APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-458/90-21 Operating License: NPF-47

Docket: 50-458

Licensee: Gulf States Utilities Company (GSU)
P.O. Box 220
St. Francisville, Louisiana 70775

Facility Name: River Bend Station (RBS)

Inspection At: RBS, St. Francisville, Louisiana

Inspection Conducted: July 22 through September 4, 1990

Inspector: E. J. Ford, Senior Resident Inspector

Approved: _____ 9/25/90
G. L. Constable, Chief, Project Section C Date
Division of Reactor Projects

Inspection Summary

Inspection Conducted July 22 through September 4, 1990 (Report 50-458/90-21)

Areas Inspected: Routine, unannounced inspection of followup of events, operational safety verification, maintenance observation, surveillance observation, followup of previously identified items, and review of licensee event reports.

Results: Within the areas inspected, no violations or deviations were identified.

There is a developing problem at RBS due to personnel losses. Large losses (25 percent) have occurred in training. There is also an increase in the number of managerial and supervisory personnel resigning. This loss of talent and specific RBS knowledge must be viewed from the perspective that similar losses are being suffered among operations and other technical and professional employees. A continuation of this pattern could degrade plant performance.

Due to chronic oscillations of the A recirculation loop flow control valve, which had worsened during the month of August 1990, the licensee made the conservative decision to go to single-loop operations as permitted by Technical Specifications (TS). Operations and system engineering personnel were significantly involved in the conduct of this evolution and the resolution of problems involving an unexpected downshifting of the recirculation pumps prior to the maneuver.

System engineering and quality assurance are to be commended for their role in causing appropriate corrective actions to be applied to problems with safety-related 4.16 kV breakers. A problem with lubricant hardening, with the potential for unreliable breaker functioning, had received previous attention from design engineering. However, the original proposed corrective actions, which took approximately a year to produce, appeared to be inadequate and were successfully challenged by the above groups.

DETAILS

1. Persons Contacted

A. Bysfield, Supervisor, Control Systems
E. M. Cargill, Director, Radiation Programs
*J. W. Cook, Technical Assistant
*T. C. Crouse, Manager, Administration
*W. L. Curran, Cajun Site Representative
*J. C. Deddens, Senior Vice President, River Bend Nuclear Group
D. R. Derbonne, Assistant Plant Manager, Maintenance
L. A. England, Director, Nuclear Licensing
*P. D. Graham, Plant Manager
*G. R. Kimmel, Director, Quality Services
*D. N. Lorfing, Supervisor, Nuclear Licensing
*I. M. Malik, Supervisor, Quality Operations
*J. S. Miller, Director, Engineering Analysis
*J. J. Pruitt, Manager, Business Systems
*L. W. Rougeux, Sr. Engineer, ISEG
J. P. Schippert, Assistant Plant Manager - Operations, Radwaste and Chemistry
*K. E. Suhrke, General Manager-Engineering and Administration
*J. Venable, Assistant Operations Supervisor
*R. G. West, Assistant Plant Manager-System Engineering
S. Young, Supervisor, Reactor Engineering

The inspector also interviewed additional licensee personnel during the inspection period.

*Denotes those persons that attended the exit interview conducted on September 11, 1990.

2. Plant Status

The reactor began a coastdown (end-of-core-life decrease in power) on approximately August 10, 1990. The coastdown was proceeding at the expected rate of approximately 2 percent per week. The plant was routinely reduced in power on a weekly basis to conduct main turbine valve testing.

The plant has experienced chronic problems this operating cycle with oscillations of the A recirculation loop flow control valve. On the evening of August 3, 1990, the unit experienced an increase in the magnitude of these oscillations while reducing power for scheduled weekend turbine testing. However, after additional efforts at troubleshooting and corrective actions, on August 18, 1990, the licensee made a conservative operational decision to go to single-loop operation (after scheduled turbine testing) to preclude further oscillations. This maneuver was complicated by an unexplained transfer to low speed of the recirculation pumps during that testing. The licensee conducted extensive troubleshooting and maintenance activities to resolve the pump transfer

and other problems. The licensee successfully transferred the unit to single-loop operations on August 19, 1990, at 10:15 a.m. The unit continued operation at reduced power (65 percent) in single-loop operation for the duration of the inspection period.

3. Followup of Events (93702)

During this inspection period, the inspector reviewed licensee condition reports (CRs) and 10 CFR 50.72 reports and held discussions with various plant personnel to ascertain the sequence, cause, and corrective actions taken for plant events. Discussion of selected events are given below:

a. Malfunction of Electrohydraulic Pressure Regulator

On August 7, 1990, the operator observed an electrohydraulic control system pressure regulator error light on Panel 1H13-P680 during shift turnover. When the operators reset the regulator error (at Panel 1H13-P637), it resulted in a pressure spike and an average power range monitor (APRM) and rod block alarm. The plant was at 100 percent power and steady state operation, at the time, with no significant activities in progress. Approximately 1/2 hour later, the at-the-controls operator reported that a pressure regulator swap from the A to the B regulator had occurred for no apparent reason. The operator noted that no other indications changed. The inspector discussed this event with the operators and reviewed control room log entries and CR 90-0689. Additionally, the inspector reviewed pressure trace chart recordings and discussed the event with operations management.

A maintenance work order was initiated to troubleshoot the cause of the pressure spike and the illumination of the pressure regulator error light. Subsequently, on the evening of August 10, 1990, the inspector observed portions of the work effort to correct this problem. For further details see paragraph 5 of this report.

b. Single-Loop Operations

On August 19, 1990, at 10:15 a.m., the licensee put the plant into single-loop operation of the recirculation system as permitted by TS 3.4.1.1.b. This condition of operation restricts rated thermal power to 70 percent or less and requires that the recirculation loop flow control system be in the loop manual mode. Additionally, limits and setpoints for single-loop operation were adjusted in accordance with TS 2.1.2, 2.2.1, 3.2.1, 3.2.2, and 3.2.3.

The licensee elected single-loop operation because of problems with oscillations of the A loop recirculation flow control valve (FCV). The licensee stated that FCV oscillations are a generic problem for the BWR-6 and some BWR-5 plants.

FCV oscillations have been a chronic problem at RBS this fuel cycle and there have been repeated attempts to troubleshoot and correct the condition. There had been a recent increase in the magnitude of the oscillations resulting in an approximately 4 million lbm/hr swing in total core flow. This corresponds to a change of approximately 20-25 MWe (about 2 percent of full power). Furthermore, recent weekly downpower maneuvers had produced an increase in the magnitude of the swing as power was reduced.

c. Unexpected Downshift of Recirculation Pumps

At approximately 3:30 a.m., August 18, 1990, while conducting scheduled MSIV testing at reduced power (approximately 70 percent), the recirculation motor generator sets downshifted to low speed for no apparent reason resulting in a drop to approximately 40 percent rated thermal power. The plant successfully accommodated the transient and responded as expected. Subsequent investigations revealed that pressure changes caused by MSIV testing, downcomer recirculation temperature change, and a drifted setpoint on a recirculation pump cavitation detection circuit produced a combination of plant conditions which resulted in the as-designed functioning of the pump's downshift feature. CR 90-0721 was initiated by the operators to report the event. The inspector reviewed the CR and the control room logs and discussed the event with the cognizant operators. The inspector observed the deliberations of the facility review committee (FRC) which was convened several times over the weekend to evaluate the pump downshift, FCV oscillations, and other problems. This and other events were also discussed by the inspector with operations and engineering management personnel.

d. Partial Equipment Activations Due to Grid Undervoltage Transient

At 4:30 p.m., on August 25, 1990, the local grid experienced a severe voltage transient due to a fire at the Port Hudson substation. There was thunderstorm activity in the area at the time. This storm also caused all three units at the Waterford Station to trip off the grid.

The voltage transient caused an annulus pressure control system isolation which resulted in an automatic initiation of the annulus mixing and standby gas treatment systems. Additionally, containment purge, and Division II of the auxiliary building ventilation isolated and a partial isolation of the Division II fuel building ventilation system occurred. No valid engineered safety feature (ESF) signal could be identified.

An isolation of the filter demineralizers caused a pump low flow condition resulting in an isolation of the Reactor Water Cleanup system. The operators initiated Abnormal Operating Procedure AOP-3, "Automatic Isolations," to perform verification and restoration of isolated systems and completed the evolution at 5:15 p.m. Operators

manually recorded all incoming alarms prior to resetting the annunciators to provide additional data to engineering personnel investigating the system responses.

The inspector discussed the event with the operators and reviewed CR 90-0742, which described the transient and the plant's response, in order to understand why the division would not completely actuate. Subsequent investigations by system engineers disclosed that the logic circuits for actuation were not satisfied. However, the transient produced undervoltage conditions which affected certain equipment relays downstream of the logic outputs, but not others. According to the licensee, the undervoltage transient caused the voltage at the relays to drop to approximately 75 percent of the normal value. This caused some of the relays to deenergize and actuate their respective components. These relays are only required to sustain a 20 percent loss of normal voltage and are periodically tested to this valve by the licensee. The inspector reviewed and verified the licensees explanations utilizing Electrical Drawing 12210 - EKS - 7HVR08, "Elementary Diagram - 120V Cont. Ckt Reactor Plant Vent Dampers," and electrical bus voltage records for Division I and II Standby Bus Voltage 1ENS-SWG1A and -SWG1B.

e. 4.16 kV Breaker Rework Program

In November 1988, the low pressure core spray (LPCS) pump did not start as required by the scheduled surveillance test. CR 88-0857 was initiated on the failure. It stated that the LPCS pump motor breaker failed to close when the start switch was manipulated in the control room. The CR further documented that initial investigations by operations and electrical maintenance personnel did not indicate any obvious problems with the breaker. Additionally, subsequent investigation did not reveal any deficiencies with the procedure in use. When the breaker was racked to the full out position and back in, the pump start attempt was successful. Further testing with the breaker in the test position again produced difficulty with closing the breaker. This was overcome by again racking the breaker fully out and then back to test. During a second round of start attempts by maintenance personnel to ensure reliable breaker operation, the breaker again failed to close. The failed breaker was replaced by a spare breaker and then routed to electrical maintenance for examination, where it was discovered that the breaker's closing mechanism was binding.

Communications with the breaker vendor, Asea Brown Boveri (ABB), resulted in GSU applying a lubricant, Anderol 757, to the linkage and rollers of the breaker's closing mechanism. The breaker was then operated 35 times without failure and was returned to service as a spare breaker.

A 10 CFR Part 21 from ABB in March 1989, specifically stated that even though the breakers are lubricated for life, environmental

conditions and contaminants may cause the lubricant to discolor and harden. During the period June through October 1989, engineering groups within GSU were involved in issuing and reviewing an engineering evaluation and assistance request (EEAR).

Systems engineering did not agree with the recommended actions of the draft EEAR and, to assure actions beyond those of the EEAR, contacted ABB to meet on the (5HK-250) breakers. The spare breaker was removed from service and sent to GSU warehouse pending further evaluation. As a result of this meeting, ABB stated that correct lubrication can only be done by a complete teardown, cleaning, relubrication, and reassembly which should be done only by ABB at their shop. In addition, they would be able to provide GSU with a failure analysis of the breaker.

Through the remainder of 1989 and into early 1990, GSU attempted to qualify the Baton Rouge ABB shop to the qualified suppliers list (QSL). Communications with ABB's Sanford Florida Service Center, which had been approved to perform Category 1 rework of ABB 5HK-250 breakers, disclosed a turnaround time of 4-6 months after receipt of the breaker. As a result of GSU quality assurance (QA) audit failures of the Baton Rouge ABB shop, there was still no approved place of repair in May 1990. At this point, GSU QA suggested the alternative of allowing the failure analysis to proceed without QSL approval. GSU would provide ABB with all the parts and lubricants which would be required to rework the breaker; QA would verify that manuals, drawings, and anything used during the analysis and rework were the correct revisions and controlled by ABB's QA/quality control (QC) program. Also GSU's Quality Control personnel would witness all work at the shop and system engineering personnel would support the failure analysis and rework efforts.

By late June 1990, the first breaker was shipped to ABB. The failure analysis found no damaged or worn parts, and the reason for failure to operate was the hardened lubricant in the mechanism. A second breaker, which did operate correctly, was then sent to the ABB shop and was also found to have hardened lubricant.

The licensee justified continued operation by noting that the single failed breaker was an isolated case and that all Cat 1 breakers had met acceptance criteria for a timing test performed during RF-2. Additionally, there were no further failures of any 5HK-250 breakers during performance of monthly and quarterly testing. As part of the licensee's corrective actions, all safety-related breakers were to be disassembled and relubricated by the end of RF-3.

The inspector discussed all of the foregoing with licensee technical and management personnel and expressed concern that certain safety-related breakers should have a higher priority for attention. It was agreed that those breakers which are involved in load-shedding and sequencing loads back onto the vital bus should have the highest

priority and be given expedited attention. Accordingly, the licensee projected a 6-week breaker rework schedule for the below listed loads; they were completed, essentially, on schedule in early August 1990:

- Division I and II Diesel Generator (ACB07 and ACB27)
- Division I and II Standby Service Water pumps (ACB02, ACB22, and ACB29)
- Division I and II LPCI pumps (ACB03, ACB23 and ACB28)
- Division I LPCS pump (ACB08)

The continued pursuit of an acceptable resolution of adequate corrective actions by systems engineering was commendable and was representative of the attitude necessary to preserve the proper operation of critical equipment. The quality organizations are also to be commended for their role in causing this problem to be resolved in an acceptable manner while avoiding further delay.

No violations or deviations were identified.

4. Operational Safety Verification (71707)

The inspector toured the control room on a daily basis to observe operational activities, review and discuss plant status and observe the operators in the performance of their duties. During periods of unusual plant behavior, the inspector maintained an awareness of plant status by telephone when not on site. The inspector noted during the tours that operations management was in the control room on a daily basis. The inspector also noted that the operators enforced access controls and that management enforced administrative controls on staffing of the control room.

The inspector noted, on general tours of the plant and site, that preservation and refurbishment efforts were producing excellent results in the auxiliary building Elevation 70 west end, T tunnel Elevation 123 west end, radiological protection offices and control point, and various office spaces. The inspectors also noted, and received comments from visiting inspectors that, in general, the emergency diesel generator rooms, auxiliary building, and containment buildings were clean and well lit. Tours of the turbine building, fuel building, control building, offgas building, and tunnels also reflected good housekeeping with minor exceptions.

The inspector physically verified by direct manipulation that the doors listed on Attachment 1 were locked as required. The inspector also verified by direct observation that the radiation monitoring devices listed on Attachment 2 appeared to be operating properly, were energized and in service, and were within the calibration schedule.

During tours of the auxiliary building, the inspector noted correct electrical breaker alignments on the following 480 Vac motor control centers:

- EHS*MCC 2k (Breaker 4A was open and properly authorized by Tag No. 650409 for Clearance No. RB-1-90-0885. This removed power from Valve 1E12*F009 and was placed on July 8, 1990.)
- EHS*MCC2B
- EHS*MCC2D
- EHS*MCC2A
- EHS*MCC2C
- EHS*MCC2J
- EHS*MCC2L (Breaker 2C was open and properly authorized by Tag No. 626499 for Clearance No. RB-1-90-0885. This removes power from Valve 1B21*MOVF019 and was placed on July 8, 1990.)
- EHS*MCC2G
- EHS*MCC2E (Breaker 5B was open and properly authorized by Tag No. 650405 for Clearance No. RB-1-90-0885. This removes power from Valve 1E12*F052A and was placed on July 8, 1990. Breaker 6C was open and properly authorized by Tag No. 650407 for Clearance No. RB-1-90-0885. This removes power from Valve 1E12*F087A and was placed on July 8, 1990.)
- EHS*MCC2H
- EHS*MCC2F (Breaker 9C was open and properly authorized for Valve 1E12*F052B [see EHS*MCC2E above]. Breaker 7A was open and properly authorized for Valve 1E12*F087B [see EHS*MCC2E above]).

The following minor discrepancies were noted by the inspector and referred to the licensee for action:

- The hydrogen analyzer room needs lamping.
- Stairwell in vicinity of Door TB 093-03 needs lamping.
- C tunnel (near Door TB 067-19) has red pennant industrial safety barriers on floor, lamping is poor in the area, and a combustible (cardboard) was uncontrolled.
- E tunnel had a short length of abandoned radiological protection barrier rope on the floor but was not part of a barrier.

- Air sampler over steam tunnel plugs was apparently beyond the calibration due date.

- There wasn't a fire extinguisher at the station near the condenser waterbox wall.

No violations or deviations were identified.

5. Maintenance Observation (62703)

On August 7, 1990, operators observed a pressure regulator error light on the electrohydraulic control (EHC) system panel during shift turnover and reset the error. This resulted in an upscale APRM alarm and a rod block. A short time later (approximately 30 minutes), the EHC system swapped from pressure Control Loop A to Control Loop B for no apparent reason and without causing any other indicated effects. In light of the previous problem, the operators elected to allow the error light to remain on, rather than reset it, while awaiting corrective maintenance action. On August 10, 1990, Maintenance Work Order (MWO) R141971 was authorized for work release to troubleshoot the pressure regulator error light.

That evening the inspector observed portions of the implementation of the work order and noted that the work was conducted in accordance with administrative requirements and the authorizing documentation. By approximately 11:30 p.m., engineering had completed a retuning of the IEHS Pressure Regulator A and was able to successfully reset the error alarm. The tuning operation was accomplished by maintaining the B channel in control and taking the test switch (S1) of the bypass and test card to the "Test A" position. The emergency response information system (ERIS) system was then used to monitor the A and B flow demand signals while Resistor R18 of main steam Pressure Card A was adjusted so that the A and B flow demand signals matched each other. Switch S1 was then returned to normal, and the pressure regular was reset without further incident. This action was accomplished with the plant at a reduced power (approximately 80 percent) for other scheduled testing. The inspector reviewed the following completed documentation:

- CR-90-0689

- Maintenance Work Order Request R141971

- MWO R141971 work package: (1) job identification, (2) maintenance briefing sheet, (3) work traveler/inspection record, (4) job plan and attachment A (guidelines for troubleshooting)

- Attachment 2 of GMP-0042 (Lifted Lead and Jumper Tag Sheet)

- planner checklist for MWO R141971

No discrepancies were noted by the inspector during this review of the documentation.

No violations or deviations were identified.

6. Surveillance Test Observation (61726)

The inspector observed and reviewed the performance of Surveillance Test Procedure STP 207-4813, "RCIC Isolation - RCIC Steam Supply Pressure Low, 18 Month Resp Time Channel A (E31-N085A; E31-N685A)," and STP 051-4505, "RPS/RHR Reactor Vessel Level-Low, Level 3; High, Level 8, Monthly Chfunct, (B21-N080A, B21-N680A, B21-N683A)."

- STP-207-4813, "RCIC Isolation - RCIC Steam Supply Pressure Low . . .," Revision 5, dated September 19, 1989. The purpose of this reactor core isolation cooling (RCIC) system test was to perform a response time test for system isolation and the RCIC steam supply low pressure trip as required by TS 4.3.2.3, Table 3.3.2-3.5.c. Channel A is tested in this procedure. This test is applicable when in Operational Condition 1, 2, or 3 and is performed on a staggered basis such that Channel A is tested in one 18-month period (550 days) and Channel B is tested in the next 18-month period.

- STP-051-4505, "RPS/RHR Reactor Vessel Level-Low, Level 3; High, Level 8 . . .," Revision 2, dated January 16, 1990. The purpose of this test is to perform a channel functional test of the reactor protection system/residual heat removal reactor vessel water level instrumentation as required by TS 4.3.1.1 and 4.3.2.1, Tables 4.3.1.1-1.4 and -1.5 and 4.3.2.1-1.6.c. This test is applicable when in Operational Condition 1, 2, and 3 and is performed monthly.

In the above cases, the inspector discussed the procedures with the technicians who were able to explain the technical intent of the procedure and had a working knowledge of the involved plant system. The test equipment being utilized was verified to be within its calibration date. The inspector noted that the control operating foreman (COF) had granted permission to perform the test and the technicians conducted the test utilizing the latest revision of an approved procedure. Good communications were established between the operators and the technicians during the test. Communications are facilitated, in part, by the close proximity of the instrument panels to the main control area. Independent verification and lifted lead control were performed as required by General Maintenance Procedure GMP-0042, "Circuit Testing and Lifted Leads and Jumpers." The test results were within the limits established by the plant's TS and they were reviewed and approved by the COF.

No violations or deviations were identified.

7. Followup of Previously Identified Items (92701)

a. (Closed) Unresolved Item (458/9018-01): Calibration Program on TOPAZ Inverter Setpoints.

As previously reported in NRC Inspection Report 50-458/90-04 and further discussed in NRC Inspection Report 50-458/90-18, on February 11, 1990, the unit experienced a partial ESF actuation of the Division II diesel generator, Containment Unit Cooler 1B, and associated service water supply valves and an autostart of Control Building Filter B, the RCIC initiation logic, and the opening of the Residual Heat Removal B and C injection valves.

The event occurred when scheduled electrical preventative maintenance was being performed on the Division II battery charger (ENB*CHRG 1B). When an electrician switched to the equalize position on the charger, the TOPAZ inverter (powered by the charger's 125 Vdc bus) tripped. Upon operator restoration of the TOPAZ inverter, the ESF described above occurred.

This event was further reviewed by an augmented inspection team (see NRC Inspection Report 50-458/90-05). As part of the licensees' corrective actions, preventative maintenance procedures were developed for the TOPAZ inverters, which included a voltage trip and reset setpoint check. This was implemented by MWO packages which were reviewed by the inspector in NRC Inspection Report 50-458/90-18. As a result of that review, the inspector questioned why an earlier calibration problem (documented in CR 86-1515) did not prompt the initiation of an inverter calibration program. Subsequently, the licensee was able to produce vendor manual references which specifically recommended against periodic calibration, except as a postmaintenance activity. This statement is contained in Vendor Manual 3242.414-000-012, Chapter 5, page 5-1. Because the licensee was following vendor recommended practices, the inspector had no further questions.

This unresolved item is closed.

b. (Closed) Followup Item (458/9018-01): On August 8, 1990, the inspector met with System Engineering representatives to discuss previous questions concerning the indication lights of Breaker ACB043. A modification (MR 87-0719) which was previously implemented caused the breaker circuitry to inadvertently allow the green and amber lights to be dimly lit when the red light is energized. During a previous tour of electrical panels by the inspector, it was noted that the red light was out and the green and amber dimly lit. This was not a normal and expected indication and the inspector was concerned that this condition could cause operator confusion. It was later determined that the red light was burned out and it was replaced. The licensee has installed an informational sign for the operators at the breaker panel as an interim resolution pending the implementation of a circuit modification.

The breaker in question supplies power to the control building chilled water compressor (1HVK*CHL1B). The inspector reviewed CR 90-0645, which was initiated by engineering on July 24, 1990, in

response to the inspector's concerns. A review of Electrical Drawing E5K-6HVK02 by the inspector and licensee showed that a "sneak" circuit was present which caused the dimly lit lights. However, this does not prevent proper operation of the supplied equipment.

This item is closed.

No violations or deviations were identified.

8. Licensee Event Reports (LERs) (92700)

During this inspection period, the resident inspector reviewed LERs for compliance with requirements established in 10 CFR 50.73. Specifically, the LERs were reviewed for accuracy and clarity of the event description, the cause of each component and/or system failure or personnel error, the failure mode and effect each event had on plant operation, and operator actions that affected the course of the event.

The following LERs, as a group, represent problems with automatic initiation of air cleaning systems. The inspector reviewed the LERs and discussed the various causal mechanisms with the cognizant engineer. The history and technical adequacy of various corrective actions were reviewed. The majority of actuations (nine LERs) were caused by system sensitivity to "white noise" generators, such as welding operations, and have been essentially eliminated as a result of electronic filtering and improved shielding. Three of the events were caused by missed samples in 1986 and early 1987, and there has not been a recurrence. Another three LERs were initiated because of mechanical problems with the check source which have not recurred. The remaining three LERs reported events with unrelated causes, such as supply voltage degradation, contaminated ductwork nearby, and inadvertent shutdown of a radiation monitor during preventative maintenance.

The following LERs were reviewed and closed:

- (Closed) LER (458/86-020, Revisions 0, 1, and 2): Automatic Initiation of Standby Gas Treatment System
- (Closed) LER (458/86-034): Fuel Building Filtration Train B Automatic Start
- (Closed) LER (458/86-040, Revision 2): Control Room Charcoal Filtration System Actuation
- (Closed) LER (458/86-049, Revision 2): Fuel Building Filtration Start on Spurious Radiation Monitor Spike
- (Closed) LER (458/86-052, Revision 1): Spurious Control Room Ventilation Isolation

- (Closed) LER (458/86-062, Revision 1): Automatic Initiation of SGTS Due to a Radiation Monitor Spike

- (Closed) LER (458/88-008): Automatic Initiation of Standby Gas Treatment System and Reactor Building Annulus Mixing Fan Due to Radiation Monitor Spurious Trip

- (Closed) LER (458/87-008, Revision 2): Control Room Charcoal Filtration Start Due to Radiation Monitor Spike

- (Closed) LER (458/88-014): Inadvertent Autostart of the "B" Divisions of the Annulus Mixing and Standby Gas Treatment Systems due to a Mechanically Stuck Checksource in a Particulate Radiation Monitor

- (Closed) LER (458/88-015): Inadvertent Autostart of Fuel Building Charcoal Filtration System Due to Incorrect Performance of Preventive Maintenance Task

- (Closed) LER (458/88-022, Revision 2): Autostart of Fuel Building Ventilation Treatment System Due to Radiation Monitor High Without Actual High Radiation Condition

- (Closed) LER (458/88-029): Inadvertent Autostart of the "B" Divisions of the Annulus Mixing and Standby Gas Treatment System Due to a Mechanically Stuck Checksource in a Particulate Radiation Monitor

- (Closed) LER (458/89-028): Autostart of Fuel Building Filter Trains Due to Radiation Monitor Spike Without High Radiation Condition

- (Closed) LER (458/89-037): Control Building Ventilation System Actuation on Spurious High Radiation Alarm

- (Closed) LER (458/90-007): Control Building Ventilation System Actuation on Spurious High Radiation Alarm Due to Severe Electrical Transient

9. Exit Interview

An exit interview was conducted with licensee representatives identified in paragraph 1 on September 11, 1990. During this interview, the NRC inspector reviewed the scope and findings of the report. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspector.