdown reactivity conditions, (2) reactor coolant makeup capable of maintaining the reactor coolant inventory, (3) reactor heat removal capable of achieving and maintaining decay heat removal, and (4) supporting system capable of providing all other services necessary to permit extended operation of equipment necessary to achieving and maintaining hot shutdown conditions.

A review was also conducted to ensure that all required electrical components in the selected systems were included in the licensee's safe shutdown analysis. The team identified the systems required for each of the primary safety functions necessary to shut down the reactor. These systems were then evaluated to identify the systems that interfaced with the fire areas inspected and were the most risk significant for reaching both hot and cold shutdown. The following systems were selected for review:

- Main steam system safety relief valves/automatic depressurization system
- Reactor core isolation cooling system
- High pressure core spray system
- Low pressure core spray system
- Residual heat removal system
- Standby service water system

b. Findings

No findings of significance were identified.

.2 Fire Protection of Safe Shutdown Capability; Fire Protection Systems, Features, and Equipment

a. Inspection Scope

For the selected fire areas, the team evaluated the adequacy of fire suppression and detection systems, fire area barriers, penetration seals, and fire doors to ensure that at least one train of safe shutdown equipment was free of fire damage. To do this, the team observed the material condition and configuration of the installed fire detection and suppression systems, fire barriers, and construction details and supporting fire tests for the installed fire barriers. In addition, the team reviewed the license documentation, such as exemptions and National Fire Protection Association code deviations to verify that the fire barrier installations met license commitments.

The team evaluated on a sample basis, the adequacy of separation provided for the power and control cabling of redundant trains of safe shutdown equipment. The evaluation focused on the cabling of selected components for the safety relief valve/automatic depressurization system, reactor core isolation cooling system, high pressure core spray system, high pressure core spray system, low pressure core spray system, residual heat removal system, and standby service water system. Additionally, two other valves, making up a high-low pressure interface boundary in the residual heat removal system were also investigated. This evaluation included a sampling of components whose inadvertent operation due to fire may adversely affect post-fire safe shutdown capability.

b. Findings

No findings of significance were identified.

.3 Post-Fire Safe Shutdown Circuit Analysis

a. Inspection Scope

The team, on a sample basis, verified that safety-related and nonsafety-related cables for equipment in the five selected fire areas had been analyzed to show that they would not prevent safe shutdown because of hot shorts, open circuits, or shorts to ground.



Additionally, the team verified, on a sample basis, that circuit breaker coordination and fuse protection were acceptable as a means of protecting the power sources of the designated alternate safe shutdown equipment.

b. Findings

No findings of significance were identified.

.4 Alternative Safe Shutdown Capability

a. Inspection Scope

The team performed a review to determine if the licensee had appropriate procedures in place and had identified the plant components and systems required to achieve and maintain safe shutdown conditions. The team reviewed the capability of the identified systems and components and the adequacy of the procedures that were identified as required to achieve alternative safe shutdown. The team then reviewed procedures and system operating capabilities to verify they were adequate to perform plant cooldown to hot and cold shutdown conditions from outside of the control room. The team's methodology was to focus on the overall adequacy of the identified systems, components, and use of procedures to perform actions necessary to increase core shutdown margin, control reactor pressure, provide reactor coolant makeup, and remove core decay heat. The team also reviewed the adequacy of process monitoring and needed support system functions.

The team reviewed, on a sample basis, the transfer of control from the control room to the alternative location to determine if it could be affected by fire-induced circuit faults (e.g., the provision of separate fuses and power supplies for alternative shutdown control circuits).

b. Findings

No findings of significance were identified.

.5 Operational Implementation of Alternative Shutdown Capability

a. Inspection Scope

The team performed a walkdown of the actions defined in Abnormal Operating Procedure AOP-0031, "Shutdown From Outside the Main Control Room," Revision 16A. This procedure documented the method for performing an alternative shutdown of the plant from the remote shutdown panel and by manipulating certain equipment locally in the plant. The team reviewed the ability of operators to perform the procedural actions within applicable plant shutdown time requirements, equipment labeling consistency with the procedure, and that the safe shutdown equipment was accessible.

The team reviewed the training program for licensed and nonlicensed personnel to verify it included training on the alternative safe shutdown capability. Additionally, the

team randomly selected several individuals from all of the available operations crews and reviewed each licensed operator's training record to ensure that they had received the most recent requalification training on alternative shutdown. The team also verified that personnel required to achieve and maintain the plant in hot shutdown following a fire using the alternative shutdown could be provided from normal onsite staff exclusive of the fire brigade.

The team also reviewed the associated data packages from the most recent performance (where applicable). These reviews were performed to verify that: (1) the licensee conducted periodic operational surveillance tests of the plant alternative shutdown transfer capability, instrumentation, and control functions; and (2) the surveillances performed were adequate to show that, if called upon, the plant alternative shutdown capability would be functional upon transfer to it. The team's review of communications and emergency lighting associated with these procedures are documented in Sections .6 and .7 of this report.

b. Findings

No findings of significance were identified.

.6 Communications

a. Inspection Scope

The team reviewed the adequacy of the communication system to support plant personnel in the performance of alternative safe shutdown functions and fire department duties. The licensee credited the plant radios and the normal telephone system for post-fire safe shutdown actions that require prompt control room operator response. In addition, the plant paging and public address system and the sound powered phone communication systems are installed throughout the plant.

The team determined that there were no preventative maintenance tasks and procedures to verify whether radios and telephones were available and operational for emergency use by operators and fire department members. However, the licensee stated that surveillance testing is not necessary since the radios and telephones have a high frequency of normal use.

b. Findings

No findings of significance were identified.

.7 Emergency Lighting

a. Inspection Scope

The team reviewed the emergency lighting system required for safe shutdown activities in the selected fire areas to verify it would provide for adequate access to perform manual actions required to achieve and maintain hot shutdown conditions. The team

also reviewed the adequacy of emergency lighting for performing actions required in Procedure AOP-0031, which included access and egress routes. The team reviewed repetitive tasks for testing and test data trending to verify that the individual battery operated units were capable of supplying sufficient illumination. The team reviewed vendor data, which determined the maximum temperatures at which the battery-powered lighting units would operate for 8 hours, in order to verify operability under maximum ambient temperatures. The team reviewed vendor documentation to verify that the battery power supplies were rated with at least an 8-hour capacity. The team also verified whether routine preventive maintenance was being performed to assure that the 8-hour battery powered lights were being maintained in an operable manner.

b. Findings

No findings of significance were identified.

.8 Cold Shutdown Repairs

a. Inspection Scope

The team reviewed licensee procedures to determine which repairs were required to achieve cold shutdown and whether repair material was available onsite.

b. Findings

No findings of significance were identified.

.9 Compensatory Measures

a. Inspection Scope

The team verified that adequate compensatory measures were in place by the licensee for out-of-service, degraded or inoperable fire protection and post-fire safe shutdown equipment, systems or features (e.g., detection and suppression systems, or passive fire barrier features).

b. Findings

No findings of significance were identified.

4. **OTHER ACTIVITIES (OA)**

4OA2 Identification and Resolution of Problems

a. Inspection Scope

The team reviewed a sample of condition reports to verify that the licensee was identifying fire protection-related issues at an appropriate threshold and entering those issues into the corrective action program.

b. Findings

No findings of significance were identified.

.4OA6 Meetings, including Exit

On May 18, 2001, at the conclusion of the team's onsite inspection, the team debriefed Mr. R. Edington and other licensee staff members on the preliminary inspection results.

On June 4, 2001, a tele-conference exit meeting was held with Mr. B. Mashburn and other licensee staff members, during which the team leader characterized the results of the inspection. The licensee's management acknowledged the findings presented.

The licensee was asked whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT

**PARTIAL LIST OF PERSONS CONTACTED**

Licensee

R. Barnes, Supervisor - Engineering  
B. Biggs, Coordinator – Safety & Regulatory Affairs  
E. Borazanci, Senior Engineer  
R. Brian, Director – Engineering, Nuclear  
M. Cooper, Licensing Specialist IV - Arkansas Nuclear One  
R. Edington, Vice President – Operations  
B. Ellis, Senior Engineer  
J. Fowler, Manager – Quality Assurance  
H. Grimes, Senior Engineer  
R. Kerar, Senior Engineer  
R. King, Director – Nuclear Safety Assurance  
J. Leavines, Manager – Licensing  
J. Maher, Senior Engineer  
B. Mashburn, Manager – Programs & Components  
J. McGhee, Manager – Operations  
D. Mims, General Manager – Plant Operations  
E. Roan, Senior Lead Technical Specialist  
T. Robinson, Technical Specialist IV  
R. Northrup, SRO / STA  
D. Williamson, Senior Licensing Specialist

NRC

M. Peck, Senior Resident Inspector  
M. Schneider, Resident Inspector

**LIST OF DOCUMENTS REVIEWED**

The following documents were selected and reviewed by the team to accomplish the objectives and scope of this inspections:

**DRAWINGS**

<u>Drawing Number</u>	<u>Title</u>	<u>Revision</u>
12210-ESK-7SWP35	Elementary Diagram 120VAC Control Ckt Remote Shutdown Transfer Relays	2
12210-ESK-2A	Instruction Drawing ESK Identification System	4

<u>Drawing Number</u>	<u>Title</u>	<u>Revision</u>
12210-ESK-2B	Instruction Drawing Wire Number Ident. System	5
12210-ESK-2D	Instruction Drawing Wire Number Ident. System	4
828E239AA Sh 1	Elementary Diagram Remote Shutdown System	20
828E239AA Sh 10	Elem. Diag. Remote Shutdown System	13
828E534AA Sh 8	Elementary Diagram Residual Heat Removal System	26
828E534AA Sh 9	Elementary Diagram Residual Heat Removal System	28
828E534AA Sh 17	Elementary Diagram Residual Heat Removal System	25
828E534AA Sh 22	Elementary Diagram Residual Heat Removal System	24
828E537AA Sh 9	Elem. Diagram HPCS Power Supply System	23
851E225AA Sh 11	Elem. Diag. Automatic Depressurization Sys.	14
851E225AA Sh 12	Elem. Diag. Automatic Depressurization Sys.	14
851E225AA Sh 13	Elem. Diag. Automatic Depressurization Sys.	14
851E225AA Sh 14	Elem. Diag. Automatic Depressurization Sys.	14
944E113	Assembly Remote Shutdown VB	12
12210-EE-7CK-4	External Connection Diag PGCC Termination Cabinet 1H13*P702 Bay D	4
12210-EE-36BV-5	Wiring Diagram Elec Pen. Termin Cab. 1RCP*TCR15A and 1RCP*TCA15	5
12210-EE-36CU-4	Wiring Diagram Elec Pen. Termin Cab. 1RCP*TCR15A and 1RCP*TCA15	4
CE-001A	Appendix R Safe-Shutdown Analysis - Emergency Lighting Control Building El. 98'-0"	2
CE-001B	Appendix R Safe-Shutdown Analysis - Emergency Lighting Control Building El. 116'-0"	2
CE-001C	Appendix R Safe-Shutdown Analysis - Emergency Lighting Control Building El. 98'-0"	2
CE-001F	Appendix R Safe-Shutdown Analysis - Emergency Lighting Diesel Generator Bldg El. 98'-0"	2
CE-001K	Appendix R Safe-Shutdown Analysis - Emergency Lighting Auxiliary Building El. 141'-0"	2

<u>Drawing Number</u>	<u>Title</u>	<u>Revision</u>
CE-001Q	Appendix R Safe-Shutdown Analysis - Emergency Lighting Standby Cooling Tower El. 118'-0"	2
CE-001U	Appendix R Safe-Shutdown Analysis - Emergency Lighting Turbine Building El. 67'-65"	2
CE-001V	Appendix R Safe-Shutdown Analysis - Emergency Lighting T-Tunnel El. 123'-6"	2
CE-001W	Appendix R Safe-Shutdown Analysis - Emergency Lighting Switchgear Building El. 98'-0"	2
CE-100J	Appendix R Safe-Shutdown Analysis - Emergency Lighting Auxiliary Building El. 114'-0"	2
EB-003AB	Fire Area Boundaries - Plant Plan View - Elevations 65'-0" to 90'-0"	3
EB-003AC	Fire Area Boundaries - Plant Plan View - Elevations 83'-0" to 106'-0"	3
EB-003AD	Fire Area Boundaries - Plant Plan View - Elevations 109'-0" to 148'-0"	3
EB-003AE	Fire Area Boundaries - Plant Plan View - Elevations 113'-0" through 186'-3"	3
EB-003M	Fire Protection Arrangement Sh-12	6
EB-003N	Fire protection Arrangement Sh-13	7
EB-003P	Fire Protection Arrangement Sh-14	6
EB-59A	Fire Protection - Tunnels SH-1	5
EE-001AA	480V One Line Diagram Standby Bus 1EJS*LDC 1A & 2A	10
EE-001AC	Start Up Electrical Distribution Chart	21
EE-001SA	480V One Line Diagram 1E22*S00 2 Control Building	11
EE-001TA	480V One Line Diagram 1EHS*MCC2A & 2L Auxiliary Building	15
EE-001TB	480V One Line Diagram EHS*MCC2C & 2D Auxiliary Building	9
EE-001TC	480V One Line Diagram 1EHS*MCC2E Auxiliary Building	9

<u>Drawing Number</u>	<u>Title</u>	<u>Revision</u>
EE-001TD	480V One Line Diagram 1EHS*MCC2G & 2H Auxiliary Building	10
EE-001TE	480V One Line Diagram 1EHS*MCC2J & 2K Auxiliary Building	15
EE-001TG	480V One Line Diagram 1EHS*MCC2F Auxiliary Building	13
EE-001YA	480V One Line Diagram 1EHS*MCC16A Standby Cooling Tower No. 1	9
EE-001YB	480V One Line Diagram 1EHS*MCC8B Standby Switchgear	7
EE-001ZD	125 VDC One Line Diagram 1ENB*MCC1 Auxiliary Building	5
EE-001ZG	125VDC One Line Diagram Standby Bus A 1ENB*SWG01A, 1ENB*PNL02A, 03A	15
EE-001ZH	125VDC One Line Diagram Standby Bus B 1ENB*SWG01B, 1ENB*PNL02B, 03B	16
EE-003A	Wiring Diagram 1RSS*PNL102 Control Building	11
EE-003KW	Wiring Diagram 1C61*PNLP001 Bay D Control Building	6
EE-003LY	Wiring Diagram 1C61*PNLP001 Bays A and B Control Building	13
EE-007AE	External Connection Diagram PGCC Termination Cabinet H13-P743 Bay E	13
EE-007AS	External Connection Diagram PGCC Termination Cabinet 1H13*P746 Bay A	10
EE-007BX	External Connection Diagram PGCC Termination Cabinet 1H13*P751 Bays A & B	10
EE-007CU	External Connection Diag PGCC Termination Cabinet 1H13*P712 Bay B	8
EE-007DE	External Connection Diagram PGCC Termination Cabinet 1H13*P710 Bay B	9
EE-007DQ	External Connection Diagram PGCC Termination Cabinet 1H13*P713 Bay B	7
EE-007DV	External Connection Diagram PGCC Termination Cabinet 1H13*P714 Bay B	6



<u>Drawing Number</u>	<u>Title</u>	<u>Revision</u>
EE-007EA	External Connection Diagram PGCC Termination Cabinet 1H13*P715 Bay B	9
EE-007EB	External Connection Diagram PGCC Termination Cabinet 1H13*P715 Bay D	8
EE-007G	External Connection Diagram PGCC Termination Cabinet 1H13*P731 Bay B	11
EE-008AR	4160V Wiring Diagram Standby Bus 1ENS*SWG1A	16
EE-008BE	4160V Wiring Diagram 1E22*S004	9
EE-008BF	4160V Wiring Diagram 1E22*S004	11
EE-009HT	480V Misc Wiring Diagram 1EHS*MCC2H	12
EE-009KG	480V Misc Wiring Diagram 1EHS*MCC2E & 1VPS- PNL11B	8
EE-009NG	480V Wiring Diagram EHS-MCC2E Auxiliary Building	7
EE-009NP	480V Wiring Diagram EHS-MCC2F Auxiliary Building	8
EE-009NV	Misc Wiring Diagram 1EHS*MCC2G Auxiliary Bldg	10
EE-009PE	480V Wiring Diagram 1EHS*MCC2K Auxiliary Building	7
EE-009PR	480V Wiring Diagram 1EHS*MCC8B STBY SWGR RM 1B	8
EE-009PX	480V Misc Wiring Diagram EHS*MCC8A	12
EE-009QC	480V Misc Wiring Diagram 1EHS-MCC8B	11
EE-009QW	480V Wiring Diagram 1EHS*MCC16A Standby Cooling Tower Area	15
EE-009RA	480V Wiring Diagram 1EHS*MCC16B Standby Cooling Tower Area	7
EE-009RT	480V Misc Wiring Diagram 1EHS*MCC16A Standby Cooling Tower Area	12
EE-009ZA	480V Wiring Diagram 1E22*S002 Stby SWGR Rm	10
EE-010B	125VDC Wiring Diagram Stby 1ENB*MCC1 Auxiliary Bldg	6
EE-010E	125VDC Misc Wiring Diagram Stby 1ENB*MCC1	7
EE-010W	125V DC Wiring Diagram Stby 1ENB*PNLS Cont Rm & Dsl Gen Bldg	12

<u>Drawing Number</u>	<u>Title</u>	<u>Revision</u>
EE-014CC	Wiring Diagram Stby Diesel Gen Control Pnl 1E22*PNLS001	10
EE-034YD	Appendix "R" Raceway Fire Protection Details	5
EE-036BH	Wiring Diagram Elec Pen. Termin Cab. 1RCP*TCR12A and 1RCP*TCA12	7
EE-10A	125VDC Wiring Diagram Stby 1ENB*MCC1 Auxiliary Bldg	5
EE-10D	125VDC Misc Wiring Diagram 1ENB*MCC1	9
EE-18AE	Wiring Diagram - Fire and Smoke Detection Sys. - Auxiliary Building	7
EE-18F	Wiring Diagram - Fire & Smoke Detection - Control Bldg El 98' - 0"	4
EE-18G	Wiring Diagram - Fire and Smoke Detection - Control Bldg - El 115'-0" & 116' - 0"	4
EE-18L	Wiring Diagram - Fire & Smoke Detection Sys. - Tunnels El. 67'-6"	5
EE-1VA	480V One Line Diagram 1EHS*MCC8A Standby Switchgear	8
EE-1WB	480V One Line Diagram 1EHS*MCC16B Standby Cooling Tower No. 1	10
EE-36BD	Wiring Diagram Elec Pen. Termin Cab. 1RCP*TCR12A and 1RCP*TCA12	5
EE-3KV	Wiring Diagram 1RSS*PNL101 Control Building	11
EE-3LX	Wiring Diagram 1C61*PNLP001 Bay C Control Building	7
EE-6DB-5	Wiring Diagram NSSS Miscellaneous Details	5
EE-7B	External Connection Diagram PGCC Termination Cabinet 1H13*P730 Bay B	10
EE-7CQ	External Connection Diagram PGCC Termination Cabinet 1H13*P703 Bay D	6
EE-7CV	External Connection Diag PGCC Termination Cabinet 1H13*P712 Bay D	9
EE-7DU	External Connection Diagram PGCC Termination Cabinet 1H13*P714 Bays A & B	7

<u>Drawing Number</u>	<u>Title</u>	<u>Revision</u>
EE-7DW	External Connection Diagram PGCC Termination Cabinet 1H13*P714 Bays D & E	10
EE-7DZ	External Connection Diagram PGCC Termination Cabinet 1H13*P715 Bays A & E	7
EE-8AQ	4160V Wiring Diagram Standby Bus 1ENS*SWG1A	15
EE-8AS	4160V Wiring Diagram Standby Bus 1ENS*SWG1A	9
EE-8AX	4160V Wiring Diagram Standby Bus 1ENS*SWG1B	12
EE-8AY	4160V Wiring Diagram Standby Bus 1ENS*SWG1B	12
EE-8AZ	4160V Wiring Diagram Standby Bus 1ENS*SWG1B	10
EE-9HJ	480V Misc Wiring Diagram 1EHS*MCC2F	9
EE-9HK	480V Misc Wiring Diagram 1EHS*MCC2F	9
EE-9HV-7	480V Misc Wiring Diagram 1EHS*MCC2H	7
EE-9NC-6	480V Wiring Diagram 1EHS*MCC2D Auxiliary Building	6
EE-9NE	480V Misc Wiring Diagram 1EHS*MCC2D Auxiliary Building	7
EE-9NH	480V Wiring Diagram 1EHS*MCC2E Auxiliary Building	6
EE-9NJ	480V Wiring Diagram 1EHS*MCC2E Auxiliary Building	8
EE-9NK-6	480V Wiring Diagram 1EHS*MCC2E & Details Auxiliary Building	6
EE-9NL	480V Misc Wiring Diagram 1EHS*MCC2E Auxiliary Building	8
EE-9NR	480V Wiring Diagram 1EHS*MCC2F Auxiliary Building	9
EE-9NT	480V Wiring Diagram 1EHS*MCC2G Auxiliary Building	7
EE-9NW	480V Wiring Diagram 1EHS*MCC2H Auxiliary Bldg	5
EE-9PB	480V Wiring Diagram 1EHS*MCC2J Auxiliary Building	7
EE-9PC	480V Misc Wiring Diagram 1EHS*MCC2J Auxiliary Building	7
EE-9PM	480V Wiring Diagram 1EHS*MCC8A STBY SWGR RM 1A	13

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**PROCEDURES**

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ADM-0023	Conduct of Maintenance	12
AOP-0031	Shutdown from Outside the Main Control Room	16A
AOP-0052	Fire Outside the Main Control Room in Areas Containing Safety Related Equipment	10
LI-102	Corrective Action Process	00
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**PREVENTIVE MAINTENANCE TASKS**

<u>Number</u>	<u>Date</u>
10561 (MAI 320431)	January 21, 1999
MAI 235263	May 11, 1999
MAI 323279	May 27, 1999
MAI 316936	June 3, 1998
MAI 326789	August 15, 1999
MAI 329806	October 29, 1999
10561 (MAI 340988)	March 20, 2001
11042 (MAI 335295)	September 6, 2000
6216 (MA 337924)	September 29, 2000

**Repetitive Task Documents**

<u>Number</u>	<u>Title</u>	<u>Revision</u>
11042	130 Week Battery Replacement Schedule	2
11043	156 Week Battery Replacement Schedule	2
11044	208 Week Battery Replacement Schedule	2
11045	286 Week Battery Replacement Schedule	2
11046	312 Week Battery Replacement Schedule	2

**CONDITION REPORTS**

CR-RBS-1996-0996	CR-RBS-1999-1786	CR-RBS-2000-0059
CR-RBS-2000-1109	CR-RBS-2000-1490	CR-RBS-2000-1600
CR-RBS-2000-2054	CR-RBS-2000-2126	CR-RBS-2001-0049
CR-RBS-2001-0093	CR-RBS-2001-0099	CR-RBS-2001-0347
CR-RBS-2001-0355	CR-RBS-2001-0410	CR-RBS-2001-0582
CR-RBS-2001-0612	CR-RBS-2001-0609	CR-RBS-2001-0613
CR-RBS-2001-0615		

**Operating Experience Documents**

OE\IN\9536.SAI, "IN 95-36: Potential Problems with Post-Fire Emergency Lighting"  
OE\IN\9536.SA2, "IN 95-36: Potential Problems with Post-Fire Emergency Lighting"

**Smoke Detector Surveillances**

Surveillance Test Number STP-000-3603, completed April 10, 2000  
Surveillance Test Number STP-250-4529, completed October 12, 2000  
Surveillance Test Number 250-4530, completed September 21, 2000  
Surveillance Test Number 250-4534, completed August 17, 2000  
Surveillance Test Number 250-4535, completed September 6, 2000  
Surveillance Test Number 250-4536, completed July 27, 2000  
STP-250-4538R00EC-A, completed August 25, 1998  
Surveillance Test Number 250-4539, completed November 28, 2000

**Calculations**

<u>Number</u>	<u>Title</u>	<u>Revision</u>
Calc. E200, Attach. 3	Time-Current Characteristic Curves	1
Calc. No. G13.18.2.6*34	To Determine No. of SRV Actuations from LSV Air Receiver Tanks 1LSV*TK6A, *TK6B	0
Calc. No. G13.18.3.6*5	Appendix 2.A. 125 VDC Distribution Panel 1ENB*PNL02B	1
Calc. No. G13.18.3.6*5	Appendix 11 Resolution of Problems for Selective Coordination of Protective Devices in Appendix R Circuits	1
Calc. No. G13.18.14.0*529	Reactor Level response to a Fire in the Control Room	1



**Engineering Reports**

97-0204, "Reduce total of Appendix R emergency lights to 100," Revision 0

98-0296, "Revise replacement frequency for Appendix R emergency light batteries," Revision 0

**Vendor Documents**

3242.423-292-004B, Eagle Picher Application Manual

Pyrotronics Ionization Fire/Smoke Detector Model DI-3 and DI-A3 Engineer and Architect Specifications

Pyrotronics Photoelectric Smoke Detectors Models DP-3 and DP-3T Engineer and Architect Specifications

RBS Criterion No. 240.201A, Appendix C, "10CFR50 Appendix R Post-Fire Safe Shutdown Equipment List and Logic Diagrams," Revision 3

**MISCELLANEOUS DOCUMENTS**

Audit No. 99-03-I-PFPP, "RBS QA Audit of RBS Plant Fire Protection Program," May 4, 1999

Audit No. 00-02-I-PFPP, "RBS Quality Assurance Audit of the Plant Fire Protection Program," May 4, 2000

Audit No. QA-9-2001-RBS-1, "RBS Quality Assurance Audit of the Plant Fire Protection Program," February 19, 2001

National Fire Protection Association (NFPA) Code 72E-1978, "Automatic Fire Detectors"

River Bend Station Post-Fire safe Shutdown Analysis, Volumes 1-5, Revision 3

Criterion No. 240.201A, Appendix C, "10 CFR 50, Appendix R Post-Fire Safe Shutdown Equipment List and Logic Diagrams"

Fire Protection Impairment Status, May 10 and 15, 2001

Operations Policy #006, Revision 11

Penetration Seal Typical Details, Typical Detail EL-1, March 15, 1996

Penetration Seal Typical Details, Typical Detail OP-1, March 15, 1996