



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report No.: 50-261/88-08

Licensee: Carolina Power and Light Company
P. O. Box 1551
Raleigh, NC 27602

Docket No.: 50-261

License No.: DPR-23

Facility Name: H. B. Robinson

Inspection Conducted: May 16-20, 1988

Inspectors: M. J. DeGraff
M. J. DeGraff, Team Leader

8/11/88
Date Signed

Team Members

P. J. Kellogg
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8/11/88
Date Signed

SUMMARY

Scope: This routine announced inspection involved the review of corrective actions for previously identified violations and inspector follow-up items. This review involved evaluations of the corrective actions for the findings of the SSFI of the Robinson Unit 2 emergency power systems and emergency diesel generators as documented in NRC Inspection Report No. 261/87-06.

Results: Corrective actions for previous findings were found to be adequate. This inspection report formally issues the Notice of Violation for two potential violations identified in NRC Inspection Report No. 261/87-06. The violations identified were:

- Failure to have adequate procedures to test the "A" station battery, paragraph 2.a.
- Failure to implement corrective actions for "B" emergency diesel generator deficiencies, paragraph 2.b.

The corrective actions for these violations were reviewed during this inspection and were found to be adequate; therefore, the violations have been closed.

Additional information concerning a third potential violation (261/87-06-11), identified in the SSFI report, was reviewed and the potential violation retracted (paragraph 2.c). (The remaining violation (261/87-06-01) was issued in a Notice of Violation and Proposed Imposition of Civil Penalty dated November 13, 1987.)

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*R. Allen, Project Specialist, License Training
*S. Clark, Project Engineer, Design Engineering
*J. Curley, Director, Regulatory Compliance
*W. Dill, Senior Engineer, Nuclear Engineering Department
*W. Flanagan, Manager, Modification Project
*B. Gainey, Operations Support Supervisor
*S. Griggs, Aide, Onsite Nuclear Safety
*M. Macon, Project Engineer, Nuclear Engineering Department
*D. Quick, Manager, Maintenance
*D. Stadler, Onsite Licensing Engineer
*K. Williams, Design Engineering
*H. Young, Director, Quality Assurance/Quality Control

Other licensee employees contacted during this inspection included craftsmen, engineers, operators, mechanics, security force members, technicians, and administrative personnel.

NRC Resident Inspectors

*R. Latta, Resident Inspector
L. Garner, Senior Resident Inspector

*Attended exit interview

Acronyms and Initialisms used throughout this report are listed in the last paragraph.

2. Action on Previous Inspection Findings (92701, 92702)

- a. (Closed) Violation 261/87-06-08, Failure to Have Adequate Procedures to Test the "A" Station Battery.

During the SSFI, procedure EST-012, Station Battery Load Test, Rev. 2, was found to be inadequate to perform the surveillance required by TS 4.6.3.5 in that the procedure did not include a complete load profile for the "A" station battery. TS 4.6.3.5 states that the station batteries shall be subjected to a load test once every five years and requires that "battery voltage as a function of time shall be monitored to establish that the battery performs as expected during heavy discharge." The failure to establish an adequate procedure and to implement the requirements of TS 4.6.3.5 is identified as violation 261/87-06-08.

The NRC had also identified additional concerns during the review including the omission of a temperature correction factor for the temperature at the time of test or a minimum battery temperature, failure to address minimum acceptable voltage of supplied equipment, and no trending of results to confirm sufficient battery capacity for the next five year interval. These concerns were still pertinent after review of procedure MST-920 which was to replace EST-012. Additionally, other concerns were identified with respect to the batteries' operation. These included specific gravity corrections and minimum value, correction of electrolyte level due to the battery rack tilt, and broken thermometer parts inside three different battery cells.

The licensee's response to these items included acknowledgement that the surveillance test used to load test the batteries was inadequate and indicated the following corrective actions had been accomplished: A revised load profile was developed using field verified load information. This load profile was incorporated into battery sizing calculation sets 7988-E1 (Battery B) and 7988-E3 (Battery A). The one hour cycle developed by these calculation sets, using the revised load profile, were incorporated into special procedure SP-772, Station Battery Service Test. Each battery was then tested to this procedure and successfully passed. The inspectors reviewed the revised load profiles, voltage profile (7988-E4), and minimum inverter voltage verification profile (7988-E5). These calculation sets were verified to be incorporated into SP-772 and SP-760, Station Battery Performance Test. The results of these tests conducted in May 1987 were reviewed and found to be acceptable.

Additional corrective actions reviewed included addition of heaters to the A and B battery room to maintain the temperature above 67 degrees F. Corrections for minimum specific gravity and electrolyte level due to battery rack tilt were also accomplished by procedure changes. During the performance of battery testing, temperature correction and the inclusion of a minimum acceptable voltage based on voltage drops to the supplied loads have been added. The inspectors also reviewed drafts of procedures MST-920, Station Battery Performance Test (Five Year Interval) and MST-921, Station Battery Service Test, which will be used to test the battery in the future. All of the corrections identified above were incorporated into these procedures.

Documentation reviewed from the battery manufacturer indicated the broken thermometer parts would not cause a catastrophic failure of the cells and any detrimental effects would be picked up during periodic test on the batteries.

- b. (Closed) Violation 261/87-06-13, Failure to Adequately Implement the Requirements of 10 CFR Part 50, Appendix B, Corrective Actions.

The vendor, Fairbanks-Morse in November of 1984 and July of 1986, supplied information to the licensee detailing scavenging air blower failures at other facilities. To avoid similar problems, the vendor recommended that the following actions be taken: Light load operation of the EDG should be limited to less than five minutes, scavenging air blower clearances should be recorded during annual outages, and conduct a temperature test to ensure that the differential temperature across the blower does not exceed 100 degrees F or modify the blowers to achieve the required clearances.

In February of 1986, while performing PM-008, EDG Inspection Number 2, the licensee noted there was evidence of rubbing on the "B" EDG scavenging air blower. However, no blower clearances were recorded. Additionally, vendor recommended light load operation was not implemented until March of 1987. Special Test, SP-722 was conducted in October of 1986 to determine the differential temperature across the blower. The test results indicated that the vendor recommended value of 100 degrees F was exceeded within the first few minutes of the test. Although these test results were reviewed by the PNSC, no corrective action was initiated.

- Finally, between March 9 and March 23, 1987, the "B" EDG experienced at least two high crankcase pressure trips during operability and surveillance testing. Although it was not initially determined to be a significant contributor to these trips, on March 9, 1987 the licensee was aware of a high water content in the "B" EDG lube oil. Upon determining that the water content was in excess of limits specified in PM-001, Equipment Lube Oil Sampling, the licensee did not initiate any corrective action. On March 13, 1987 following maintenance, "B" EDG tripped on high crankcase pressure. Subsequent investigation by the licensee determined that the lube oil cooler was leaking, causing water to enter the lube oil system. The failure to take prompt corrective action for the examples identified above is identified as violation 261/87-06-13.

To resolve these concerns the licensee has initiated a new corrective action program detailed in procedure PLP-026, Corrective Action Program, Revision 0. The inspector reviewed a draft copy of this procedure. PLP-026 establishes the means to identify, document, evaluate and track corrective actions of off normal conditions. An off normal condition is defined as an adverse condition in any category that should be corrected including failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances. Under the new corrective action program each section within the licensee's organization (i.e. Maintenance, Health Physics, Operations, etc.) will be required to revise current corrective action procedures to include the minimum requirements established by PLP-026. The licensee indicated that training would be provided to the appropriate plant personnel on the methodology and requirements of

the corrective action program. The licensee intends to have the program fully implemented by August of 1988.

- c. (Closed) Violation 87-06-11, Failure to Provide Adequate Procedures to Control EDG Fuel Oil in the IC Tank.

The licensee's response to the SSFI report denied that the proposed violation occurred. The denial was based on the fact that the EDG fuel oil testing program met the original commitments as detailed in correspondence between the licensee and NRC. NRC subsequently accepted and approved the fuel oil testing program in December of 1981. Based on the additional information provided by the licensee, and internal NRC correspondence, it has been determined that a violation in this area did not occur and therefore the violation is retracted.

- d. (Closed) IFI 86-11-01, Take Action to Assure Lecture Attendance Matrix is Accurate.

During a previous inspection, inaccuracies in the operator requalification class attendance records were noted. The inspector reviewed TI-906, Annual Requalification Attendance Matrix Review, Rev. 6, which requires the training supervisor to review training attendance records. In addition, several recently completed requalification attendance records were reviewed. No inaccuracies were noted.

- e. (Closed) IFI 86-11-02, Complete Interviews of Personnel Involved in LERs 86-06 and 86-09.

The inspector conducted interviews with three licensed individuals involved in LERs 86-06 and 86-09. The individuals indicated that a contributing factor to the events in LER 86-09 had been a weakness in prior training. The Shearon Harris simulator, which had been used for training of Robinson licensed operators, had a substantially different reactor response to movement of the controlling rod groups. This potential weakness has been corrected in that Robinson now has its own simulator. One post-event training inadequacy was identified, which is discussed under IFI 86-11-03.

During this closeout of IFI 86-11-02, a number of LER deficiencies were noted. Several information blocks were not completed on these two LERs, and a number of examples were identified by the inspectors where required information in the body of the LER was missing. Of particular concern was the failure to address corrective action to prevent recurrence. The licensee was requested to submit a supplement to LER 86-09 to address items not adequately addressed in the original LER. Specifically, the licensee was requested to address corrective actions to prevent recurrence, including post maintenance testing after feed flow tubing maintenance, preventive

maintenance for steam flow tubing clogging, and operator training in rod worth.

Poor quality of LERs had been identified to the licensee in an NRC Office of Analysis and Evaluation of Operational Data (AEOD) report in 1987. The inspector reviewed eight recent 1988 LERs, and noted improvement. Additionally, the licensee committed that an LER Writer's Guide, with particular attention paid to corrective actions to prevent recurrence, would be completed and implemented by April 1989. Resolution of this item will be identified as IFI 50-261/88-08-01.

- f. (Closed) IFI 86-11-03, Incorporation of LER 86-06 into Operating Experience Review

The inspector reviewed the operating experience feedback for LERs 86-06 and 86-09. As a result of LER 86-06 the following changes were initiated: GP-007, Plant Cooldown from Hot Shutdown to Cold Shutdown was revised, reactor operator lesson plan ESF-LP-3 was revised, and training on the LER was conducted during the requalification cycle. For LER 86-09, similar operating experience feedback was conducted. Additionally, this LER was routed as required reading to provide timely feedback to all licensed operators. For LER 86-06 the licensee could not produce the documentation to show that timely feedback to operators did occur. The LER was not routed for required reading, operating procedures were not revised until approximately nine months after the event, and requalification training was not completed until approximately ten months after the event. Additionally, the licensee could not produce any documentation to indicate operators were in any way informed of or trained on this event prior to the requalification training. In summary, corrective action to prevent recurrence during the first nine months after the event may not have been accomplished. The licensee committed to ensure that, for future operational events (involving operators) that have sufficient safety importance to warrant an LER, operators will be informed of the event and lessons learned in a timely manner. The licensee stated that this would be done by the Operations Department during shift turnover meetings. Resolution of this item will be identified as IFI 50-261/88-08-02.

During this review of LERs, the inspector found examples of corrective action commitments made in LERs to the NRC that were not tracked in the licensee's RAIL commitment tracking system. The licensee had no measures in place to assure that these commitments would be completed. The licensee committed to ensure that, effective immediately, all new commitments made in LERs to the NRC would be included in the RAIL commitment tracking system. Additionally, the licensee committed that a written RAIL procedure would be completed and implemented this year. Resolution of these items will be identified as IFI 50-261/88-08-03 and IFI 50-261/88-08-04.

- g. (Closed) IFI 87-06-02, Review of Breaker Verification Checklist to Address Power Operation Breaker Alignments.

During the SSFI the NRC identified that Attachment 9.1 of OP-603, Electrical Distribution System Startup Lineup, listed breaker positions for a cold shutdown pre-heatup alignment. This checklist had also been used by QA auditors in performing breaker alignment verification while the plant was at power. At power, some breakers were in different positions than those shown in attachment 9.1, as required by operating procedures. As a result, there was confusion and potential error in the QA audits of breaker positions. The inspector reviewed the current revision (Rev. 21) to Attachment 9.1. Breakers that should have a different at power position are now identified by an asterisk. The asterisk references a page footnote that states, "* Breaker position varies with plant conditions in accordance with general procedures."

- h. (Closed) IFI 87-06-03, EDG Loading Indication in the Control Room.

During the SSFI the NRC identified a concern with the control room operators' inability to maintain load on the EDG below the TS limit of 2750 KW. There is no KW meter provided in the control room, and the only load indication available is an ammeter. Additionally, there was no information provided to the operators to correlate amperage to KW load. To resolve this concern the licensee had installed a placard on the RTGB which states "Relate RTGB indications to KW using curve 7.7 and FSAR table 8.3.1-1 to determine EDG loads." Curve 7.7 allows the operator, using amperage and a load list (for power factor estimation), to determine the KW load on the EDG. FSAR table 8.3.1-1 provides a list of electrical loads associated with plant equipment. The inspectors verified the installation of the placard on the RTGB as well as the availability of curve 7.7 and the FSAR table for control room operators.

- i. (Closed) IFI 87-06-04, Resolution of Concerns and Recommendations Associated with I.E. Notice 84-69, Operation of Emergency Diesel Generators.

During the SSFI the NRC identified a concern that the licensee had not completely acted on all the concerns and recommendations associated with I.E. Notice 84-69. Specifically, the following concerns were noted:

- (1) Inadequacies with the Operations staff knowledge concerning reset of the EDG following a trip.
- (2) Addition of the EDG protective relays into the plant calibration program to assure greater equipment reliability.
- (3) Addition of E-bus breakers 52/18B and 52/28B in the periodic inspection and testing program applicable to other E-bus breakers.

The licensee has provided training to the Operations staff detailing the most likely scenarios under which the EDG would trip. Using an SRO and an RO, the inspectors walked through reset procedures for both an EDG overspeed trip and an EDG output breaker trip. In both cases, operator knowledge was adequate to accomplish both tasks. The E-bus breakers 52/18B and 52/28B are included in the licensee's periodic testing and inspection program under PM-402, Circuit Breaker Inspection and Testing, Revision 2. To include the EDG protective relays in the plant calibration program, the licensee has implemented PIC-805, Westinghouse Type CV-7 Undervoltage Relays, Rev. 1; PIC-808, Westinghouse Type CW Reverse Power Relays, Rev. 0; PIC-809, Westinghouse Type COV and CO Overcurrent Relays; and PIC-810, Westinghouse Type CV-8 Ground Detection Relays, Rev. 8. These relays are calibrated during each refueling outage.

The licensee has revised OP-604, Diesel Generators "A" and "B", Section 4.0, Precautions and Limitations. Step 4.2.3 now provides guidance to Operations personnel on the effects to the EDG if a LOOP occurs while the EDG is operating in parallel with offsite power. Additionally, if a LOOP is recognized, the operator is directed to Section 8.1, Infrequent Operations, step 8.2. This step provides the operator with direction to reset EDG breakers, reset the fuel racks if an overspeed trip has occurred, and direction to cross connect starting air if air pressure is less than 150 psig.

- j. (Closed) IFI 87-06-05, Resolution of Concerns Associated with Electrical Trip/Reset Button on 480 Volt Emergency Bus Breakers.

During the SSFI the NRC identified a concern with operator understanding on the operation of the electrical trip/reset buttons for 480 volt breakers on buses E-1 and E-2. These buttons are operable only in the test position except for the supply breakers for MCC-5 and MCC-6, which are operable only in the connected position. To resolve this concern, the licensee installed labels on the supply breakers for MCC-5 and MCC-6. Additionally, electrical lesson plans for senior reactor operator, reactor operator, and auxiliary operator training were revised to include the operation of the electrical trip/reset buttons. The inspectors verified the installation of labels and the revisions to the lesson plans.

- k. (Closed) IFI 87-06-06, Adequacy of the DC Lighting in the EDG Rooms.

During the SSFI the lighting in the EDG rooms were assessed to be inadequate. This assessment was based on the inspectors' observations of emergency lighting in the EDG rooms following a partial loss of power. To resolve this concern the licensee initiated plant modification M-755D. This modification resulted in the addition of two 8 hour emergency lighting units, ELS-110 and 109, in the "B" EDG room and one emergency lighting unit, ELS-111, in the "A" EDG room. The inspectors verified the installation and positioning of the new lighting units to be adequate.

loss of instrument air allowing normal operation of the EDG ventilation system. The inspectors reviewed the completed modification. No problems were noted.

- p. (Closed) IFI 87-06-17, Potential Loss of Auxiliary Building Ventilation and Radiological Release.

During the SSFI the NRC identified a concern that the loss of auxiliary building ventilation coupled with a partial failure of the EDG ventilation system could result in an unmonitored release path. The licensee performed a review of the potential for an unmonitored release via the EDG ventilation system and determined that the potential existed for a release. However, the radiological effects of the analyzed release indicated the levels were significantly below 10 CFR 100 limits and were less than 10% of site pathways limits as described in RG.1.109 requiring a radiation monitor. The inspectors reviewed the licensee's evaluation and had no further questions.

- q. (Closed) IFI 87-06-18, Use of FSAR as a Design Basis Document and Establishing a Control System for Design Basis Calculations.

The inspector reviewed records for training given during August 4-13, 1987 to the technical staff on misuse of the FSAR as the sole source of design basis information. A total of 57 people received the training, which appeared to be adequate to cover this concern. Additionally, the inspector reviewed the licensee's plans for control of design calculations. These plans included completion of written procedures, providing training to user groups, distributing an index of calculations, and transferring copies of all included calculations to the records vault. Procedures are being written and coordinated for four groups: Nuclear Engineering Department, Technical Support Staff, Fuel Department, and Transmission Department. Draft procedures for Technical Support and Nuclear Engineering were reviewed. Licensee's plans and draft procedures appeared to be adequate to correct the problem with control of calculations. The licensee's current schedule is for implementation of this program in 1988.

- r. (Closed) IFI 87-06-22, Performance of Analysis on Actual EDG Fuel Oil Storage Capacity.

During the SSFI the NRC determined that the actual EDG fuel oil storage on site was insufficient to operate the diesel at full load for seven days. This condition contradicted the FSAR Section 8.3.1.1.5.1 which states that "A minimum of 25,000 gallons of fuel oil is maintained on site. This is sufficient to operate one diesel at full load for seven days." To resolve this concern the licensee completed preliminary engineering calculation 87-17 to determine the fuel oil required to operate one diesel for seven days. The load profile assumed by the licensee was 154 hours at 100 percent load

1. (Closed) IFI 87-06-07, Adequacy of Communications in the EDG Room.

During the SSFI the NRC identified a concern with the adequacy of the communications between the EDG rooms and the main control room. To resolve this concern the licensee has upgraded the portable radio system used by Operations personnel. The licensee has installed a repeater to the radio system that was formerly used by plant security. Additionally, the power supply for the repeater has been taken from the dedicated shutdown bus. This system has been tested by the NRC in a previous inspection and was found to provide adequate communications.

m. (Closed) IFI 87-06-14, Setpoint Differences on EDG Instrumentation.

During the SSFI the NRC identified an apparent lack of control over setpoints associated with the diesel air start compressor pressure switches and the lube oil low pressure cutout switches. To resolve this concern the licensee recalculated the air compressor setpoints necessary to provide for eight start attempts and recalibrated the pressure switches. The lube oil low pressure cutout switch was reset to 18 psig to conform with the manufacturer's recommendations. The inspectors reviewed the calibration sheets associated with these switches and found the setpoints to have been changed. Procedure MMM-006, Calibration Program was reviewed and the revised setpoints were found to be incorporated.

n. (Closed) IFI 87-06-15, Calibration of EDG Instrumentation.

During the SSFI the NRC identified an item concerning a number of EDG instruments which were not included in the periodic calibration program. These instruments included the expansion tank level switches, the standby lube oil temperature switches, and jacket water temperature switches. The licensee has conducted a review of EDG instrumentation, and added appropriate instrumentation to the periodic calibration program. Additionally, a review of instrument calibrations is being conducted on other plant systems to determine if additional instrumentation should be added to the calibration program. This review is to be completed by December 31, 1988. The inspector reviewed MMM-006, Calibration Program, and determined that the diesel instrumentation had been added to the program.

o. (Closed) IFI 87-06-16, EDG Ventilation System.

During the SSFI the NRC identified that a failure of the plant instrument air system and subsequent loss of the EDG room ventilation could cause the loss of both diesels. The loss of the EDGs would be caused by the elevated room temperatures created by the ventilation system operating in a recirculating mode. To resolve this concern, the licensee has completed a plant modification (MOD 921) to the EDG ventilation inlet and exhaust dampers. Through this modification the dampers now fail open upon a

(2500 KW) and 14 hours at 110 percent load (2750 KW). From this, the licensee determined that the required fuel oil amount was approximately 30,000 gallons. As a result of this, the licensee initiated a revision to OMM-008, Minimum Equipment List, to administratively increase the fuel oil capacity in the EDG fuel oil storage tank. This was an interim measure until the final calculations could be completed. The final calculations were completed in March of 1988, as documented under LER 88-006. In the LER, the licensee reported that the required amount of fuel oil for one diesel carrying full load for seven days was 30,430 gallons. Additionally, the licensee indicated in the LER that the plant TS and FSAR would be revised to reflect these values. The inspector verified that the licensee has initiated both the revision to the TS and the FSAR.

- s. (Closed) IFI 87-06-23, Concerns in the EDG Starting Air System and the As Built Configuration.

During the SSFI the NRC identified differences between system drawings G-190204-A, Rev. 10; control drawings A-190301, Rev. 0; modification package M-763; and the as-built plant configuration of the EDG starting air system. The inspector reviewed drawings G-190204-A, Rev. 16; A-190301, Rev. 1; and modification package M-763. Additionally, the diesel air start system was walked down. No discrepancies were noted. During the walkdown a missing identification tag on PS-1961B was noted and identified to the licensee for correction.

- t. (Closed) IFI 87-06-24, Licensee's Seismic Analysis for the Modification of the EDG Air Start Line.

During the SSFI the NRC identified a concern relative to the seismic calculations for a modification to the EDG air start system. A reanalysis of the piping system was conducted during the inspection, which determined the piping to be satisfactory. The inspector reviewed the reanalysis which determined the piping to be satisfactory.

- u. (Closed) IFI 87-06-25, Review of Battery Concerns.

During the SSFI the NRC identified several areas of concern over the installation and operation of the safety-related batteries. These items included adequacy of the battery rack mounting, cell spacer material, damage to the auxiliary building roof due to acid spilled from the "C" battery, battery inverter modification not included in plant drawings, inadequate battery load from inverters, inaccurate battery load profile, lack of interface between different departments in the licensee's organization, and the tying of the A and B busses together during surveillance. The inspectors reviewed a calculation showing the battery rack mounting to be satisfactory to withstand a seismic event with the two bolts loose.

Documentation concerning inadequate battery load from inverters and inaccurate battery load profile is contained in paragraph 2.a. Letters from the battery manufacturer indicating that the installed spacer material was satisfactory were reviewed. A review of the recommendation for acid resistant paint for the auxiliary building roof was reviewed and the installation verified by the inspectors. Drawings were reviewed to ensure the inverter modification was included in the plant drawing. Required interface agreements between departments were reviewed. Procedures were reviewed to ensure that A and B busses would no longer be connected together during surveillance.

- v. (Closed) IFI 87-06-26, Review of the Licensee's Evaluation of DC Breaker Short Circuit Calculations.

During the SSFI the NRC identified four concerns related to potential DC short circuits. Corrective action for each concern was reviewed by the inspectors and found to be acceptable.

One concern was that the calculated battery short circuit current capacity was less than the manufacturer's tested value. A second concern was that the battery short circuit capacity was not adjusted for maximum permitted cell temperature. The inspector reviewed the licensee's revised calculations and substantiating data for short circuit capacities of battery "A" and battery "B". These included manufacturer's rated values, adjustments for temperature, and calculated values per IEEE standard 946-1985. The values calculated per IEEE were higher than the temperature adjusted manufacturer's rated values, and were 12,040 amps for the "A" battery and 4480 amps for the "B" battery. Including the battery charger short circuit capacity of 3000 amps, the maximum DC system short circuit current that could be generated was calculated to be 15,040 amps. This was higher than the previously calculated maximum of 9700 amps noted in the SSFI inspection report.

A third concern was that, for these calculations, the battery tie breakers were assumed to be open. However, they had been allowed to be closed with the plant at power, as stated in licensee's Technical Specification, FSAR, and operating procedures. The licensee had stated that these documents would be revised to require the battery tie breakers to be open except when the plant is in cold shutdown. Technical Specification 3.7.3 change request was submitted to the NRC by licensee letter serial #NLS-88-009 of January 28, 1988. The FSAR will be revised as part of the 1988 annual update due to be submitted to the NRC by July 22, 1988; and operating procedure OP-601 has been changed.

The licensee's calculations for the cold shutdown condition where the tie breakers could be closed were reviewed. These showed the maximum short circuit current for two batteries and one charger to be 19,520 amps.

The fourth concern was that the maximum DC short circuit current could exceed the DC breaker ratings of 10,000 amps. The inspector reviewed a letter from the manufacturer, Westinghouse, to the licensee dated May 12, 1987, regarding the type EHB breakers installed in the DC system at the plant. The letter stated that, based on engineering tests done by Westinghouse according to UL 489 procedures, these breakers can safely interrupt the following DC circuits: 21,000 amps at 250 volts with a time constant of 10 milliseconds or less; 30,000 amps at 125 volts with a time constant of 10 milliseconds or less. The licensee confirmed with Westinghouse that these two pole breaker interrupt capacities were applicable to ungrounded DC systems as well as grounded systems. The 30,000 amp breaker capacity exceeds the maximum operating DC short circuit current of 15,040 amps and also exceeds the maximum cold shutdown DC short circuit current of 19,520 amps.

3. Exit Interview

The inspection scope and results were summarized on May 20, 1988, with those persons indicated in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection results listed below. Dissenting comments were not received from the licensee. Proprietary information is not contained in this report.

<u>Item Number</u>	<u>Status</u>	<u>Description</u>
261/87-06-08	Closed	Violation - Failure to have adequate procedure to test the "A" station battery, paragraph 2.a.
261/87-06-13	Closed	Violation - Failure to adequately implement the requirements of 10 CFR Appendix B in activities affecting the quality of safety related equipment, paragraph 2.b.
261/88-08-01	Open	IFI - Implementation of the LER Writer's Guide.
261/88-08-02	Open	IFI - Inform operations of lessons learned from operational events during shift turnover meetings.
261/88-08-03	Open	IFI - Track commitments made to the NRC in LERs through the RAIL commitment tracking system.
261/88-08-04	Open	IFI - Implementation of a written RAIL procedure.

Additionally, the following commitments were made by the licensee at the exit meeting to correct program weaknesses noted by the NRC.

- a. An LER Writer's Guide will be completed and implemented by April 1, 1989, paragraph 2.e.
- b. Effective immediately, all new commitments made in LERs to the NRC will be included in the RAIL commitment tracking system, paragraph 2.f.
- c. A RAIL procedure will be completed and implemented this year, paragraph 2.f.
- d. For operational events (involving operators) that are sufficiently important to safety to warrant an LER, operators will be informed of the event and lessons learned in a timely manner, paragraph 2.f.

4. Acronyms and Initialisms

AO	Auxiliary Operator
DC	Direct Current
EDG	Emergency Diesel Generator
FSAR	Final Safety Analysis Report
GMP	Gallons Per Minute
HBR	H.B. Robinson Steam Electric Plant
IC	Internal Combustion
IE	Inspection and Enforcement
KW	Kilowatts
LER	Licensee Event Report
LOOP	Loss of Off-Site Power
MMM	Maintenance Management Manual
NRC	Nuclear Regulatory Commission
OMM	Operations Management Manual
OP	Operating Procedure
PLP	Plant Procedure
PM	Preventative Maintenance
PNSC	Plant Nuclear Safety Committee
PRA	Probabilistic Risk Assessment
PSIG	Pounds per Square Inch Gauge
QA	Quality Assurance
RAIL	Regulatory Action Items List
RO	Reactor Operator
RTGB	Reactor Turbine Generator Board
SI	Safety Injection
SP	Special Test
SRO	Senior Reactor Operator
SSFI	Safety System Functional Inspection
TS	Technical Specification