

ENCLOSURE 2

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

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License No.: NPF-47
Report No.: 50-458/97-007
Licensee: Entergy Operations, Inc.
Facility: River Bend Station
Location: 5485 U.S. Highway 61
St. Francisville, Louisiana 70775
Dates: March 16 through April 26, 1997
Inspectors: W. F. Smith, Senior Resident Inspector
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Approved By: P. H. Harrell, Chief, Project Branch D
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Attachment: Supplemental Information

EXECUTIVE SUMMARY

River Bend Station
NRC Inspection Report 50-458/97-007

This inspection included aspects of licensee operations, maintenance, engineering, and plant support. The report covers a 6-week period of resident inspection.

Operations

- The performance of plant operators was professional and reflected a focus on safety (Section O1.1).
- A walkdown inspection of six emergency operating procedure (EOP) supporting enclosures verified effective implementation of each of the enclosures (Section O2.1).
- A violation was identified for failure to adequately maintain implementing procedures for independent verification (Section O3.1).

Maintenance

- Maintenance activities observed were well conducted (Section M1.1).
- Resolution of the reactor Flow Control Valve (FCV) B lockup problem proceeded slowly and conservatively, with appropriate attention to reactivity management (Section M1.2).
- Efforts to improve the inservice testing program were apparent by the good performance of the tests observed (Section M1.3).
- A maintenance supervisor exhibited a good questioning attitude in identifying a missed surveillance. A noncited violation (NCV) was identified for the failure to meet a Technical Specification (TS) Surveillance Requirement (SR) interval (Section M1.4).

Engineering

- Engineering provided good support for the troubleshooting and operability analyses associated with the FCV B lockup problem (Section M1.2).
- An engineer demonstrated good attention to detail in identifying the failure to perform pump testing in accordance with the Technical Requirements Manual (TRM). An NCV was identified for failure to comply with 10 CFR 50.59 (Section E2.1).

Plant Support

- The unauthorized removal of radiation protection (RP) sign inserts by an individual was considered an isolated incident. An NCV was identified for failure to properly maintain radiological postings (Section R1.1).

Report Details

Summary of Plant Status

The plant operated at essentially 100 percent power for the duration of this inspection period, except on March 22, 1997, when power was lowered to approximately 70 percent to implement a routine reactor control rod configuration change and accomplish miscellaneous testing and maintenance. By March 23, power was restored to 100 percent.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

The inspectors conducted frequent reviews of ongoing plant operations including control room observations, attendance at plan-of-the-day meetings, and plant tours. In general, the performance of plant operators was professional and reflected a focus on safety. Three-way communications were frequently utilized and operator response to alarms were observed to be prompt and appropriate to the circumstances. Housekeeping practices continued to be excellent.

O2 Operational Status of Facilities and Equipment

O2.1 Walkdown of EOP Supporting Enclosures (71707)

On April 2, 1997, the inspectors reviewed the licensee's implementation of six of the 32 EOP supporting enclosures. These supporting enclosures were contained in Procedure EOP 5, "Emergency Operating Procedures-Enclosures," Revision 9. The inspectors walked down Enclosures 10, 11, 12, 13, 16, and 26, which addressed alternative methods of control rod insertion during an anticipated transient without scram event. Implementing these enclosures involved deenergizing scram solenoids, venting the scram air header, defeating reactor protection system and alternate rod insertion logic trips, opening individual scram test switches, and defeating containment instrument air isolation interlocks. The inspectors verified that all keys, materials, and tools were staged and that on-shift licensed operators were sufficiently familiar with the actions stated in these enclosures. As each enclosure was walked down, the inspectors found all labels to be correct. All switches and components to be operated were prominently marked for ease of location under emergency conditions. The inspectors concluded that provisions were in place for the effective implementation of Enclosures 10, 11, 12, 13, 16, and 26 of Procedure EOP 5.

03 Operations Procedures and Documentation

03.1 Independent Verification

a. Inspection Scope (71707)

Because of recent issues with the licensee failing to provide proper configuration controls for safety systems, the inspectors reviewed the licensee's programs for providing independent verification. The inspectors reviewed Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2, 1978; Industry Standard ANSI 18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants" NUREG-0737, and applicable licensee procedures during this review.

b. Observations and Findings

Chapter 1.8 of the River Bend Station Updated Final Safety Analysis Report (UFSAR) discussed the licensee's commitments to implement the NRC Regulatory guides. The UFSAR stated that compliance with Regulatory Guide 1.33, and by reference, Industry Standard ANSI 18.7-1976 was implemented, with minor comments. Section 5.2.6 of ANSI 18.7-1976 states that independent verifications shall be required for tagging of equipment for maintaining personnel and reactor safety and prevent unauthorized operation of equipment. In addition, Industry Standard ANSI 18.7-1976 states that temporary modifications such as temporary bypass lines, electrical jumpers, lifted electrical leads, and temporary trip point settings shall be controlled by approved procedures that require independent verification. NUREG-0737 also requires the use of independent verification for these activities. However, three licensee procedures did not require independent verification for these activities, as follows:

- Operation Section Procedure OSP-0014, "Administrative Control of Equipment and/or Devices," Revision 7, contained requirements for tagging equipment that was not positioned for personnel hazards or equipment damage. For example, when an automatic containment isolation valve was shut and deactivated, to preserve containment operability, the licensee secured the valve in position with an operator hold tag to prevent unauthorized operation. However, the inspectors identified that Procedure OSP-0014 did not require independent verification for tagging safety-related items as stated in Industry Standard ANSI-18.7. NRC Information Notice 84-85 discusses instances in which operator errors could have been precluded by independent verification. An example given in the information notice was that a wrong valve was shut for containment isolation purposes. Failure to require independent verification in Procedure OSP-0014 is the first of three examples of a violation of Technical Specification (TS) 5.4.1.a (50-458/97007-01).

- Administrative Procedure ADM-0031, "Temporary Alterations," Revision 7, provided instructions for installation and removal of temporary alterations. This procedure did not require independent verification for installation or removal of safety-related temporary modifications or the associated temporary modification tags. Failure to require independent verification in Procedure ADM-0031 is the second of three examples of a violation of TS 5.4.1.a (50-458/97007-01).
- General Maintenance Procedure GMP-0042, "Lifted Leads and Jumpers," Revision 10, provided instructions for maintenance personnel to lift leads and install jumpers during performance of maintenance tasks. However, Procedure GMP-0042 was also used to install lifted leads and jumpers as temporary modifications. Procedure GMP-0042 did not require independent verification for installation of lifted leads and jumpers, but did require independent verification for restoration. Failure to require independent verification in Procedure GMP-0042 for the installation of lifted leads and jumpers is the third of three examples of a violation of TS 5.4.1.a (50-458/97007-01).

In addition to the above, Procedure ADM-0076, "Verification Program," Revision 2, provided general guidance on when independent verification was required. Section 6.6.1 of Procedure ADM-0076 stated that the independent verification shall be performed after all component manipulations of systems where the risk of undesirable results, such as equipment damage, personnel injury, spill of radioactive water, or plant trip, was significant. This procedure gave no further examples of when independent verification was required. In practice, operating crews had a varied threshold for when independent verification was required because of different interpretations of the requirements.

The inspectors discussed these observations with the Operations and Instrumentation and Controls Superintendents. The licensee acknowledged that improvements were necessary in the independent verification programs because of previous performance issues associated with configuration controls. The licensee performed an audit of independent verification and identified other minor issues, which were entered into the licensee's corrective action program. In addition, the licensee revised Procedures GMP-0042, ADM-0076, ADM-0031, and OSP-0014 to require independent verification when performing safety-related activities associated with these procedures.

c. Conclusions

A violation was identified for failure to adequately maintain three procedures in that independent verification was not required, when appropriate. The licensee did not require independent verification for installation of lifted leads and jumpers, installation and removal of temporary modifications, and tagging equipment not involved with performance of work.

08 Miscellaneous Operations Issues (92901)

- 08.1 (Closed) Violation 50-458/96002-02: Failure to independently verify the restoration of safety-related systems after performing component manipulations. The licensee's administrative procedures required the operators to perform control board lineups after completion of any operation or component manipulations on safety-related systems and to independently verify the lineups. These actions were required by the procedures to be documented in the control room log. The inspectors observed that in some cases, the independent verification was not documented in the log.

In response to the violation, the licensee reviewed the control room logs for other discrepancies and corrected the specifics. Documented briefings were held with all Operations Department crews to reinforce the licensee's expectations and procedural requirements related to log keeping. The inspectors reviewed the documentation and found no problems. Subsequently over the past year, during daily reviews of the control room logs, the inspectors did not identify any additional failures to properly document safety-related system restorations. A second check of the control room logs was being performed by a senior reactor operator at the end of each shift.

The licensee also implemented a task force comprised of various Operations personnel to identify and resolve any conflicts between management expectations, procedural requirements, or commitments related to log keeping and other administrative requirements. The task force determined that there were redundancies and conflicts between procedures and policies relative to the conduct of operations that could be simplified in a single procedure. The inspectors noted that as a result of the task force's recommendations, the licensee developed a single procedure which integrated the requirements of several other procedures and policies. The procedure was in the latter stages of review and approval as of the end of this inspection period. The licensee's completed actions were appropriate to resolve the issues identified in this violation.

- 08.2 (Closed) Violation 50-458/96002-04: Failure to comply with License Condition 2.C(17), which permits primary containment airlock doors to be open during core alterations, except when moving recently irradiated fuel. It also requires, in part, that hoses and cables running through the airlock be tagged with specific instructions to expedite removal. During refueling operations on January 16, 1997, a fire hose and nondestructive test cables were run through the 113-foot elevation airlock without the required tags.

The principal causes were lack of adequate operator training on the new license condition and poor implementing procedures. The licensee suspended core alterations at the time of discovery until the condition was corrected. Compensatory actions were then taken until the procedure could be clarified and appropriate training conducted.

The inspectors reviewed Procedure OSP-0034, "Control of Obstructions for Primary Containment/Fuel Building Operability," Revision 2, dated March 27, 1996, and found that the procedure implemented the appropriate controls to prevent a recurrence. The requirements of License Condition 2.C(17) were clearly stated in the procedure. The inspectors also reviewed the documentation certifying the completion of training for all operators on the procedure revision and on the root causes of this event. No discrepancies were noted. The inspectors considered the corrective actions taken by the licensee to have been adequate to ensure compliance with the above license condition when it is implemented during future core alterations.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments on Maintenance Activities

a. Inspection Scope (62707)

The inspectors observed portions of work activities covered by the following maintenance action items (MAI):

- MAI P591650: Inspect, clean, test, and lubricate 4160-volt motor Breaker ACB 23 for Residual Heat Removal Pump B
- MAI 310862: Open, inspect, and repair seating surfaces, if necessary, on Division II Emergency Diesel Generator (EDG) fuel oil transfer check Valve EGF-V33

b. Observations and Findings

The inspectors found the work performed under the above listed MAIs to be professional and thorough. Maintenance technicians demonstrated good foreign material exclusion practices and good attention to detail by following the work instructions and peer checking. The technicians were experienced and knowledgeable of their assigned tasks. The inspectors frequently observed the presence of supervision and system engineers monitoring job progress and resolving questions. Appropriate clearances were utilized for personnel and equipment safety, and the operators entered the correct TS limiting conditions for operation.

c. Conclusions

Maintenance activities observed during this inspection period were well conducted. Instructions were followed and the technicians demonstrated a good questioning attitude, which resulted in additional improvements.

M1.2 Lockup of Reactor Recirculating System FCV B

a. Inspection Scope (62707, 37551)

On March 25, 1997, FCV B locked up because of a control system motion inhibit signal that occurred for a reason that was unknown at the time. The inspectors observed the licensee's response to this problem and the maintenance activity that followed.

b. Observations and Findings

While operating at 100 percent power, control room annunciators indicated that FCV B was in motion inhibit (locked up) and that the hydraulic equipment was inoperative. The reactor building operator was dispatched to investigate and found no indications of a problem. Hydraulic fluid reservoir level and temperature was normal.

The control room operators noted that the flow controller for FCV B shifted to loop manual about 10 minutes after the event instead of immediately. The operators notified the required support personnel, declared the FCV inoperable, and entered TS Limiting Condition for Operation (LCO) 3.4.2, which requires the operators to lock up the FCV to prevent unexpected or uncontrolled movement. FCV A was then placed in loop manual. Condition Report (CR) 97-0401 was initiated, as required by the licensee's corrective action program.

Engineering and Maintenance personnel collected all possible information related to the operation and plant computer monitoring of the FCVs. The symptoms were analyzed and the engineers concluded there was nothing to be found in the control circuits and, therefore, it would be necessary to place the FCVs back into loop automatic to check out the system as it was when the problem occurred. During this process, the operators carefully monitored the flow balance between the reactor coolant loops, which by TS, shall not exceed 5 percent. Throughout the day, FCV B drift was negligible, so the loop flow imbalance did not exceed 2.3 percent.

Because the restoration of the FCVs to loop automatic involved a reactivity control system, the operators reduced power to 98 percent by inserting control rods under the recommendations of a reactor engineer. This provided sufficient margin in the event the FCV opened when the lock-up was reset. Reactor Engineering provided a reactivity impact checklist in accordance with River Bend Nuclear Procedure RBNP-083, "Reactivity Management," Revision 0. The checklist provided the operators with operating limits, precautions, power reduction instructions, and power recovery instructions. The inspectors attended the briefing held for all personnel involved and noted that the appropriate subjects were covered and good questions were asked by the participants.

After power was reduced to 98 percent, the operators reset the motion inhibit on FCV B. No problems were exhibited. Both FCVs were placed back in loop automatic, but after about 40 minutes FCV B began to oscillate with a servo error of up to 1.5 percent. If servo error increased to 2.5 percent, the hydraulic power unit would shut down and motion inhibit would be actuated. The operators shifted back to loop manual and the oscillations stopped. Engineering and Maintenance personnel obtained more plant computer data, analyzed the data, and concluded that the problem was in the automatic portion of the FCV controls. The automatic runback and lock-up features were operational in the loop manual mode. Since the FCVs were operating satisfactorily in this mode, the licensee decided not to attempt to repair the automatic circuits while the plant was at power in order to avoid the possibility of a reactivity incident.

On April 10, when the operators attempted to adjust the position of FCV B, the valve could not be moved, the hydraulic pumps tripped, and the FCV went into motion inhibit. In accordance with MAI 311131, troubleshooting revealed that the FCV would not move in either the open or closed direction with full hydraulic differential pressure across the piping to the valve actuator. The licensee began to develop plans for a plant shutdown to perform repairs to the FCV, which was located in the drywell. In the interim, the licensee decided to continue operating at full power. An operability evaluation performed by engineering stated that continued operation with FCV B locked was allowed and would not result in the failure of any safety equipment to perform any safety functions. The licensee documented an engineering evaluation of operability similar to a 10 CFR 50.59 evaluation and found that there were no unreviewed environmental or safety questions associated with continued operation with FCV B locked in the 85 percent open position.

On April 15, the inspectors observed the licensee conducting more troubleshooting in accordance with MAI 311165 to ensure the hydraulic lines were not obstructed. Good briefings were held with emphasis on careful reactivity management, contingencies in the event of unexpected FCV movement were established with the operators, and all activities with the potential of causing a change in reactivity were performed by a licensed operator or under the cognizance of licensed operators in accordance with NRC regulations. The hydraulic lines were confirmed clear, further supporting the possibility of an actuator or valve problem.

Subsequently, the licensee attempted to move FCV B by preventing the hydraulic power unit from tripping off when there was an excessive error signal. From chart recordings, the engineers determined that the FCV actuator was moving as evidenced by indication of velocity of the actuator and the valve stem was not moving as evidenced by feedback from the valve position indicator. A spare FCV was set up in the shop to help determine the possible causes of a sticking valve. Maintenance and engineering personnel determined that when the valve was near the 85 percent open position, the actuator arm clearance from the valve body was close enough to bind if the actuator arm came loose.

The inspectors attended licensee staff meetings on April 11, 17, 23, and 24. At these meetings, the licensee demonstrated conservative thinking and a desire to establish a strong basis for the decisions made. The meetings were probing and insightful and the attendees were collectively addressing all of the important issues in support of a decision as to whether to shut down and repair the FCV or continue operation with the FCV frozen in position.

The General Manager, Plant Operations directed a Significant Event Review Team (SERT) to form and deliver a recommendation regarding the continued safe operation of the plant with FCV B locked in the 85 percent position. As of the end of this inspection period, the SERT had not delivered a recommendation; however, the inspectors were aware that the SERT was in the process of addressing all of the information gathered to date, a continuing operability evaluation, and contingency planning, which included operator training. The licensee was taking the time to ensure that an informed decision was made with regard to whether or not to continue operating until the September 12 refueling outage and what must be considered while operating in this condition.

c. Conclusions

The inspectors concluded that the Engineering, Maintenance and Operations personnel involved with the resolution of the FCV B lock-up problem proceeded slowly and conservatively. Concern over reactivity management was appropriate to the circumstances.

M1.3 Surveillance Observations

a. Inspection Scope (61726)

The inspectors observed all or portions of the following surveillance tests during this inspection period:

STP-309-6302: Division II EDG fuel oil transfer quarterly pump and valve operability inservice test (April 9, 1997).

STP-209-6310: Reactor Core Isolation Cooling quarterly pump and valve operability inservice test (April 15).

b. Observations and Findings

The inspectors found that the surveillance tests listed above were conducted properly such that meaningful results were obtained. Self-checking and peer checking was evident when it was appropriate to do so. During independent verification, the verifiers demonstrated a conscious effort to maintain independence from the performers. TS limiting conditions for operation were entered when required. Measuring and test equipment was verified to have been in calibration.

The inspectors reviewed the completed test documentation and noted that it was legible and all acceptance criteria were met.

c. Conclusions

The inservice tests observed during this inspection period were performed properly and in accordance with the applicable procedures. Efforts on the part of the licensee to improve the Inservice Testing Program were manifested by the good performance of the above tests.

M1.4 Missed TS Surveillance

a. Inspection Scope (61726)

The inspectors reviewed the licensee's response to CR 97-0378, where credit was erroneously taken from a completed channel calibration for a channel functional test.

b. Observations and Findings

On March 18, 1997, while reviewing reactor protection surveillance tests, an instrument and controls maintenance supervisor questioned whether or not the scope of all channel calibrations was adequate to provide credit for the accomplishment of the channel functional tests. The channel calibration typically included the channel functional test, as defined in TS 1.1. However, the implementing surveillance test procedures were known to contain other test requirements. The supervisor established a team to review other channel functional tests for the previous calendar quarter to determine if credit was inappropriately given for any channel functional tests.

On March 19, the team identified one instance where the reactor core isolation cooling (RCIC) steam line high flow Channel B functional test was credited by accomplishment of the Channel B calibration. However, in this case, the channel functional test procedure contained requirements to perform a channel functional test of time delay Relay E51A-K84, RCIC steam line flow time delay instrumentation. The timeline was:

- On November 5, 1996, the Channel B functional test was satisfactorily completed in accordance with Procedure STP-207-4537, "RCIC Isolation - RCIC Steam Line Flow High Channel Functional Test (E31-N683B, E31-N690B, E51A-K84)."
- On January 22, 1997, the Channel B calibration was satisfactorily completed in accordance with Procedure STP-207-4237, "RCIC Isolation - RCIC Steam Line Flow High Channel Calibration Test and Logic System Functional Test (E31-N683B, E31-N690B, E31-N083B)." The team noted that this test did

not include Relay E51A-K84, although credit was erroneously taken for the performance of channel functional test Procedure STP-207-4537.

- On February 28, 1997, the quarterly channel functional test became overdue, because Relay E51A-K84 had not been tested since November 5, 1996.
- On March 19, 1997, Channel B functional Procedure STP-207-4537 was satisfactorily completed.

As a result of the above timeline, the quarterly functional test of Relay E51A-K84 was missed by 19 days. After the problem was identified, the operators entered TS SR 3.0.3, which allows 24 hours for the surveillance requirement to be met before declaring the affected systems inoperable. The test was completed within 3 hours and TS SR 3.0.3 was exited.

The licensee determined that the root cause of this violation was inattention to detail in taking credit for other surveillances. However, this missed surveillance was identified as part of corrective action in response to prior failures to perform TS surveillances (see NRC Inspection Report 50-458/96-026). The corrective action was to revise Administrative Procedure ADM-0015, "Station Surveillance Test Program," to include specific controls over taking credit for tests not performed. The procedure was revised (Revision 18) on February 17, 1997, whereas the credit was taken in the above instance on January 22, 1997; therefore, corrective action for the previous violation could not have precluded this additional violation.

The inspectors were aware of Revision 18 to Procedure ADM-0015 and noted that effective controls were placed in effect for taking credit for tests not performed after February 17, 1997. The licensee explained that the increased scrutiny brought about by the procedure revision resulted in the questions that led to the discovery of the above problem.

Additional corrective actions included a review of all calibration and functional test procedures to identify where the calibrations did not satisfy the functional test. A comment was added to the TS Matrix database for easy reference.

Failure to meet the RCIC surveillance requirement within the specified frequency is a violation of TS SR 3.0.2. However, this licensee-identified and corrected violation is being treated as an NCV consistent with Section VII.B.1 of the NRC Enforcement Policy. Specifically, the violation was identified by the licensee, was not willful, actions taken as a result of a previous violation should not have corrected this problem, and appropriate corrective actions were completed by the licensee (50-458/97007-02).

c. Conclusions

The instrument and controls maintenance supervisor exhibited a good questioning attitude in identifying a missed surveillance caused by inappropriate crediting of an instrument calibration procedure for a functional test procedure not done. The combination of corrective actions already in progress from previous problems with additional actions taken should be effective in preventing a recurrence. An NCV was identified for failure to meet TS SR 3.0.2.

M8 Miscellaneous Maintenance Issues (92902)

- MS.1 (Closed) Violation 50-4^r 3/96003-01: EDG horn relay removed without work instructions. This violation concerned an electrician that removed a diesel generator horn relay to keep an alarm from sounding during maintenance in the panel. These actions were taken without revising the work instructions, in violation of licensee procedures. For corrective actions, the licensee: (1) replaced the relay in question and retested the alarm function for the local diesel generator panel, (2) counseled the individual on attention to detail and the procedural requirements for changes to work instructions, and (3) revised Procedure ADM-0028, "Corrective Maintenance," to clarify that a change in scope of the maintenance required an MAI revision. The inspectors reviewed the licensee's documentation of completed corrective actions and the revised procedure and determined that the licensee's actions were satisfactory.
- M8.2 (Closed) Violation 50-458/96004-01: Missing conduit plugs on Rosemount transmitters. The inspectors identified that two safety-related Rosemount transmitters had plastic shipping plugs installed in place of the environmentally qualified stainless steel plugs, which were required to be installed. For corrective actions, the licensee: (1) repaired the two deficient Rosemount transmitters, (2) performed walkdowns of all safety-related transmitters and ensured that all have stainless steel plugs installed in their spare conduit ports, (3) performed walkdowns of all safety-related Rosemount transmitters to ensure that all requirements for installation and maintaining operability were met in accordance with vendor recommendations, (4) briefed instrumentation and control technicians on these findings, and (5) committed to perform walkdowns of all nonsafety-related Rosemount transmitters. The inspectors verified, based on the licensee-provided documentation, that items 1 through 4 above were completed. In addition, the inspectors toured the reactor and auxiliary buildings and found no additional discrepancies with respect to transmitters. Based on this information, the inspectors concluded that the licensee had made satisfactory progress in completing the corrective actions.

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 Inappropriate TRM Interpretation

a. Inspection Scope (37551)

The inspectors evaluated the licensee's response to CR 97-0126, which documented that the licensee had inappropriately interpreted the TRM requirement for the surveillance of the suppression pool pump back system.

b. Observations and Findings

On February 12, 1996, as part of the licensee's inservice testing improvement effort, the engineers identified that Procedure STP-609-6301, "DFR Pump Quarterly Pump and Valve Operability," Revision 1, did not meet TRM SR 3.5.4.1. TRM SR 3.5.4.1 requires that, every 92 days, verification that the crescent area sump pumps develop 50 gpm be performed. However, the licensee did not verify that the pumps developed at least 50 gpm. The licensee interpreted the TRM requirement to mean that verification be completed to ensure that the pump was capable of providing 50 gpm if it was aligned to its safety function and not through a test loop.

Procedure STP-609-6301 required the user to start the pump, record differential pressure, and calculate pump flow rate based on a change in tank level. The licensee then plotted the differential pressure and flow rate and compared these data to the vendor supplied pump curves. The test was considered satisfactory if the point landed on (or near) the pump curve. The licensee was only able to develop approximately 30 gpm using the designated test loop, but the results did correspond with the proper pressure/flow rate relationship.

The inspectors noted that Procedure STP-609-6301 was revised to allow comparison to the pump curves several years earlier, when the surveillance of the crescent area pumps was part of the Technical Specifications. This procedure was revised because the 50 gpm flow requirements could only be met when the crescent area pumps were in their safety alignment to pump water from the crescent area to the suppression pool. The crescent area sumps were dirty and the test was causing impurities to affect the water quality of the suppression pool. Therefore, the licensee changed the procedure to use a test loop in which 50 gpm could not be achieved. The inspectors found that from a technical point of view, the licensee was performing testing that could provide reasonable assurance of operability. However, the TS, and later the TRM, were required to be revised to support this change.

For corrective actions the licensee: (1) revised TRM SR 3.5.4.1 to clearly allow for using the pump curves to verify system operability using the provisions of

10 CFR 50.59, and (2) performed reviews of other TRM requirements to ensure that no other improper interpretations existed.

The failure to follow TRM SR 3.5.4.1 is a violation of 10 CFR 50.59 for failure to perform a safety evaluation for a change to the facility as described in the UFSAR. This licensee-identified and corrected violation is being treated as an NCV consistent with Section VII.B.1 of the NRC Enforcement Policy. Specifically, the violation was identified by the licensee, was not willful, actions taken as a result of a previous violation should not have corrected this problem, and appropriate corrective actions were completed by the licensee (50-458/97007-03).

c. Conclusions

A noncited violation was identified for failure to perform testing of the crescent area sump pumps in accordance with the TRM. The engineer performing the review of the inservice testing program demonstrated good attention to detail in identifying this issue.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 Unauthorized Removal of RP Posting Sign Inserts

a. Inspection Scope (71750)

The inspectors reviewed the licensee's response to CR 97-0449, which identified the unauthorized removal of required information from a RP sign that was posted for a locked high radiation area.

b. Observations and Findings

On April 2, 1997, during a routine walkdown of the auxiliary building, an RP technician noticed that the "Locked High Radiation Area" insert was missing from the RP sign posted on the control rod drive mechanism overhaul facility door. The door was found locked and secured. The insert could not be found in the immediate area. The RP technician obtained and installed a replacement insert.

The licensee performed a complete posting audit and found 10 more assorted RP posting sign inserts missing. Again, the inserts could not be found and replacement inserts were promptly installed.

On April 3, the licensee commenced an investigation with support and participation of Entergy Corporate Security personnel. Through the application of investigative techniques such as security access history and radiation exposure patterns, the licensee's investigators developed a list of employees that were in the areas during

the period the inserts were removed. In addition, the licensee published an article in "Inside Entergy," the licensee's newsletter, alerting employees of the problem and soliciting their help, the General Manager, Plant Operations directed his staff to inform their respective staffs, and RP commenced biweekly posting audits on a daily basis.

On April 4, Corporate Security commenced interviews with the individuals identified on the list of personnel that were in the area at the time in question. During the interviews, a firewatch employee supplied by The Wackenhut Corporation confessed to removing the posting sign inserts for the purpose of adding them to his sign collection at his residence. The licensee's representatives accompanied the individual to his residence where the inserts were recovered among many other assorted signs. An RP technician surveyed the area and found no radioactive contamination.

The individual had only been employed by The Wackenhut Corporation at River Bend Station for about 1 month. The licensee informed the inspectors that this individual did not appear to fully understand the implications and potential consequences of actions such as his at a nuclear power plant. The individual was terminated and denied access to the protected area.

The inspectors questioned the quality of the indoctrination provided for fire watch personnel in view of the limited training they receive compared with the greater training and experience given to other employees on site. The licensee had already been reviewing this aspect of a root cause and took action to improve the indoctrination of incoming new firewatch personnel. The Security Superintendent directed The Wackenhut Corporation to discuss a list of issues with potential employees to ensure full understanding of the seriousness of employment at a nuclear power plant. The inspectors reviewed the directive, dated April 23, 1997, and found it to be sufficiently comprehensive.

Failure to maintain RP postings as required by RP Procedure RPP-0005, "Posting of Radiological Controlled Areas," Revision 10, is a violation of TS 5.4.1. However, this licensee-identified and corrected violation is being treated as an NCV consistent with Section VII.B.1 of the NRC Enforcement Policy. Specifically, the violation was identified by the licensee, was not willful in the context of a deliberate act with intent to violate NRC regulations and it involved a low level employee without management involvement, actions taken as a result of a previous violation should not have corrected this problem, and appropriate corrective actions were completed by the licensee (50-458/97007-04).

c. Conclusions

A firewatch independently removed RP posting sign inserts without authority. This was an isolated incident caused, in part, by the individual's failure to understand the consequences of such actions at a nuclear facility. The licensee's corrective actions

were prompt and appropriate. An NCV was identified for failure to maintain the required postings.

R1.2 Radiation Worker Entered RCA Without Proper Dosimetry

a. Inspection Scope (71750)

The inspectors reviewed the licensee's response to CR 97-0511, where a radiation worker entered the RCA without wearing a direct-reading dosimeter, contrary to the licensee's requirements.

b. Observations and Findings

On April 14, 1997, an instrument and control technician entered the RCA without his electronic direct-reading dosimeter. The technician had processed in with the RP process computer. He then became distracted and walked into the RCA without removing his dosimeter from the computer and attaching it to his clothing. The technician was subsequently contacted and exited the RCA. He had not entered any high radiation areas, for which dosimetry is required by regulation.

The licensee's investigation revealed that the alarm feature in the RP computer designed to alert workers if they failed to promptly remove their dosimeter did not function because the speaker was broken. This feature had been incorporated as corrective action for previously identified problems with personnel entering the RCA without their dosimeters. The speaker was replaced and the licensee commenced alarm operability checks on a shiftly basis.

The technician was viewed by the licensee as an excellent performer who consistently self-checked. The technician stated that he did not rely on the alarm and always checked himself at the RCA entry point. The technician could not explain why he did not on that day.

The inspectors determined that the computer alarm malfunction coupled with the distracted technician's failure to self-check was the cause of this incident.

The licensee concluded that the installation of turnstiles at the RCA control point would be helpful in preventing such incidents in the event the alarm failed or was not heard. Therefore, as of the end of this inspection period, the licensee had turnstiles on order.

c. Conclusions

The inspectors concluded that the technician's entry into the RCA without the proper dosimetry was caused, in part, by an equipment breakdown. This was coupled with a failure of the technician to self-check, which was an isolated incident for this individual.

S1 Conduct of Security and Safeguards Activities

S1.1 General Comments (71750)

During routine tours the inspectors noted that the security officers were alert at their posts, security boundaries were being maintained properly, and screening processes at the Primary Access Point were performed well. During night tours the inspectors found, in general, that lighting was being adequately maintained in otherwise darkened areas, such as under trailers.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on April 28, 1997. The licensee acknowledged the findings presented.

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

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

M. A. Dietrich, Director, Quality Programs
J. P. Dimmette, General Manager, Plant Operations
D. T. Dormady, Manager, System Engineering
J. R. Douet, Manager, Maintenance
J. Holmes, Superintendent, Chemistry
H. B. Hutchens, Superintendent, Plant Security
D. N. Lorfing, Supervisor, Licensing
J. R. McGaha, Vice President-Operations
W. P. O'Malley, Manager, Operations
D. L. Pace, Director, Engineering
A. D. Wells, Superintendent, Radiation Protection

INSPECTION PROCEDURES (IP) USED

IP 37551	Onsite Engineering
IP 61726	Surveillance Observations
IP 62707	Maintenance Observation
IP 71707	Plant Operations
IP 71750	Plant Support Activities
IP 92901	Followup - Operations
IP 92902	Followup - Maintenance

ITEMS OPENED AND CLOSED

Opened

50-458/97007-01 VIO Failure to maintain required independent verification requirements in procedures (Section O3.1)

Closed

50-458/96002-02 VIO Failure to perform independent verification (Section O8.1)

50-458/96002-04 VIO Failure to implement license condition (Section O8.2)

50-458/96003-01 VIO EDG horn relay removed without instructions (Section M8.1)

50-458/96004-01 VIO Missing plugs on Rosemount transmitters (Section M8.2)

Opened and Closed

50-458/97007-02 NCV Missed surveillance because of inappropriate credit taken (Section M1.4)

50-458/97007-03 NCV Failure to comply with 10 CFR 50.59 (Section E2.1)

50-458/97007-04 NCV Unauthorized removal of RP postings (Section R1.1)

LIST OF ACRONYMS USED

ANSI	American National Standards Institute
CR	condition report
EDG	emergency diesel generator
EOP	emergency operating procedure
FCV	flow control valve
gpm	gallons per minute
IP	inspection procedure
LCO	limiting condition for operation
MAI	maintenance action item
NCV	noncited violation
PDR	public document room
RCA	radiological controls area
RCIC	reactor core isolation cooling
RP	radiation protection
SERT	significant event review team
SR	surveillance requirement
TRM	technical requirements manual
TS	technical specification
UFSAR	Updated Final Safety Analysis Report