



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA STREET, N.W.
 ATLANTA, GEORGIA 30303

Report Nos.: 50-325/84-08 and 50-324/84-08

Licensee: Carolina Power and Light Company
 411 Fayetteville Street
 Raleigh, NC 27602

Docket Nos.: 50-325 and 50-324

License Nos.: DPR-71 and DPR-62

Facility Name: Brunswick 1 and 2

Inspection at Brunswick site near Southport, North Carolina

Inspectors:	<u>PK Harder for</u>	<u>5/15/84</u>
	D. O. Myers, Senior Resident Inspector	Date Signed
	<u>PK Harder for</u>	<u>5/15/84</u>
	L. W. Garner, Resident Inspector	Date Signed
Approved by:	<u>[Signature]</u>	<u>5/17/84</u>
	P. Bemis, Section Chief	Date Signed
	Division of Reactor Projects	

SUMMARY

Inspection on March 15 - April 15, 1984

Areas Inspected

This routine, safety inspection involved 178 inspector-hours on site in the areas of surveillance, maintenance, operational safety verification, ESF system walk-down, in-office Licensee Event Reports review, independent inspection, plant transients, Bulletin followup, previous inspection item followup and refueling activities.

Results

Of the ten (10) areas inspected, no violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

J. Boone, Engineering Supervisor
L. Boyer, Director - Administrative Support
T. Brown, I&C/Electrical Maintenance Supervisor (Unit 1)
G. Campbell, Mechanical Maintenance Supervisor (Unit 2)
*J. Chase, Manager - Operations
G. Cheatham, Manager - Environmental and Radiation Control
J. Cook, Senior Specialist - Environmental and Radiation Control
R. Creech, I&C/Electrical Maintenance Supervisor (Unit 2)
*C. Dietz, General Manager - Brunswick Nuclear Project
*W. Dorman, QA - Supervisor
K. Enzor, Director - Regulatory Compliance
W. Hatcher, Security Specialist
A. Hegler, Superintendent - Operations
R. Helme, Director - Onsite Nuclear Safety - BSEP
*M. Hill, Manager - Administrative and Technical Support
*B. Hinkley, Manager - Technical Support (Acting)
J. Holder, Manager - Outages
P. Hopkins, Director - Training
P. Howe, Vice President - Brunswick Nuclear Project
L. Jones, Director - QA/QC
D. Novotny, Senior Regulatory Specialist
G. Oliver, Manager - Site Planning and Control
*R. Poulk, Senior NRC Regulatory Specialist
*C. Treubel, Acting Manager - Maintenance
L. Tripp, Radiation Control Supervisor
V. Wagoner, Director - IPBS/Long Range Planning
J. Wilcox, Principle Engineer - Operations
B. Wilson, Engineering Supervisor

Other licensee employees contacted included technicians, operators, and engineering staff personnel.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on April 20, 1984, with those persons indicated in paragraph 1 above. Meetings were also held with senior facility management periodically during the course of this inspection to discuss the inspection scope and findings.

3. IE Bulletin Followup (92703)

(Closed) IEB 79-25, Failures of Westinghouse BFD Relays in Safety-Related Systems. The inspector reviewed the licensee's response of December 5, 1979, which stated "Westinghouse type BFD relays are not being used at Brunswick Steam Electric Plant, nor are they being maintained in stores for use as spares." Based on the response, this item is considered closed.

(Closed) IEB 79-26, Boron Loss from BWR Control Blades. Briefly, IEB 79-26 stated that during the destructive examination of a control blade from an operating Boiling Water Reactor (BWR) performed in a hot cell in 1978-79, it was discovered that there was cracking of the absorber tubes and some loss of boron carbide (B4C) from the tubes. Additional hot cell examinations of absorber tubes from other operating reactors have also shown cracking and B4C loss. The mechanism has been identified as swelling of the boron carbide under irradiation and subsequent stress corrosion cracking of the tube.

The licensee responded to IEB 79-26 in three letters dated January 3, 1980, describing activities for items 1 and 2 of the bulletin, September 25, 1980, addressing item 3 describing special testing that was performed to verify shutdown margins, and April 13, 1981, addressing the last requirement of the bulletin, item 4, which involved destructive testing of irradiated control rods.

The inspector reviewed the licensee's responses and conducted interviews with regional NRC staff and licensee staff and concluded that the responses were complete and satisfied the requirements of the bulletin. This item is considered closed.

(Closed) IEB 80-03, Loss of Charcoal from Standard Type II, 2 Inch, Tray Absorber Cells. The inspector reviewed the licensee's response of March 21, 1980, and found it satisfactory. PT-15.1, Standby Gas Treatment System Filter Test and PT-21.5, Control Room Emergency Filtration System Test, were reviewed and determined to contain visual inspections for charcoal as specified by ANSI N510-1975. These inspections were considered adequate to substantiate the licensee's position. Interviews with the responsible system engineer indicated more recent inspections uphold earlier predictions that tray absorber cell integrity was not a problem.

(Closed) IEB 80-13, Cracking in Core Spray Spargers. The inspector has reviewed the licensee's response of January 26, 1983, and found it satisfactory. Briefly, the response states that core spray spargers were inspected and that no cracking was noted. Unit 2 core spray spargers are currently undergoing inspections. Inspectors have and will continue to follow these efforts through the use of the licensee's remote video cameras. The implementing PT-90.1, was reviewed and determined to adequately incorporate bulletin requirements for the inspection. This item is considered closed.

(Closed) IEB 80-14, Degradation of BWR Scram Discharge Volume (SDV) Capability. The licensee responded to IEB 80-14 in a letter dated July 21, 1980, which supplied answers to all listed questions. The inspector reviewed the response and found it satisfactory. In Item 3 of the response, the inspector found that the commitments made were located in procedures different than those specified, i.e., Periodic Testing of SDV Vent and Drain Valves, was found in PT-1.1.10 not 2.2.1, and Position Verification of the Vent and Drain Valves, was found in OP-8 not OP-7. The inspector had no questions and considers this item closed.

(Closed) IEB 82-04, Deficiencies in Primary Containment Electrical Penetrations Assemblies. The licensee responded to IEB 82-04 in a February 16, 1984 letter which stated, "The Brunswick station does not have the Bunker Ramo electrical penetrations, referenced in the bulletin, installed, in stock, or planned for future installation." The inspector reviewed the licensee's response and actions and had no questions. This item is considered closed.

(Closed) IEB 83-03, Check Valve Failures in Raw Water Cooling Systems of Diesel Generators. The licensee responded to IEB 83-03 in a letter dated June 10, 1983, which stated that the specific type of check valve (Crane) was not used in the diesel generator cooling system. The maintenance history and revised ASME XI inspection requirements for the TECHNO check valves used in the plant was provided, as requested. The post maintenance response required by the bulletin was issued by the licensee on December 13, 1983, and stated that "Periodic testing of the valves has been incorporated in Plant Procedure MI-10-521 I, and the initial inspections were completed on November 13, 1983. The valves were disassembled and all internal components appeared to be functioning properly with no evidence of deterioration. They were inspected in the presence of plant ISI personnel with cleanliness verified by QA prior to reassembly." The licensee submitted a supplemental response on January 16, 1984, to clarify the December 13, 1983 response on the surveillance frequency.

The inspector reviewed the licensee's responses and found that they met the requirements of the bulletin. Also reviewed, was maintenance instruction. The inspector made editorial comments to maintenance personnel regarding MI-10-521 I, to which they were receptive. Otherwise, the procedure appeared technically adequate. This item is considered closed.

(Closed) IEB 83-05, ASME Nuclear Code Pumps and Spare Parts Manufactured by the Hayward Tyler Pump Company. The licensee response to IEB 83-05, dated August 8, 1983, stated that Hayward Tyler pumps or spare parts were not in use at Brunswick. The inspector reviewed the response and the licensee's actions and considered them to satisfactorily meet the requirements of the bulletin. This item is considered closed.

(Closed) IEB 83-06, Nonconforming Materials Supplied by Tube-Line Corporation Facilities at Long Island City, New York; Houston, Texas; and Carol Stream, Illinois. The licensee responded to IEB 83-06 in a letter dated

November 18, 1983, which stated that based on the investigation performed of construction, operation, vendor, purchasing and receiving, it was determined that no Tube-Line material has been purchased or received by BSEP. Furthermore, the licensee provided additional information regarding the general concerns on the level of receipt inspection verification performed by QA organizations and made a commitment to investigate ways of improving existing programs.

The inspector reviewed the response and found it satisfactory. The scheduled QA investigation was found to have been complete with results and recommendations to be forwarded to the NRC by June 1, 1984. The inspector will follow-up to verify the response is issued to the NRC on the aforementioned date (IFI 324/84-08-01 and 325/84-08-01) This bulletin is considered closed.

(Closed) IEB 83-08, Electrical Circuit Breakers with an Undervoltage Trip Feature in Use in Safety-Related Applications Other Than the Reactor Trip System. The licensee responded to IEB 83-08 in a letter dated March 20, 1984, which stated, based on in-plant investigation and searches of stocks and documents, that it had been determined that the components identified by the bulletin were not in use at Brunswick.

The inspector reviewed the response and licensee actions to meet bulletin requirements and has concluded that the bulletin has been satisfied. This item is considered closed.

(Closed) IEB 81-03, Flow Blockage of Cooling Water to Safety System Components by Corbicula Sp. (Asiatic Clam) and Mytilus Sp. (Mussel). The licensee noted in his responses (Serials No. 81-892 and 83-387 of May 26, 1981 and February 10, 1983, respectively) that the Asiatic Clam is primarily a fresh water mollusk and is not suited to the brackish cooling system at BSEP. The licensee also noted however, that Mytilus (Mussel), oysters, barnacles, hydrozoans, and blood arks (Anadara Ovalis) are found in circulating water and service water system piping. To preclude flow blockage of the subject systems and components, the licensee has implemented a program of inspections and routine chlorination as methods of detection and control of shellfish growth. The Fire Protection System at BSEP uses well water and is therefore not affected by any of the shellfish problems.

4. Licensee Action on Previous Inspection Findings (92702)

(Closed) Deficiency (325/78-11-01), Licensee submitted LERs late. At the time of the report, LERs were being issued from the corporate office. LERs are now issued by the plant general manager. The factors which contributed to the referenced events are no longer applicable. The inspector reviewed RCI-06.1, Licensee Event Reports and Special Reports Identification, Investigation, Preparation and Submittal, to assess the licensee's ability to issue LERs in a timely manner. The inspector considers the licensee's system adequate to identify and submit LERs as required. This item is closed.

(Closed) Infraction (325/78-12-01), Facility Change Without a Written Safety Evaluation. The infraction involved installation of a mechanical jumper in a radwaste system without performing a 10 CFR 50.59 evaluation. Procedure OG-8, Guidelines for Preparation of Mechanical Jumper Procedure, requires a safety analysis (50.59) be performed before a mechanical jumper is used on any system that is either listed in Technical Specifications or on any contaminated system. Furthermore, AI-59, Jumpering, Wire Removal and Designated Jumper, requires a 10 CFR 50.59 evaluation for jumper and wire removals on systems which are inoperable. If a Safety/Technical Specification system is considered operable, AI-59 does not apply and a plant modification must be submitted per engineering procedure ENP-03. ENP-03 requires a 10 CFR 50.59 evaluation be performed as a part of each modification package. The inspector considers that the licensee has incorporated sufficient administrative controls to prevent reoccurrence of this and similar types of events. This item is closed.

(Closed) Infraction (325/79-30-01), Inadequate Limitations on Recirculation Pump Restart. The inspector verified that operating procedure OP-2, Reactor Recirculation System, incorporates the limitations committed to in the Licensee's Response to Infraction dated October 16, 1979. These precautions and limitations are considered adequate to prevent power transients of the nature which would cause reactor scrams. This item is closed.

(Closed) Deficiency (324/80-24-01 and 325/80-27-01), Failure to Provide Complete Test Requirements and Instructions Including Testing of One Fire Pump and a Total of 20 Motor Operated Valves (MOV) Loads via D/G Load Sequencer. The inspector verified that Diesel Generator Actual Loading Test procedure PT-12.1.1 and PT-12.1.2 require that the normal and alternative fire pump motor breakers trip upon initiation of a LOCA signal and reclose after 20 seconds, at which time the motor driven fire pump is manually started. Furthermore, these procedures have been revised to manually start a pump such as the conventional service water pump to simulate the loading of 20 MOVs loads which can not be tested without adversely affecting the plant operations. The revised procedures adequately address the inspector's concerns and, hence, these items are considered closed.

(Closed) Violation (324/81-20-04 and 325/81-20-03), PNSC Review of Temporary Procedure Change Greater Than 14 Days. See closeout of Violation 325/83-10-01 in this report. This item is closed.

(Closed) Violation (324/81-24-01), Failure to Adhere to Technical Specification 3.3.2, Limiting Condition for Operation and Its Associated Action Statement. This item was considered as a precursor to an event occurring December 28, 1981, for which a civil penalty was imposed. See violation 325/82-02-01, closed out elsewhere in this report. This item is closed.

(Closed) Violation (324/81-28-02 and 325/81-28-02), Failure to Have Temporary Procedure Change Reviewed by PNSC and Approved by General Manager Within 14 Days of Implementation. See closeout of Violation 325/83-10-01 in this report. This item is closed.

(Closed) Violation (324/82-01-01), Failure to Take Reactor Coolant Samples. The failure to identify the need to take additional samples on December 18, 1981, was attributed to not immediately calculating an I-131 dose equivalent because of the Iodine constituents was masked by other isotopes. Procedure E&RC-1210, Determination of Radioiodine, Revision 8, Step 3.3, requires an initial I-131 dose equivalent to be calculated using isotopes which are identified. Furthermore, step 6.3 requires supervision be notified if calculated value exceeds 0.1 microcuries per gram. This value is one half of technical specification threshold for requiring additional sampling. These controls appear adequate to prevent reoccurrence.

The failure to obtain samples on January 18, 1982, was due to operations personnel failing to notify chemistry to take samples. Operating Instruction, OI-03, Periodic Testing and Daily Surveillance Report, Revision 35, page 22, requires each shift to evaluate need to have reactor coolant samples be taken pursuant to Technical Specification 4.5.5-1. This should prevent reoccurrence of similar events. This item is closed.

(Closed) Violation (325/82-02-01), Proposed Civil Penalty for Failing to Meet Requirements When Low Water Level Instrument Became Inoperable. The inspector verified that the following items have been completed as committed:

OI-03, Periodic Testing and Daily Surveillance Report, has been revised to require comparison between similar instrument indications. Each comparison specifies an acceptance range that similar instrumentation indication can vary from one another as well as a signature documenting the comparison was successful. Technical Specification references have also been added.

A new procedure, OI-18, Definition of Instrument Channels and Trip Systems for Selected Instruments, has been issued to define what instruments comprise a trip channel and what action is to be taken if an instrument is inoperable.

OI-04, LCO Evaluation and Follow-up, has been revised to require a second verification of all trouble tickets to further ensure that all inoperable components requiring LCOs are identified.

These items, along with the training provided in response to this item, as well as the procedure verbatim compliance training provided as part of the Brunswick Improvement Program, should be sufficient to prevent similar failure to meet limiting conditions for operation associated with the reactor protection system, the containment isolation system, and the emergency core cooling system instrument Technical Specifications. This item is closed.

(Closed) Violation (324/82-05-01 and 325/82-05-01), Five examples of Failure to Implement and/or Follow Procedures. The inspector verified that annunciator procedure APP A-03 1-10, periodic test procedure PT-10.1.1 and operating procedures OP-02 and OP-17, have been revised as committed.

Surveillance requirement for containment pressure instrument CAC-PI-4176, is now contained in PT-01.14 instead of OI-03. The referenced emergency instruction, EI-10, has been deleted and appropriate information has been placed in OP-02. Operating procedures and annunciator procedures have been totally rewritten as part of the Brunswick Improvement Program. This item is closed.

(Closed) Violation (325/82-05-03), Failure to Take Out an LCO when SBLC Heat Tracing Found Inoperational. At the time, the licensee reviewed this as an isolated event. Personnel involved in the event were counseled. Response dated August 16, 1982, to violations issued in report 82-02, committed to an independent second verification of trouble tickets. Operating Instruction OI-04, LCO Evaluation and Followup, Revision 15, implements this by stating the shift operating supervisor, senior control operator, or shift technical adviser initials block 24 on the trouble ticket with the shift foreman to document his review. This second independent review is considered as reasonable sufficient control to prevent reoccurrence of the heat tracing event. This item is closed.

(Closed) Violation (325/82-05-07), Surveillance and Maintenance Records for MSIV Not Retained. The licensee stated that no maintenance was performed, and hence, no records were generated. Hence, the licensee denied that part of the violation. The inspector has no further questions concerning that event. Personnel involved with local leak rate surveillance have been instructed to keep all test results including failures. This item is closed.

(Closed) Violation (324/82-10-01), Failure to Follow Procedure and Reclose RHR Service Water Pump Circuit Breaker. PT-8.2.6 was revised as committed to require double verification signoff that the breakers are returned to their correct position. In addition, a modification has been installed on both units to allow flushing of the lines without de-energizing the pump start circuit. This item is closed.

(Closed) Violation (324/82-10-04 and 325/82-10-04), Failure to Take Corrective Action After Repeated Failure of RHR Service Water Pressure Switches. The Work Order Tracking System (WOTS) is in place as stated in the licensee's response to violation dated May 24, 1982. In addition, such failures as described in the report can also be detected by use of the Nuclear Plant Reliability Data System. It appears that the licensee has sufficient controls in place to prevent reoccurrence. The licensee's response also committed to devise a permanent solution to correct the problem with these switches. This is being followed under IFI 325/82-10-03, which remains open. The subject item is closed.

(Closed) Violation (325/82-18-01), Two examples of failure to follow procedure: 1) clearance procedure; 2) inspector identified valve out of alignment. Item 1 was attributed to personnel error. The licensee's response to the violation, dated September 3, 1982, indicates that the involved individuals were counseled. The response indicated (for item 2) that to assist the operator in identifying out-of-position valves when

reviewing the control panel, all safety-related valves have their normal position indicated on the panel next to each respective valve. The inspector verified that this has been accomplished. Exact cause for the specific valve in question being out of position was not determined. These measures appear adequate to prevent reoccurrence for item 1 and preclude mispositioned valves on the control panel from going undetected for a prolonged time. This item is closed.

(Closed) Violation (324/82-25-03 and 325/82-25-02), Failure to Implement and Maintain GPs and OPs and a Failure of Procedures to Meet the Format of ANSI N18.7-1976. As part of the Brunswick Improvement Program, operating procedures (OP) and general plant procedures (GP) have been reviewed and revised in accordance with the referenced standard. In general, the procedure upgrade resulted in incorporating: 1) references from which the procedure was developed; 2) procedural steps for infrequent operations, and 3) additional prerequisites and precautions. The inspector reviewed specific items mentioned in the report. Resolution of these are as follows:

- a. Independent verification not performed in body of procedure - Components which are independently verified as part of the initial system lineup are sometimes manipulated in accordance with planned evolutions in the procedure. When the planned evolution is complete, the components are returned to their standby configuration. Normally, the last step in the planned evolution will require that the system be returned to standby in accordance with the standby section. This standby section requires independent verification of component position as deemed necessary.
- b. OPs do not address activities referenced in GPs - This has been addressed by either clarifications in the GPs or by inclusion of infrequent operations into procedure sections of the OPs.
- c. Different vessel level zero references utilized - The same vessel level zero point was used for upgraded procedures.
- d. Procedure for starting motor driven fire pump - Item incorporated into OP-41.
- e. Initial condition less conservative than Technical Specification - OP-41 changed to reflect Technical Specification minimum tank levels for demineralized and fire protection water tanks.
- f. GP-1 does not require OP-22 be performed in preparation for startup. A separate operating procedure OP-22, was considered not necessary. OP-22 was cancelled. Operation is addressed in GP-02 step 5.1.17 and initiation of Rod Worth Minimizer is covered in operator training and PT-01.6.2. PT-01.6.2, Rod Worth Minimizer System, is performed within 24 hours prior to rod withdrawal for startup as verified by step 5.1.4 of GP-01.

- g. Valve list in OI-10, MP-14, and PT-20.3 are not consistent. The list in OI-10 and MP-14 has been deleted. PT-20.3 is now based on ENP-16, Procedure for Administrative Control of Inservice Inspection Activities.
- h. Valves E21-V17, V18 and B21-F008, not in procedure. The latter has been added to OP-01. The others are listed in OP-18.

The licensee's response to the violation, dated September 7, 1982, stated that to assure that operating procedures are reviewed and revised as required to reflect plant modifications or changes, an operations engineer has been assigned the responsibility for all procedure changes. The licensee has assigned an operations engineer to each unit. In accordance with ENP-03, an operations engineer must certify procedure changes have been made before a modification can be declared operational.

As part of the routine inspection program, the inspector has observed implementation and reviewed numerous sections of the upgraded procedures. No generic problems or deficiencies have been noted with the upgraded procedures. The few problems found with the procedures are considered to be isolated events. This item is closed.

(Closed) Violation (324/82-30-03 and 325/82-30-03), Failure to Follow FP-14. Response dated October 6, 1982, indicated that FP-14 was not adequately written in that sufficient guidance was not provided regarding the intent of the fire inspection. Clarification has been added to the procedure to require any flammable item found be identified as an item which could adversely affect the fire protection status. This action is considered sufficient to preclude recurrence. This item is closed.

(Closed) Violation (325/82-30-04), Failure to Follow MI-10-25. The licensee has held meetings with site personnel to address quality of operation and verbatim compliance. The inspector attended one session. In addition, verbatim compliance has been incorporated as a topic in new employee training. This item is closed.

(Closed) Violation (324/83-10-01 and 325/83-10-01), Failure to establish adequate procedure for tracking temporary procedure changes requiring permanent procedure revision. Administrative procedure section 5.5.3, requires the following:

- assignment of a temporary revision by number
- logging of the temporary revision onto tracking form (BESP Form 14)
- copy of the tracking form showing outstanding temporary revisions to be presented to Daily Coordination meeting.

The assignment of a unique number of each temporary revision and review by Daily Coordination Meeting members of outstanding items should be sufficient to prevent recurrence. This item is closed.

(Closed) Violation (324/83-20-01 and 325/83-20-01), Failure to Have a Surveillance Procedure. Periodic test procedure PT-02.2.5, has been issued to test that the mechanical vacuum pumps stop and isolate on a main steam line high radiation signal. Licensee attributed the failure to have a surveillance procedure due to an oversight because the item being required is in a footnote in the LCO table 3.3.2-1, instead of the surveillance table 4.3.2-1. The licensee has reviewed other sections of the Units 1 and 2 Technical Specification for similar type items. None were found. The inspector considers the licensee's response to be adequate. The item is closed.

(Closed) Deviation (324/82-01-04), Potential Loss of Redundancy Due to Common Mode Flooding Between North Core Spray and North Residual Heat Removal Systems. The licensee closed the pipe chase between the two areas. Signs have been placed on the covers indicating the FSAR requirement and shift foreman permission is required to remove the cover. The inspector verified covers in place on both units. This item is closed.

(Closed) Deviation (324/82-05-02 and 325/82-05-02), High Range Noble Gas Monitors Not Calibrated Quarterly. Maintenance instruction MI-03-15 T was issued to perform quarterly calibrations. The inspector reviewed the records and has no further concerns. The subject temporary monitors have been replaced by new increased range monitors. The inspector verified that PT-4.3.5 PC and PT-4.3.8 PC have been issued and scheduled to perform calibration on the new high range monitors. This item is closed.

(Closed) Unresolved Item (324/82-05-05), SRV Solenoid Installed With Metal Plug in Exit Port Causing SRV to Fail to Close. The licensee could determine no information as to how, when or who was involved with the plug. Because the licensee has in place a procedure which will test the opening and closing of the safety relief valve after installation, it is considered that this is sufficient to prevent reoccurrence. This item is closed.

(Closed) Inspector Followup Item (325/78-06-01), Verify replacement of red rubber gaskets in the RHR SW system. The inspector verified that gaskets are installed between flanges on the residual heat removal service water pump suction and discharge piping on the 50' elevations of Units 1 and 2 reactor buildings. This item is closed.

(Closed) Inspector Followup Item (325/78-09-03). Verify that checklists on valve lineups for RHR system are clarified to show status of individual components. The inspector verified that separate valve sign-offs are provided in operating procedure OP-17, Residual Heat Removal System, and OP-46, Service Water System, for the components identified in the report. Similar concerns for periodic test procedures associated with these systems have also been satisfactorily resolved. This item is closed.

(Closed) Inspector Followup Item (324/81-12-02 and 325/81-12-02). RCIC automatic switchover. Plant modifications 81-086 and 81-087, installed this function of Unit 1 and 2, respectively. Inspection of this was performed in

conjunction with TMI Item II.K.3.22 and documented in report 84-07. This item is closed.

(Closed) Inspector Followup Item (325/81-12-04). Level instruments operational in modes 4 and 5. Licensee memorandum No. B09-12111 dated August 10, 1981, documents the licensee position that vessel level instrumentation need not be required in Technical Specifications for conditions 4 and 5 to detect decreasing vessel level before the required Emergency Core Cooling System instruments initiate corrective action automatically. This item is considered closed.

(Closed) Inspector Followup Item (325/81-12-05). Request relief from Technical Specification 3.6.6.3. On June 19, 1981, licensee amendment No. 59 was issued to License No. DPR-62, to allow Unit 2 to operate in condition 1 with containment oxygen concentration exceeding 4% for the period commencing at 0630 hours on June 19, 1981. This item is closed.

(Closed) Inspector Followup Item (324/81-14-04). Licensee to determine cause for recirculating pump run up on 6/22/81. A review was performed. No conclusive cause could be determined. This item is closed.

(Closed) Inspector Followup Item (325/81-24-01). Excess leakage from RHR booster pump 1B. The pump seals on Unit 1 and Unit 2 residual heat removal booster pumps A, B, C, and D have been replaced with an improved seal type. This item has been satisfactorily resolved and is closed.

(Closed) Inspector Followup Item (324/81-27-02). Service water leak on 50 ft. spills 30,000 gallons into RHR and HPCI room floor. The event resulted from use of temporary mechanical jumpers. The inspector reviewed OG-8, Guidelines for Preparation of Mechanical Jumper Procedure, and has no further questions. This item is closed.

(Closed) Inspector Followup Item (324/81-31-01 and 325/81-31-01). Committed to remove uncontrolled drawings from control room. The referenced uncontrolled drawings have been removed from the control room. The aperture card file in the control room has been expanded to include those which were earlier available only as uncontrolled full size prints and which were deemed necessary to be in control room. Aperture cards are controlled drawings. In addition, modification packages are available in the control room area which control drawings which have not been issued as aperture cards. This item is closed.

(Closed) Inspector Followup Item (324/81-31-04 and 325/81-31-04). Breezeway and loading dock frisking booth construction to be complete. The subject booths have been constructed. Additional shielding has been placed around frisking booths in radwaste. This item is closed.

(Closed) Inspector Followup Item (324/81-31-05 and 325/81-31-05). Evaluate commitment and implementation of whole body frisking requirement after leaving contaminated areas. The licensee has revised E&RC-0209, Use of

RM-14 with HP-210 Probe for Frisking, to state, "A whole body frisk is required at the first RM-14 unit a worker encounters upon exiting a contaminated area." Signs have been posted at frisking stations to remind personnel of the requirement. This item is closed.

(Closed) Inspector Followup Item (324/82-01-03). Licensee should enforce administrative controls on HPCI room doors. The licensee has placed signs on the doors to warn all personnel of the necessity to keep doors closed. Operating instruction OI-03, Periodic testing and Daily Surveillance Report, Revision 35, pages 101 and 115, require the auxiliary operator to check once per shift that both doors are shut and one is allowed open if maintenance is in progress. This appears adequate to address the inspector's concern. This item is closed.

(Closed) Inspector Followup Item (325/82-05-05). Failure to take reactor coolant sample for iodine analysis following power reduction - followup per response to Violation 324/82-01-01. The licensee included this item in response to the violation as committed. See closeout of 324/82-01-01 elsewhere in this report. This item is closed.

(Closed) Inspector Followup Item (324/82-05-09 and 325/82-05-09). LCO fails to reference all applicable Technical Specifications. Operating instruction OI-04, LCO Evaluation and Followup, revision 15, requires an LCO shall be established for each section of the Technical Specifications where the inoperable component is listed. This adequately addresses the inspector's concerns. This item is closed.

(Closed) Inspector Followup Item (324/82-08-08 and 325/82-08-08). Licensee to evaluate training in use of two step-off pads. The licensee has included a handout of proper use of double step-off pads as part of their general employee training program. This item is closed.

(Closed) Inspector Followup Item (324/82-10-07 and 325/82-10-07). Licensee committed to replace steam flow pressure switches during 1982 refueling outages to prevent Group 1 isolations after nearly every scram. This item is applicable only to Unit 2 (324/82-10-07). The referenced flow switches have been replaced as committed. This item is closed.

(Closed) Inspector Followup Item (325/82-11-01). Review investigation findings associated with circuit 19 breaker being de-energized. The licensee concluded that the breaker was probably tripped instead of turned off. The breaker was removed and bench tested. It was the licensee's opinion that the breaker could have been reset by the person involved with little or no noticeable effort. Hence, it appeared that it was off when it was actually tripped. The breaker was replaced with one of a different manufacturer. No unexplained tripping has occurred since that event. The licensee continues to check the position of circuit 19 and similar circuit 21 breakers for both units twice per shift. This item is closed.

(Closed) Inspector Followup Item (324/82-11-02 and 325/82-11-03). Review investigation findings associated with diesel generator No. 3 cooling water valve being closed. Review training for AOs. The cause for the mispositioned valve could not be determined. The inspector considers that the licensee performed an adequate investigation into the event. Training Instruction TI-104, Related Technical Training and On-the-Job Training for Auxiliary Operators, requires checkout and knowledge of the diesel generator engine cooling system and knowledge of conditions that will result in diesel trouble alarm. This is considered to adequately address the inspector's concern about auxiliary operator knowledge of the diesel generator cooling system. This item is closed.

(Closed) Inspector Followup Item (324/82-11-04). Review circumstances surrounding closure of valve E41-F003 after periodic testing. The licensee conducted an investigation into the event including simulated performance of PT-2.1.2P with the technicians involved. No conclusive evidence could be obtained to account for the closure of the instrument isolation valve. The inspector considers that the licensee made reasonable effort to determine the cause of the closed valve. This item is closed.

(Closed) Inspector Followup Item (325/83-20-04). Permanent procedure PT-02.2.5 is being written to ensure future periodic testing of mechanical vacuum pumps function. The current revision, Rev. 2, of the aforementioned procedure, satisfactorily tests the isolation function. This item is closed.

5. Unresolved Items

Unresolved items were not identified during this inspection.

6. Operational Safety Verification (71707, 71710)

The inspector verified conformance with regulatory requirements throughout the reporting period by direct observations of activities, tours of facilities, discussions with personnel, reviewing of records and independent verification of safety system status. The following determinations were made.

- Technical Specifications. Through log review and direct observation during tours, the inspector verified compliance with selected Technical Specifications Limiting Conditions for Operation.
- By observation during the inspection period, the inspector verified the control room manning requirements of 10 CFR 50.54(k) and the Technical Specifications were being met. In addition, the inspector observed shift turnovers to verify that continuity of system status was maintained. The inspector periodically questioned shift personnel relative to their awareness of plant conditions.

- Control room annunciators. Selected lit annunciators were discussed with control room operators to verify that the reasons for them were understood and corrective action, if required, was being taken.
- Monitoring instrumentation. The inspector verified that selected instruments were functional and demonstrated parameters within Technical Specification limits.
- Safeguard system maintenance and surveillance. The inspector verified by direct observation and review of records that selected maintenance and surveillance activities on Safeguard systems were conducted by qualified personnel with approved procedures, acceptance criteria were met and redundant components were available for service as required by Technical Specification.
- Major components. The inspector verified through visual inspection of selected major components that no general condition exists which might prevent fulfillment of their functional requirements.
- Valve and breaker positions. The inspector verified that selected valves and breakers were in the position or condition required by Technical Specifications for the applicable plant mode. This verification included control board indication and field observation (Safeguard Systems).
- Fluid leaks. No fluid leaks were observed which had not been identified by station personnel and for which corrective action had not been initiated, as necessary.
- Plant housekeeping conditions. Observations relative to plant housekeeping identified no unsatisfactory conditions.
- Radioactive releases. The inspector verified that selected liquid and gaseous releases were made in conformance with 10 CFR 20, Appendix B, and Technical Specification requirements.
- Radiation Controls. The inspector verified by observation that control point procedures and posting requirements were being followed. The inspector identified no failure to properly post radiation and high radiation area.
- Security. During the course of these inspections, observations relative to protected and vital area security were made, including access controls, boundary integrity, search, escort, and badging.

No violations or deviations were identified.

7. Surveillance Testing (61726)

The surveillance tests were analyzed and/or witnessed by the inspector to ascertain procedural and performance adequacy.

The completed test procedures examined were analyzed for embodiment of the necessary test prerequisites, preparations, instructions, acceptance criteria and sufficiency of technical content.

The selected tests witnessed were examined to ascertain that current, written approved procedures were available and in use, that test equipment in use was calibrated, that test prerequisites were met, system restoration was completed and test results were adequate.

The selected procedures attested conformance with applicable Technical Specifications, they appeared to have received the required administrative review and they apparently were performed within the surveillance frequency prescribed.

The inspector employed one or more of the following acceptance criteria for evaluating surveillance tests.

10 CFR
ANSI N18.7
Technical Specifications

Of the areas inspected, no violations or deviations were identified.

8. Maintenance Observations (62703)

Maintenance activities were observed and reviewed throughout the inspection period to verify that activities were accomplished using approved procedures or the activity was within the skill of the trade and that the work was done by qualified personnel. Where appropriate, limiting conditions for operation were examined to ensure that, while equipment was removed from service, the Technical Specification requirements were satisfied. Also, work activities, procedures, and work requests were reviewed to ensure adequate fire, cleanliness and radiation protection precautions were observed, and that equipment was tested and properly returned to service. Acceptance criteria used for this review were as follows:

Maintenance Procedure
Technical Specifications

Outstanding work requests that were initiated by the operations group for Units 1 and 2 were reviewed to determine that the licensee is giving priority to safety-related maintenance and not allowing a backlog of work items to permit a degradation of system performance.

Of the areas inspected, no violations or deviations were identified.

9. Followup of Plant Transients and Safety System Challenges (93702)

During the period of this report, a followup on plant transients and safety system challenges was conducted to determine the cause; ensure that safety systems and components functioned as required; corrective actions were

adequate; and the plant was maintained in a safe condition.

At 2308 hours on March 31, 1984, Unit 1 reactor experienced a low level scram from 97% of full power due to reduced feedwater flow. Plant response included the expected main steam line isolation of high pressure coolant injection (HPCI) and reactor core isolation cooling (RCIC) systems for level control. Reactor pressure was controlled by manually opening safety relief valve (SRV) A and E as specified by emergency procedure. Maximum reactor pressure was approximately 1040 psig. During the event, HPCI speed controller malfunctioned due to a broken wire and caused a system isolation. The SRV A acoustical monitor failed to indicate that the valve had opened; however, other indications such as tailpipe temperature recorder showed that the valve had responded properly. The licensee has checked the acoustic monitor circuit outside the drywell and found no problem. Because entry into the drywell would require entry into cold shutdown condition, the licensee has elected to forgo repair on the monitor and use the tailpipe temperature sensor as allowed by Technical Specification 3.3.5.3.

Cause of the event was attributed to loss of instrument air to the flow control valves in the condensate-feedwater system. On loss of air, the valves began to drift close, thereby reducing feedwater flow to the vessel. Isolation of instrument air to the valves resulted from a normally open valve being closed at the time instrument air was being transferred between Unit 1 and Unit 2. Restart of the unit was delayed while a leaking feedwater heater was repaired.

While the unit was shutdown, 1B residual heat removal motor was observed to be sparking. The motor was replaced by a similar one from Unit 2. Inspection of the motor revealed a small hole in the stator winding which apparently was intermittently arcing to ground. Examination of the stator coils indicated no mechanism for insulation failure. The unit resumed operation on April 8, 1984.

No violations or deviations were identified.

10. Review of Licensee Event Reports (92700)

The below listed Licensee Event Reports (LERs) were reviewed to determine if the information provided met NRC reporting requirements. The determination included adequacy of event description and corrective action taken or planned, existence of potential generic problems and the relative safety significance of each event. Additional in-plant reviews and discussions with plant personnel, as appropriate, were conducted for those reports indicated by an asterisk. These reports are considered closed.

Unit 1

1-81-53 (3L) and Supplements	1B Reactor Recirculation Pump tripped concurrent with receipt of pump ATWS High Reactor Pressure/Low Level trip annunciator.
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1-82-119 (3L) During plant operation, APRM F declared inoperable due to
and erratic output signal from input LPRM 28-21C. At the time,
Supplements APRM B was inoperable, and a half scram on RPS trip
channel B was manually inserted.

Unit 2

2-81-143 (3L) Nordberg Diesel Generator, F5-1316-HS6, experiences erratic
and load control.
Supplement

2-83-81 (3L) The isolating function of "C" TIP guide tube primary contain-
and ment isolation ball valve became inoperable because the TIP
Supplement machine probe would not fully retract from the core.

No violations or deviations were identified.