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

Report Nos.: 50-413/91-09 and 50-414/91-09

Licensee: Duke Power Company
P.O. Box 1007
Charlotte, N.C. 28201-1007

Docket Nos.: 50-413 and 50-414 License Nos.: NPF-35 and NPF-52

Facility Name: Catawba Nuclear Station Units 1 and 2

Inspection Conducted: March 3, 1991 - April 13, 1991

Inspector: S. E. Sparks for 5/3/91
W. T. Orders, Senior Resident Inspector Date Signed

S. E. Sparks for 5/3/91
P. C. Hopkins, Resident Inspector Date Signed

S. E. Sparks for 5/3/91
J. Zeiler, Resident Inspector Date Signed

Approved by: George A. Belisle 5/3/91
George A. Belisle, Chief Date Signed
Projects Section 3A
Division of Reactor Projects

SUMMARY

Scope: This routine, resident inspection was conducted in the areas of review of plant operations; surveillance observations; maintenance observations; licensee event reports; followup of previously identified items; and followup of events.

Results: Two violations were identified. One violation involved a failure to follow procedural requirements resulting in equipment operability in excess of the time allowed by Technical Specifications, paragraph 4.0. The second violation involved inadequate instructions in a Work Request written to seal penetrations in the wall of Unit 2 ECCS pump rooms. Personnel, following the terse instructions, taped the openings of the Auxiliary Building Ventilation exhaust ducts in the 2B Safety Injection room, potentially degrading the safety-related function of the room's ventilation system, paragraph 5.0.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

B. Caldwell, Station Services Superintendent
***R. Casler, Operations Superintendent
**T. Crawford, Integrated Scheduling Superintendent
R. Ferguson, Shift Operations Manager
***J. Forbes, Technical Services Superintendent
R. Glover, Performance Manager
**J. Hampton, Station Manager
T. Harrall, Design Engineering
***L. Hartzell, Compliance Manager
R. Jones, Maintenance Engineering Services Manager
V. King, Compliance
F. Mack, Project Services Manager
W. McCollum, Maintenance Superintendent
**R. Rayfield, CSRG Member
**S. Rose, CSRG Chairman

Other licensee employees contacted included technicians, operators, mechanics, security force members, and office personnel.

NRC Resident Inspectors

***W. Orders
***P. Hopkins
***J. Zeiler

*Attended exit interview on 4/9/91.
**Attended exit interview on 4/12/91.
***Attended both exit interviews.

2. Plant Status

a. Unit 1 Summary

Unit 1 began the report period at 9% power, in the process of starting up following the completion of a forced maintenance outage to repair the main generator exciter. Details of this maintenance are included in NRC Inspection Report Nos. 413, 414/91-07. Following a routine start-up, the unit operated at full power with no major perturbations until March 20 when a planned shutdown was initiated to facilitate a refueling outage. The unit ended the report period defueled.

b. Unit 2 Summary

Unit 2 operated for the entire report period at or near full rated power.

3. Plant Operations Review (71707)

The inspectors reviewed plant operations throughout the report period to verify conformance with regulatory requirements, Technical Specifications and administrative controls. Control Room logs, the Technical Specification Action Item Log, and the Removal and Restoration log were routinely reviewed. Shift turnovers were observed to verify that they were conducted in accordance with approved procedures. The complement of licensed personnel on each shift inspected, met or exceeded the requirements of Technical Specifications. Further, daily plant status meetings were routinely attended.

Plant tours were performed on a routine basis. The areas toured included but were not limited to the following:

Turbine Buildings
Auxiliary Building
Units 1 and 2 Diesel Generator Rooms
Units 1 and 2 Vital Switchgear Rooms
Units 1 and 2 Vital Battery Rooms
Standby Shutdown Facility

During the plant tours, the inspectors verified by observation and interviews that measures taken to assure physical protection of the facility met current requirements. Areas inspected included the security organization, the establishment and maintenance of gates, doors, and isolation zones in the proper conditions, and that access control badging were proper and procedures followed.

In addition, the areas toured were observed for fire prevention and protection activities and radiological control practices. The inspectors also reviewed Problem Investigation Reports (PIRs) to determine if the licensee was appropriately documenting problems and implementing corrective actions.

Within this area, no violations or deviations were identified.

4. Inoperable Nuclear Service Water System (93702)

Event Summary

On March 23, 1991, at 3:00 a.m., Unit 1 was in Mode 5, Cold Shutdown, commencing a scheduled refueling outage. Unit 2 was in Mode 1, Power Operations. At 3:33 a.m., Operations personnel removed the 1A Diesel Generator (D/G) from service using procedure OP/1/A/6350/02, Diesel Generator Operation. When performing that procedure, a Non-Licensed Operator (NLO) requested the Unit 1 Operator at the Controls (OATC) to

assist him in ensuring that Essential Motor Control Center, 1EMXG, was aligned to Alternate Blackout Power load center, 2ELXA. The OATC used an Operator Aid Computer (OAC) graphic display for this determination which incorrectly indicated that 1EXMG was powered from 2ELXA. On March 26, at 2:00 p.m., an Engineered Safeguard Feature Bypass Panel (1,47) alarm was received in the Control Room, alerting the operators of a problem with nuclear service water system (RN), train A. Subsequent investigation revealed that the reason for the alarm was the fact that 1EMXG had not been aligned to 2ELXA.

By 3:04 p.m., operators had reconfigured the electrical alignment, powering 1EXMG from 2ELXA. As a result of the misalignment, RN Train A was inoperable on both Units 1 and 2 for a period of approximately 3 and one-half days.

System Description and Design Basis

The RN System serves as the ultimate heat sink in providing the station with a nuclear safety-related cooling water system. The RN system has two sources of water, Lake Wylie and the Standby Nuclear Service Water Pond (SNSWP). The SNSWP serves as the nuclear safety (assured) source, and is sufficient to bring the station to a cold shutdown condition following a Loss of Primary System Coolant Accident (LOCA) on one unit while supporting routine operation on the other unit. Water is supplied to the RN pump structure via separate intake lines from either Lake Wylie or the SNSWP. There are two separate pump pits within the structure, physically separating Train A and Train B. Two pumps in each pit (four total) provide flow to a common header which supplies cooling to the related train on both Units.

The RN system supplies cooling water to various heat loads in both the safety and non-safety portions of each unit. Sufficient redundancy of piping and components is provided to ensure that cooling is maintained to essential loads at all times.

The RN system is designed such that mechanical components in the RN pump house are not unit, but train related. Each essential RN train has a single supply line and a single return line that serves both units. The 1E (Essential) electrical bus that provides power to the "unit" components is the only tie to a specific unit. Major isolation and crossover valves are normally powered from Unit 1, but can be supplied from Unit 2 during prolonged Unit 1 diesel generator outages.

The 600 VAC Essential Auxiliary Power System for Unit 1 supplies Class 1E power through load centers to the 600 VAC essential motor control centers (MCC) and consists of two redundant safety trains, A & B. MCC 1EMXG which supplies power to MCC 1EMXO, are Train 'A' rather than unit related and can be fed from either Unit 1 or 2 essential load centers (1,2 ELXA).

MCC 1EMXG supplies 600 VAC to valves 1RN-54A (RN Discharge Crossover Isolation Valve), 1RN-57A (RN Discharge to Conventional Service Water (RL) System Valves), and 1RN-63A (Loop A&B Return to SNSWP). MCC 1EMXG also feeds MCC 1EMXO which in turn supplies 600 VAC to 1RN-1A and 1RN-5A (RN Pump Pit Intake from Lake Wylie Isolation Valves), 1RN-3A (RN Pump Pit Intake from SNSWP Isolation Valves), and 1RN-36A (RN Pump Lube Injection Strainer Inlet Crossover Isolation Valves).

The diesel generator and its load sequencing system are designed to automatically energize the necessary blockout and/or LOCA required loads. A loss of voltage sensed at the 4160 VAC essential switchgear bus, 1ETA, 1ETB, or a safety injection actuation signal will actuate the sequencer.

The Engineered Safeguard Features Bypass Indication System is provided to alert the Control Room (C/R) operator of any critical safety related system/train inoperability. The indicating light panel is located in the C/R. The awareness generated from these alarms should assure that both trains of a system are not bypassed at the same time.

Event Description

On March 22, 1991 at 7:00 p.m., Unit 1 was in Mode 5, in preparation for End of Core refueling activities (U1EOC5). Unit 2 was in Mode 1, Power Operations. The Operations (OPS) night shift was scheduled to complete a 1A D/G 24 hour run and the removal of RN 'A' Train from service.

At 1:00 a.m., on March 23, 1991, the 1A D/G 24 hour run was complete. By 3:00 a.m., OPS was removing 1A D/G and RN 'A' Train from service. Procedure OP/1/A/6350/02, Diesel Generator Operation, was being used to remove the D/G from service. The procedure had been reviewed by the Unit 1 Supervisor and the NLO who was to perform the procedure. When the NLO reached step 2.7.1 of Enclosure 4.13 which states, "Ensure MCC 1EMXG is being fed from 2ELXA.", he conferred with the Unit 1 Supervisor who emphasized that 1EMXG must be powered from Unit 2.

At 3:37 a.m., 1A D/G was removed from service. 'A' Train RN and ECCS 'A' Train became inoperable due to shared RN valves. All 'A' Train supported safety equipment was rendered inoperable as a result.

At 4:00 a.m., the NLO asked the Unit 1 OATC assistance in ensuring that 1EMXG was powered from Unit 2. The OATC called up the 'A' Train 4160V graphic on the Unit 1 OAC which supposedly indicated that the Unit 2 feeder breaker (2ELXA) to 1EMXG was closed. The NLO signed off step 2.7.1 based upon the OAC indication and proceeded with the procedure.

At 5:00 a.m., with 'A' Train RN removed from service, 2A D/G, 'A' Train Control Room Ventilation (VC), and 'A' Train Emergency Core Cooling Systems (ECCS) were also removed from service for planned maintenance. At this point, the station entered a 72 hour action statement.

On March 26, 1991, at 4:45 a.m., 2A D/G and Unit 2 RN 'A' Train was declared operable.

At 5:25 a.m., 'A' Train VC was declared operable.

At 2:00 p.m., the C/R received an alarm on the Emergency Safeguard Feature Bypass Panel (1.47 Bypass). C/R personnel investigated and found that 1EMXG was still connected to 1ELXA.

At 3:04 p.m., 1EMXG was placed on 2ELXA.

RN Train 'A' and associated equipment on both Units were inoperable in that the equipment was without emergency back-up power for 3 days and 11 hours and 27 minutes.

Requirements

Technical Specification 3.7.4 requires that two independent RN loops be operable with each loop containing two operable RN pumps and associated emergency D/Gs, two essential supply and return headers, and a flow path capable of being aligned to the SNSWP when both Units 1 and 2 are above Mode 5. With only one Unit above Mode 5, the two independent RN loops are required to be operable with each loop containing one operable RN pump and the before mentioned equipment associated with the operating Unit. If the LCO cannot be met, operability is to be restored within 72 hours, or the unit(s) must be placed in Mode 3, Hot Standby, within 6 hours, and in Mode 5 within the following 30 hours.

Technical Specification 6.8.1 requires that written procedures be established, implemented and maintained covering in part the operation of the emergency electrical power sources and the service water system.

Conclusion

On March 23, 1991, a non-licensed operator failed to follow operating procedure OP/1/A/6350/02, Enclosure 4.13, step 2.7.1 when D/G 1A was being removed from service in that he failed to ensure that MCC 1EMXG was aligned to Unit 2 load center 2ELXA to supply power to critical nuclear service water valves shared between both units. Failing to perform this electrical alignment resulted in the A train of nuclear service water being inoperable on both Units 1 and 2 in excess of the 72 hour action statement.

This issue is a violation of the requirements of Technical Specifications 3.7.4 and 6.8.1, and is identified as Violation 50-413/91-09-01: Inoperable Nuclear Service Water System.

Within this area, one violation was identified.

5. Degraded ECCS Pump Room Ventilation (71707)

During a routine tour of the Auxiliary Building on April 5, 1991, the inspector discovered tape covering both the A and B Train Auxiliary

Building Ventilation (VA) exhaust ducts in the 2B Safety Injection (NI) pump room. The inspector was concerned that with tape covering the ducts, the VA system would be unable to perform its intended safety function of maintaining the room at a slightly negative pressure such that any airborne radioactivity released in the room during an accident would be processed through the VA filter system. The inspector informed the licensee, who immediately investigated the problem and determined that even with the tape in place, an inward flow of air could be achieved for the 2B NI pump room. This demonstrated that the tape was not providing a complete seal or obstructing all flow through the ducts. In addition, all other Unit 2 ECCS pump rooms were flow tested to ensure that an inward flow of air could be achieved. Based on the verification of adequate ECCS pump room airflow, the VA System was considered operable.

On April 8, 1991, the tape was removed from the exhaust ducts after a flow balance test was performed on both trains of the VA System to ensure that the tape removal did not perturb the existing flows from each ECCS room.

During accident conditions, the VA system is designed to shut off air flow from all areas of the Auxiliary Building except for the rooms which contain safety-related pumps which are part of the ECCS. With no air being supplied, these rooms are maintained at a negative pressure to prevent leakage of airborne activity from the rooms.

The licensee determined that the ducts had been taped by mistake on April 4, 1990, under Work Request No. 7466PRF. The purpose of this work was to locate holes in the walls of the Unit 2 ECCS rooms and to seal them. The concern over the leakage integrity of the rooms stemmed from a Design Engineering evaluation involving the ability of the VA filter unit heaters to perform their safety function in the event of a degraded voltage condition.

Each VA filter unit uses a heater to reduce the relative humidity of the air exhausted from the ECCS pump rooms. Under a worst case degraded voltage situation, the heater would not have enough capacity to reduce the relative humidity of the air to the required level. To ensure that the relative humidity level would not be exceeded, the total required flow through the VA heaters, and subsequently, from the ECCS pump rooms was reduced. At this reduced airflow condition, however, the large number of unsealed openings in the walls of the ECCS pump rooms made it difficult to maintain a negative air pressure in the rooms. Holes in the walls of the ECCS rooms were then taped, as a temporary measure, to ensure that the VA airflow test would still pass at the reduced flows. Planned long-term corrective action included the removal of the tape and its replacement with fire stop material to be used as a permanent sealant.

The inspectors reviewed Work Request No. 7466PRF and concluded that the instructions provided to accomplish the taping activity were

inadequate, in that the instructions did not provide the necessary detail to correctly accomplish this activity. As a result, personnel performing the work on April 4, 1990, apparently misunderstood the intent of the instructions and subsequently, taped all potential leakage paths from the rooms, including the VA exhaust ducts.

10 CFR 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings, requires that activities affecting quality shall be prescribed by instructions, procedures, or drawings, of a type appropriate to the circumstances and that these instructions, procedures, and drawings include appropriate quantitative or qualitative acceptance criteria for determining that important activities are satisfactorily accomplished.

Catawba Nuclear Station Directive 3.3.7, Work Request Origination, Section 4.0, Administration of Work Control System, Step 4.2, requires personnel initiating a work request to supply complete, accurate, and legible information.

This issue is considered a violation of the requirements of 10 CFR 50, Appendix B, Criterion V and is identified as Violation 50-414/91-09-02: Inadequate Work Request Instructions Resulting in Taping of ECCS Room Ventilation Exhaust Ducts.

Within this area, one violation was identified.

6. Loss of Decay Heat Removal: Program Enhancements Review (TI 2515/103)

On October 17, 1988, the NRC issued Generic Letter 88-17 which requested each licensee to respond to eight recommended expeditious actions (short-term program) and six recommended programmed enhancements (long-term program). These actions were requested in response to potential deficiencies in procedures, hardware, and training relating to prevention of, and response to, loss of decay heat removal (DHR) during operations with the reactor coolant system (RCS) partially drained.

Duke Power Company responded to the Generic Letter on January 3, 1989, for the Catawba facility detailing their response to each of the recommended expeditious actions. The resident inspectors reviewed the licensee's response and confirmed the implementation of their short-term program for preventing and responding to loss of decay heat removal. Details pertaining to this review are found in NRC Inspection Report Nos. 50-413, 414/90-11.

Duke responded to each of the six recommended program enhancements for the Catawba facility on February 2, 1989.

The inspectors verified that the licensee had provided adequate provisions in the Control Room for reliable reactor coolant system (RCS) level and core exit temperature indications. Details pertaining

to this instrumentation hardware and monitoring capabilities are discussed in the previously mentioned NRC report. As a future enhancement, the licensee plans to install permanent ultrasonic narrow-range level instrumentation to provide level indication in the RCS loops B and C hot-leg pipes.

In a review of the licensees' actions to provide Residual Heat Removal (ND) System performance monitoring, it was noted that Control Room instrumentation provides indication of ND flow, discharge pressure, discharge temperature, and instantaneous ND pump motor current. The Safety Parameter Display System (SPDS) was also recently modified to monitor ND flow and to provide alarms on low flow.

GL 88-17 discusses the need for licensee's to provide for early indication of ND pump damage or failure from the ingestion of air into the suction of the pumps. If air is ingested, the ND pumps are likely to start cavitating. The early symptoms of pump cavitation are typically erratic behavior of pump motor current, oscillations of pump suction pressure, and, a loud audible noise level increase from the pump when air ingestion begins.

At present, the licensee does not have the capability to effectively monitor any of these three parameters from the Control Room. Instantaneous motor current is provided by a small meter on the control board panel, but it is too inexact to effectively monitor for air ingestion symptoms. The licensee attempted to monitor noise from the ND pumps by installing sound receiving equipment at the entrance to the ND pump rooms. Using telephone communication, an operator was able to listen to ND pump noise from the Control Room by dialing the pre-established number which activated the sound monitoring equipment. This system was utilized on a trial basis and later abandoned due to problems with background noise.

The resident inspectors previously reviewed procedures that covered normal, abnormal, and emergency operating conditions, during periods of reduced RCS inventory. Details of this review were documented in NRC Report Nos. 50-413, 414/90-11. During this inspection, procedural enhancements were reviewed. No discrepancies were identified from this review.

In reviewing the licensee's actions to prevent a loss of decay heat removal (DHR) due to an unplanned activation of the autoclosure interlock function associated with the ND suction valves, it was noted that power to the valves is removed prior to the initiation of RCS draining. This activity is controlled in the unit shutdown procedure, OP/1(2)/A/6100/02.

The inspectors reviewed the results of Design Engineering analyses conducted to support the basis for procedures, instrumentation installation and response, and Nuclear Steam Supply System behavior under nonpower operations. Design Engineering supplied information

including: time to core boil and uncovery as a function of time, required RCS makeup as a function of core boil off rate, various containment temperature and pressure plots based on available ventilation conditions, and the viability of RCS makeup paths.

In this report period, Unit 1 entered reduced RCS inventory conditions as part of the current refueling outage (U1EOC5). The inspectors witnessed aspects of the licensee's activities in preparation for and operations in this reduced RCS inventory condition. The inspectors verified that required instrumentation was installed and operating reliably to monitor RCS level, temperature, and ND system parameters. Controlling procedures for containment closure were reviewed to ensure that a continuous status of each penetration was maintained. The inspectors also verified that at least two means of supplying inventory to the RCS were maintained operable.

The resident inspectors have reviewed the above mentioned procedures, have witnessed inplant implementation of the program, and will continue to monitor the program pursuant to routine inspection activities.

Within this area, no violations or deviations were identified.

7. Surveillance Observation (61726)

a. General

During the inspection period, the inspectors verified plant operations were in compliance with various TS requirements. Typical of these requirements were confirmation of compliance with the TS for reactivity control systems, reactor coolant systems, safety injection systems, emergency safeguards systems, emergency power systems, containment, and other important plant support systems. The inspectors verified that: surveillance testing was performed in accordance with approved written procedures, test instrumentation was calibrated, limiting conditions for operation were met, appropriate removal and restoration of the affected equipment was accomplished, test results met acceptance criteria and were reviewed by personnel other than the individual directing the test, and any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

b. Surveillance Activities Reviewed

The inspectors witnessed or reviewed the following surveillances:

PT/1/A/4200/02D	Containment Closure Verification - Part II
PT/1/A/4600/02E	Mode 5 Periodic Surveillance Items
PT/2/A/4150/01D	NC System Leakage Calculation

PT/2/A/4150/02	Visual Inspection of Radioactive Systems Outside Containment
PT/2/A/4200/14A	Ice Condenser Intermediate Deck Door and Inlet Door Position Monitoring System Inspection
PT/2/A/4200/62	RN to NW Flow Verification
PT/2/A/4350/02A	Diesel Generator 2A Operability Test
PT/2/A/4350/03	Electrical Power Source Alignment Verification
PT/2/A/4450/10B	Unit 2 Diesel Generator CO_2 Weekly Test
PT/2/A/4600/02A	Mode 1 Periodic Surveillance Items

Within this area, no violations or deviations were identified.

8. Maintenance Observations (62703)

a. General

Station maintenance activities of selected systems and components were observed/reviewed to ensure that they were conducted in accordance with the applicable requirements. The inspectors verified licensee conformance to the requirements in the following areas of inspection: activities were accomplished using approved procedures, and functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities performed were accomplished by qualified personnel; and materials used were properly certified. Work requests were reviewed to determine the status of outstanding jobs and to assure that priority was assigned to safety-related equipment maintenance which may affect system performance.

b. Maintenance Activities Reviewed

The inspectors witnessed or reviewed the following maintenance activities:

NSM 13603	Replace Nuclear Service Water (RN) piping to and from 1 EMF45A
NSM 13559	Prefab and install 1RNE27 per NSM 11250 Rev. 0. and install lifting lugs to support wet tap to RN.
NSM 004324(MES)	Perform plugging on RN non-essential header line for replacement of valve RN 48B.
NSM 91024809	Maintenance inspection and repair of 600V breakers in load center 1 ELXA.
NSM 91025907	Calibrate Component Cooling (KC) Heat Exchanger 1A inlet flow indicators.

Within this area, no violations or deviations were identified.

9. Review of Licensee Event Reports and Part 21 Followup (90712, 92700)

a. The below listed Licensee Event Reports (LERs) were reviewed to determine if the information provided met NRC requirements. The determination included: adequacy of description, verification of compliance with Technical Specifications and regulatory requirements, corrective action taken, existence of potential generic problems, reporting requirements satisfied, and the relative safety significance of each event. Based on this review, the following LERs were closed:

413/90-03:	Management Deficiency Resulting in Operation within an Unanalyzed Safety Injection System Alignment
413/90-05 Rev. 1:	Technical Specification 3.0.3 Entered for Inoperable Power Range Nuclear Instrumentation During Unit Shutdown Due to a Management Deficiency
413/90-10:	Technical Specification Violation Due to Missed Monthly Surveillance of SSF Reactor Coolant Temperature Indication Due to Defective Procedure (NCV 413/90-09-04 Identified)
413/90-18:	Technical Specification Violation Due to Missed Surveillance Resulting In Power Operated Relief Valves Being Declared Inoperable
413/90-23:	ESF Actuation in Mode 5 Due to Defective Procedure
413/90-26:	Technical Specification Violation Resulting from Auxiliary Feedwater Valve Circuit Breaker Found not Padlocked Due to Inappropriate Action
414/90-04:	Technical Specification 3.0.3 Entered as a Result of Two Channels of Power Range Nuclear Instrumentation Being out of Acceptable Due to Defective Procedure

b. The following 10 CFR 21 Reports were reviewed to verify that the licensee had the information and had determined that these were not applicable or had implemented appropriate corrective action. The following 10 CFR 21 Reports were closed:

413, 414/P2189-14: Foxoboro Model N-E11 and N-E13 Pressure Transmitters Containing 10-50 MA Type Amplifiers May Experience Current Output Oscillation Due To Workmanship Deficiencies. The licensee's evaluation concluded that this item was not applicable for the station.

413, 414/P2189-19: Dresser Industries Pressure Reducing Sleeves manufactured by Pacific Pumps May Have A Brittle Crack Failure Due To Inadequate Heat Treatment. The licensee's evaluation concluded that this item was not applicable for the station.

414/P2189-01: Brown Boveri Kline, K-225 Through K-2000 Circuit Breakers Delivered Prior To 1974 Need Rebound Spring Added To Slow Close Pin. The licensee's evaluation concluded that this item was not applicable for the station.

413, 414/P2189-15: Two Ambient Compensated HFB 3125A Molded Case Thermal/Magnetic Circuit Breakers Failed To Meet Instantaneous Trip Portion Of Time/Current Curves. The licensee's evaluation identified that there were eight (four per unit in the Hydrogen Skimmer System) Westinghouse ambient compensated MCCBs used in safety-related application at the station. This item affected one installed breaker and two spare breakers which have been returned to the manufacturer for recalibration. The seven other breakers were tested for start and run and all passed performance requirements.

Within this area, no violations or deviations were identified.

10. Followup on Previous Inspection Findings (92701 and 92702)

The following previously identified items were reviewed and ascertained that the licensee's responses, where applicable, and licensee actions were in compliance with regulatory requirements and corrective actions had been completed. Selective verification included record review, procedures review, and discussions with plant staff.

a. (Closed) Inspector Followup Item (IFI) 413/89-31-02: Inadequate Power Supply for Emergency Notification System Pending Modification Completion to Provide a Reliable Backup Source of Power.

The licensee responded to this item and determined that the Emergency Notification System is no longer powered by Motor Control Center/lighting panelboard SMXQ/A1-3. It is now powered from the Site Communications Building which has a backup diesel generator in case normal source power is lost (including the loss of offsite power). Normal power for the Site Communications Building is fed via the 480-volt EPX power system from load center 2SLYA, compartment 5C. Compartment 5C is permanently labeled in a manner which positively identifies it and the load which it feeds.

b. (Closed) IFI 413/89-21-09: Inadequate Emergency Procedure.

During an operator licensing requalification simulator scenario being conducted by NRC Region II examiners in 1989, it was detected that in procedure EP/1/A/5000/1E, Steam Generator (S/G) Tube Rupture, a CAUTION just prior to step 4 states: "Feedwater Flow should not be established to any S/G that is both ruptured and faulted." Step 4 instructed the operator how to feed the S/G using Auxiliary Feedwater (CA) flow directing the operator to throttle CA flow to "maintain" ruptured S/G N/R level between 5% and 15%. Step 5 of the procedure required the transition to procedure EP/1/A/5000/1E3, Steam Generator Tube Rupture with Continuous NC leakage Subcooled Recovery. Step 10 of that procedure required the operator to "maintain" 5% to 15% level. However, there was no CAUTION concerning the case of a S/G tube rupture. During this inspection, the inspector verified that the licensee responded to this item. The inspector determined that the procedural changes necessary to satisfy the concerns raised by this issue were completed and implemented on February 17, 1991.

c. (Closed) IFI 414/89-29-03: Upper Surge Tank Level Measurement Reliability.

The inspector verified that the licensee responded to this concern. Design study CN-NSM-20615 was completed and approved by the Station Manager on March 13, 1991, for implementation. This modification was developed to provide more accurate level indication for the Unit 2 Upper Surge Tank Level. This modification is expected to be implemented during the Unit 1 Refueling Outage (U1EOC5) or later in Fiscal Year 1991.

d. Followup on NRC Information Notice No. 91-08, Medical Examinations for Licensed Operators

On or about March 13, the licensee informed the resident inspectors of some problems identified during their review of

Information Notice 91-08. In a review of the licensee's actions taken as a result of that review, the following was verified.

Upon receipt on March 11, 1991, the licensee initiated an evaluation of the information notice that included 10 CFR 55, ANSI/ANS 3.4-1983 and Form NRC 396. A problem was identified in that examinations did not include testing for olfactory sense and tactile discrimination.

In response to this finding, the licensee modified their program such that effective March 20, 1991, the medical examinations will incorporate these tests. Each operator will be asked to identify two odoriferous substances from a selection of oil of clove, oil of peppermint, vanilla extract, lemon, coffee or similar substances. Each will be in an opaque container. The operator should be able to identify both substances. If not, another substance will be used. Correctly identifying 2 of 3 substances is acceptable. If the operator has an illness that may cause his/her sense of smell to be impaired, the test will be repeated after the illness.

A test for tactile discrimination will be performed on each operator. It will be performed by the operator identifying common objects in the palm of each hand behind his/her back. Three objects will be tested in each hand. The operator should identify all three correctly. The objects that will be used to test are a coin, a key, a paper clip, a bottle or jar lid, a safety pin, or a hair clip. If the operator does not correctly identify the objects, the test will be repeated. If the operator still does not correctly identify all of the objects, a practical test will be given.

It is the medical opinion of attending physicians that the failure to perform these tests in the previous licensed operator's examinations does not prevent any of these individuals from fully performing all of their licensed duties and is in no way jeopardizing the operation of the facility. Tactile discrimination is observed on a daily basis in the control room and on the simulator. Lack of smell, although important to detect gases, and combustion, does not prevent an operator from performing his duties. Secondly, total lack of smell occurs rarely and occurs with stroke, frontal lobe brain tumors, skull fractures, and serious conditions that are usually evident.

A revised and enhanced Nuclear Operator Examination and a Medical History and Physical Examination for Nuclear Operators Form EM396 has been completed and is being used. Any additional tests, such as more extensive blood tests, additional chest x-rays, or EKG stress tests may be ordered by the examining physician if deemed necessary to insure that the operator meets ANSI/ANS 3.4-1983

requirements. The licensee's response to NRC Information Notice No. 91-08 was thorough and timely.

Within this area, no violations or deviations were identified.

11. Exit Interview

The inspection scope and findings were summarized on April 9 and April 12, 1991, with those persons indicated in paragraph 1. The inspector described the areas inspected and discussed in detail the inspection findings listed below. No dissenting comments were received from the licensee. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

Item Number	Description and Reference
VIO 413/91-09-01	Failure to Correctly Perform Electrical Alignment Resulting in the RN System Being Inoperable. (Paragraph 4)
VIO 414/91-09-02	Inadequate Work Request Instructions Resulting in Personnel Potentially Degrading the Safety-Related Function of the 2B NI Pump Room's Ventilation System. (Paragraph 5.0)