UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
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January 23, 2008

Mr. Benjamin C. Waldrep
Vice President
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Brunswick Steam Electric Plant
P.O. Box 10429
Southport, NC 28461

SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT - NRC COMPONENT DESIGN BASIS INSPECTION REPORT NOS. 05000325/2007006 AND 05000324/2007006

Dear Mr. Waldrep:

On December 14, 2007, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Brunswick Steam Electric Plant, Units 1 & 2 facilities. The enclosed inspection report documents the inspection findings, which were discussed on December 14, 2007, with you and other members of your staff.

The inspection examined activities conducted under your licenses as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your licenses. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, there were no findings of significance identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/
Binoy B. Desai, Chief
Engineering Branch 1
Division of Reactor Safety

Docket Nos.: 50-325, 50-324
License Nos: DPR-71, DPR-62

Enclosure: (See page 2)

Enclosure: Inspection Report 05000325, 324/2007006
w/Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-325, 50-324
License Nos.:	DPR-71, DPR-62
Report No.:	05000325/2007006 and 05000324/2007006
Licensee:	Carolina Power and Light (CP&L)
Facility:	Brunswick Steam Electric Plant, Units 1 & 2
Location:	8470 River Road SE Southport, NC 28461
Dates:	November 5, 2007 through December 14, 2007
Inspectors:	S. Rose, Senior Reactor Inspector (Team Leader) S. Rutledge, Acting Resident Inspector W. Lewis, Reactor Inspector J. Hamman, Reactor Inspector, in training G. Khouri, Reactor Inspector, in training K. Miller, Reactor Inspector, in training M. Shlyamberg, Contract Inspector G. Skinner, Contract Inspector
Approved by:	Binoy B. Desai, Chief Engineering Branch 1 Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000325/2007006, 05000324/2007006; 11/05/07 - 12/14/07; Brunswick Steam Electric Plant, Units 1 and 2; Component Design Basis Inspection.

This inspection was conducted by a team of five NRC inspectors, three NRC inspectors who were in training, one acting resident inspector, and two NRC contract inspectors. There were no findings of significance identified by the activities covered in this inspection. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, “Significance Determination Process” (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, “Reactor Oversight Process,” (ROP) Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

None

B. Licensee-Identified Violations

None

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R21 Component Design Bases Inspection (71111.21)

.1 Inspection Sample Selection Process

The team selected risk significant components and operator actions for review using information contained in the licensee's Probabilistic Risk Assessment (PRA). In general, this included components and operator actions that had a risk achievement worth factor greater than two or Birnbaum value greater than 1 $X10^{-6}$. The components selected were located within the Service Water (SW) system, suppression pool cooling system, High Pressure Coolant Injection (HPCI) system, Reactor Core Isolation Cooling (RCIC) system, Emergency Diesel Generator (EDG) support and electrical subsystems, 125Vdc battery system, and Startup Auxiliary Transformer (SAT) system. The sample selection included 21 components, five operator actions, and five operating experience items. Additionally, the team reviewed one modification by performing activities identified in IP 71111.17, "Permanent Plant Modifications," Section 02.02.a. and IP 71111.02, "Evaluations of Changes, Tests, or Experiments."

The team performed a margin assessment and detailed review of the selected risk-significant components to verify that the design bases have been correctly implemented and maintained. This design margin assessment considered original design issues, margin reductions due to modification, or margin reductions identified as a result of material condition issues. Equipment reliability issues were also considered in the selection of components for detailed review. These included items such as failed performance test results, significant corrective action, repeated maintenance, maintenance rule (a)1 status, RIS 05-020 (formerly GL 91-18) conditions, NRC resident inspector input of problem equipment, system health reports, industry operating experience and licensee problem equipment lists. Consideration was also given to the uniqueness and complexity of the design, operating experience, and the available defense in depth margins. An overall summary of the reviews performed and the specific inspection findings identified is included in the following sections of the report.

.2 Results of Detailed Reviews

.2.1 <u>Service Water Outlet Valve, SW-V-442</u>

a. <u>Inspection Scope</u>

The team reviewed Technical Specifications (TS), UFSAR, design drawings and calculations, vendor documentation, and plant procedures to verify the appropriateness of design assumptions, boundary conditions, and models, as well as the appropriateness of the licensee's analysis methods. The team verified that design assumptions and limitations were translated to operational and testing procedures. Plant personnel were interviewed and a component/system walk down was conducted to verify that potential degradation was being monitored and prevented. The system walk down also verified

that the observable material condition supports its design operation, and component configurations have been maintained consistent with design assumptions, the equipment was adequately protected from external events and relatively unaffected by recently installed security features. The team reviewed maintenance and corrective action history to verify that potential degradation was being monitored or prevented and that component replacement was consistent with qualification life. Modification installations were reviewed to ensure that design bases, licensing bases, and performance capability of the valve have not been degraded through alteration.

b. Findings

No findings of significance were identified.

.2.2 Nuclear Header to RHR Service Water Header Isolation Valve, SW-V104

a. Inspection Scope

The team reviewed TS, UFSAR, design drawings and calculations, vendor documentation, and plant procedures to verify the appropriateness of design assumptions, boundary conditions, and models, as well as the appropriateness of the licensee's analysis methods. The team verified that design assumptions and limitations were translated to operational and testing procedures. Plant personnel were interviewed and a component/system walk down was conducted to verify that potential degradation was being monitored and prevented. The system walk down also verified that the observable material condition supports its design operation, and component configurations have been maintained consistent with design assumptions, the equipment was adequately protected from external events and relatively unaffected by recently installed security features. The team also reviewed maintenance and corrective action history to verify that potential degradation was being monitored or prevented and that component replacement was consistent with qualification life. Modification installations were reviewed to ensure that design bases, licensing bases, and performance capability of the valve have not been degraded through alteration.

b. Findings

No findings of significance were identified.

.2.3 Nuclear Service Water Supply Valve, SW-V105

a. Inspection Scope

The team reviewed TS, UFSAR, design drawings and calculations, vendor documentation, and plant procedures to verify the appropriateness of design assumptions, boundary conditions, and models, as well as the appropriateness of the licensee's analysis methods. The team verified that design assumptions and limitations were translated to operational and testing procedures. Plant personnel were interviewed and a component/system walk down was conducted to verify that potential degradation was being monitored and prevented. The system walk down also verified that the observable material condition supports its design operation, and component configurations have been maintained consistent with design assumptions, the equipment was adequately protected from external events and relatively unaffected by recently

installed security features. The team also reviewed maintenance and corrective action history to verify that potential degradation was being monitored or prevented and that component replacement was consistent with qualification life. Modification installations were reviewed to ensure that design bases, licensing bases, and performance capability of the valve have not been degraded through alteration. The team reviewed control wiring diagrams to verify Motor Operated Valve (MOV) control logic was consistent with design bases. The team reviewed load flow and MOV voltage drop calculations to assess whether appropriate voltage values were used in thrust calculations. The team reviewed Motor Control Center (MCC) control circuit voltage drop calculations and related modifications to verify MOV control circuits had adequate voltage to operate when required.

b. Findings

No findings of significance were identified.

.2.4 Outboard Suppression Pool Purge Exhaust Valve, 1-CAC-V8

a. Inspection Scope

The team reviewed the Containment Atmospheric Control (CAC) Design Basis Documents (DBD), UFSAR, TS, and applicable plant drawings to identify the design bases requirements of the equipment. Calculations and vendor documents were reviewed to verify that appropriate engineering limits were used as inputs to design and test acceptance criteria. The team examined the machinery history of the outboard suppression pool purge exhaust valves to verify that design bases have been maintained. The team examined records and test data for both corrective and preventative maintenance, Local Leak Rate Testing (LLRT), Inservice Testing (IST), and applicable corrective actions to verify that potential degradation was being monitored, prevented, and corrected. The team verified the Preventative Maintenance (PM) history and schedule were consistent with vendor recommendations. The team also conducted a field walk down of the outboard suppression pool purge exhaust valves with the CAC system engineer to verify that the installed configuration was consistent with the design basis and plant drawings and assess the observable material condition.

b. Findings

No findings of significance were identified.

.2.5 Inboard Suppression Pool Purge Exhaust Valve, 1-CAC-V7

a. Inspection Scope

The team reviewed the CAC DBD, UFSAR, TS, and applicable plant drawings to identify the design bases requirements of the equipment. Calculations and vendor documents were reviewed to verify that appropriate engineering limits were used as inputs to design and test acceptance criteria. The team examined the machinery history of the inboard suppression pool purge exhaust valves to verify that design bases have been maintained. The team examined records and test data for both corrective and preventative maintenance, Air Operated Valve (AOV) diagnostic testing, LLRT, IST, and applicable corrective actions to verify that potential degradation was being monitored,

prevented, and corrected. The team verified the PM history and schedule were consistent with vendor recommendations. The team also conducted a field walk down of the inboard suppression pool purge exhaust valves with the CAC system engineer to verify that the installed configuration was consistent with the design basis and plant drawings and assess the observable material condition.

b. Findings

No findings of significance were identified.

.2.6 Minimum Flow Bypass Valves to Suppression Pool, 1/2-E11-F007A and 1/2-E11-F007B

a. Inspection Scope

The team reviewed the Residual Heat Removal (RHR) DBD, UFSAR, TS, and applicable plant drawings to identify the design bases requirements of the equipment. Calculations and vendor documents were reviewed to verify that appropriate engineering limits were used as inputs to design and test acceptance criteria. The team examined the machinery history of the minimum flow bypass valves to suppression pool to verify that design bases have been maintained. The team examined records and test data for both corrective and preventative maintenance, Motor Operated Valve (MOV) diagnostic testing, IST, and applicable corrective actions to verify that potential degradation was being monitored, prevented, and corrected. The team verified the PM history and schedule were consistent with vendor recommendations. The team also conducted a field walk down of the minimum flow bypass valves to suppression pool with the RHR system engineer to verify that the installed configuration was consistent with the design basis and plant drawings and assess the observable material condition. The team reviewed control wiring diagrams to verify MOV control logic was consistent with design bases. The team reviewed load flow and MOV voltage drop calculations to assess whether appropriate voltage values were used in thrust calculations. The team reviewed MCC control circuit voltage drop calculations and related modifications to verify MOV control circuits had adequate voltage to operate when required.

b. Findings

No findings of significance were identified.

.2.7 Suppression Pool Cooling Isolation Valves, 1/2-E11-F024B

a. Inspection Scope

The team reviewed the RHR DBD, UFSAR, TS, and applicable plant drawings to identify the design bases requirements of the equipment. Calculations and vendor documents were reviewed to verify that appropriate engineering limits were used as inputs to design and test acceptance criteria. The team examined the machinery history of the suppression pool cooling isolation valves to verify that design bases have been maintained. The team examined records and test data for both corrective and preventative maintenance, MOV diagnostic testing, IST, and applicable corrective actions to verify that potential degradation was being monitored, prevented, and corrected. The team verified the PM history and schedule were consistent with vendor recommendations. The team also conducted a field walk down of the suppression pool

cooling isolation valves with the RHR system engineer to verify that the installed configuration was consistent with the design basis and plant drawings and assess the observable material condition. The team reviewed load flow and MOV voltage drop calculations to assess whether appropriate voltage values were used in thrust calculations. The team reviewed MCC control circuit voltage drop calculations and related modifications to verify MOV control circuits had adequate voltage to operate when required.

b. Findings

No findings of significance were identified.

.2.8 Instrument Air Supply Isolation Valve, SA-V79

a. Inspection Scope

The team reviewed TS, UFSAR, design drawings and calculations, vendor documentation, and plant procedures to verify the appropriateness of design assumptions, boundary conditions, and models, as well as the appropriateness of the licensee's analysis methods. The team verified that design assumptions and limitations were translated to operational and testing procedures. Plant personnel were interviewed and a component/system walk down was conducted to verify that potential degradation was being monitored and prevented. The system walk down also verified that the observable material condition supports its design operation, and component configurations have been maintained consistent with design assumptions, the equipment was adequately protected from external events and relatively unaffected by recently installed security features. The team also reviewed maintenance and corrective action history to verify that potential degradation was being monitored or prevented and that component replacement was consistent with qualification life.

b. Findings

No findings of significance were identified.

.2.9 Service Air Compressor 1B, SA-1B-AIR-CMP

a. Inspection Scope

The team reviewed TS, UFSAR, design drawings and calculations, vendor documentation, and plant procedures to verify the appropriateness of design assumptions, boundary conditions, and models, as well as the appropriateness of the licensee's analysis methods. This review also verified that the process medium would be available and unimpeded during accident/event conditions to the extent necessary to support the equipment's safety functions. Electrical elementaries and wiring diagrams were reviewed to verify that energy sources, including those used for control functions, would be available and adequate during accident/event conditions to the extent necessary to support the equipment's safety functions. The team verified that design assumptions and limitations were translated into operational and testing procedures. Surveillance and testing data was reviewed to ensure the design basis was met by the installed and tested configuration and that acceptance criteria for tested parameters were supported by calculations or other engineering documents. Plant personnel were

interviewed and a component/system walk down was conducted to verify that potential degradation was being monitored and prevented. The system walk down also verified that the observable material condition supports its design operation, and component configurations have been maintained consistent with design assumptions, the equipment was adequately protected from external events and relatively unaffected by recently installed security features. Plant use of the component was reviewed to verify that component operation and alignments were consistent with design and licensing basis assumptions. Select component modifications were reviewed to ensure that performance capability had not been degraded through such modifications. The team reviewed maintenance and corrective action history to verify that potential degradation was being monitored or prevented and that component replacement was consistent with qualification life.

b. Findings

No findings of significance were identified.

.2.10 Steam Turbine Drive for High Pressure Coolant Injection Pumps, E41-C002

a. Inspection Scope

The team reviewed DBD, drawings, calculations, specifications, maintenance activities and surveillance procedures to verify the capability of the HPCI to perform its function during the events described in the UFSAR and in accordance with the requirements stated in the TS. Hydraulic calculations were reviewed to ensure design requirements for flow and pressure were translated as acceptance criteria for pump IST. HPCI cooling and lubrication were reviewed to verify that these sub-systems were adequately sized. Design change history, related corrective actions, and IST results were reviewed to assess potential component degradation and impact on design margins.

b. Findings

No findings of significance were identified.

.2.11 Reactor Core Isolation Cooling Pump Turbine Drive, E51-C002

a. Inspection Scope

The team reviewed DBD, drawings, calculations, specifications, maintenance activities and surveillance procedures to verify the capability of the RCIC to perform its function during the events described in the UFSAR and in accordance with the requirements stated in the TS. Hydraulic calculations were reviewed to ensure design requirements for flow and pressure were translated as acceptance criteria for pump IST. RCIC cooling and lubrication were reviewed to verify that these sub-systems were adequately sized. Design change history, related corrective actions, and IST results were reviewed to assess potential component degradation and impact on design margins.

b. Findings

No findings of significance were identified.

.2.12 Emergency Diesel Generators - EDG-1, EDG-2, EDG-3, and EDG-4 Auxiliary Systems

a. Inspection Scope

The team reviewed DBD, drawings, calculations, specifications, maintenance activities and surveillance procedures to verify the capability of the EDGs to supply onsite AC electrical power during design basis events. EDG cooling, lubrication, fuel consumption, and air start capabilities were reviewed to verify that these systems were adequately sized. Walk downs and interviews with plant personnel were performed to verify that the capability of the EDGs to perform their design basis function was being maintained.

b. Findings

No findings of significance were identified.

.2.13 Emergency Diesel Generator Building Exhaust and Backdraft Dampers

a. Inspection Scope

The team reviewed DBD, drawings, calculations, specifications, maintenance activities and surveillance procedures to verify the capability of the EDG building ventilation system during design basis events. EDG building Heating Ventilation and Air Conditioning (HVAC) calculations for heat load and ventilation capabilities were reviewed to verify that the ventilation system was adequately sized. Walk downs and interviews with plant personnel were performed to verify that the capability of the EDG building HVAC to perform their design basis function was being maintained. Additionally, walk downs were performed to verify that the EDG building HVAC exhaust and backdraft dampers were capable of allowing pressure to equalize between the interior and atmosphere during a tornado event as credited for in the analysis.

b. Findings

The team identified an Unresolved Item (URI) for failure to translate a key analytical assumption related to operation of the back draft and check dampers into specifications and ultimately into the installed hardware. The team's review of design calculation 0VA-0033, Tornado Analysis of Diesel Generating Building, Rev. 1 identified the following concerns:

- Assumption 7 of this calculation stated that the back draft/check dampers are assumed open in the normal outward flow direction during an atmospheric depressurization event associated with a tornado. The assumption also states that during the subsequent atmospheric repressurization associated with a tornado, the back draft/check dampers would open in the reverse direction to allow reverse inward flow when the Differential Pressure (dP) across damper exceeds 80 psf. There was no surveillance to verify the ability of the back draft/check dampers to open in reverse direction. Furthermore, the team's review of specification 226-002, Sheet Metal Work, Rev. 12; drawings SHW-D-10490, SHW P 2230 Backdraft Damper w/Extra Deep Frame, Rev. C and 9527-01-4283, Technocheck Valve, Rev. 0 (check damper); walk down observations; and interviews with plant personnel identified that the installed back draft and check dampers could not open in the

reverse direction. Therefore, conclusions of the calculation 0VA-0033 about the maximum dPs for the structures and the ductwork were not valid or conservative.

- Additionally, this calculation and the design specification failed to address the effects of the high dP predicted in this calculation on the EDG building HVAC hardware other than the ductwork (e.g., in-line fans, recirculation dampers, etc).

Progress Energy had not verified that the specified assumptions were translated into the procured and installed HVAC hardware for the EDG building. The analysis for the EDG building HVAC system did not assure that the critical analytical assumption were implemented; thus making it undetermined that the EDG building HVAC system, that serviced all four (4) EDGs for both units of Brunswick Nuclear Plant, would function during and following the design basis tornado. This condition has existed since original plant licensing. This finding was entered into the licensee's corrective action program as NCR 00259088 with actions to evaluate the ability of the EDGs actual installed equipment to satisfy the intended safety function during and following the design basis tornado event. This issue is identified as URI 05000325/2007006, 05000324/2007006-01, Capability of Emergency Diesel Generators to Meet Design and Licensing Requirements. This item is unresolved pending NRC review of the of the licensee's analysis of the effects of the as-built configuration on the EDG building HVAC's ability to satisfy the intended safety function during and following the design basis tornado event.

.2.14 125VDC Battery Chargers, 1-1A-1-125VDC-CHRGR, 1-1A-2-125VDC-CHRGR, 1-1B-1-125VDC-CHRGR & 1-1B-2-125VDC-CHRGR

a. Inspection Scope

The team reviewed the logic diagrams and control schematics to verify that the battery chargers satisfied the safety related application as delineated in the DBD. The control schematics were reviewed to verify operation and protection of the chargers under normal operating conditions. The team reviewed weekly, quarterly and yearly test procedures and results to verify that protective devices were appropriately sized and coordinated and to verify that the as found performance met the design basis requirements. The team reviewed battery charger voltage output, current output, and limitations to verify that the components were appropriately sized for system supply outputs. The team reviewed the degraded buss evaluation to verify that the components would respond appropriately. The team reviewed component replacement history to verify that replacement parts had been appropriately procured or dedicated for safety related use. The team reviewed system and component corrective action history, system updates and system health reports to verify appropriate actions have been taken for adverse conditions and to note any trending. The team reviewed vendor manuals to verify that recommendations have been incorporated into the testing program or that justification exists to the contrary. The team performed a field walk down of the charger system to verify that field conditions revealed no observable signs of neglect or degradation. The team reviewed the related SAMG modification package to verify that battery charger performance has not been adversely affected by the modification.

b. Findings

No findings of significance were identified.

.2.15 Battery Charger 1A-1 AC Input Motor Control Center Compartment, 1-1CA-C05

a. Inspection Scope

The team reviewed the logic diagrams and control schematics to verify that the feeder breaker satisfied the safety related application as delineated in the DBD. The control schematics were reviewed to verify operation and protection function of the chargers under normal operating conditions. The team reviewed the normal voltage and current feeds to verify the component rating met the design basis. The team reviewed component trip characteristics and interrupting capability to verify that the component met the design basis requirements. The team reviewed test procedures and results to verify that protective devices were appropriately sized and coordinated to meet design basis requirements. The team reviewed the degraded buss evaluation to verify that the components would respond appropriately. The team reviewed component replacement history to verify that replacement parts had been appropriately procured or dedicated for safety related use. The team reviewed system and component corrective action history, system updates and system health reports to verify appropriate actions have been taken for adverse conditions and to note any trending. The team reviewed vendor manuals to verify that recommendations have been incorporated into the testing program or that justification exists to the contrary. The team performed a field walk down of the feeder breakers to verify that field conditions revealed no observable signs of neglect or degradation.

b. Findings

No findings of significance were identified.

.2.16 Startup Auxiliary Transformer Undervoltage Relay 27SX, 27SX1

a. Inspection Scope

The team reviewed relay setting sheets to verify field settings were consistent with design bases. The review also was performed to establish whether the relay was subject to spurious tripping under accident or transient conditions, and verify it coordinated properly with other voltage and overcurrent relays. The team reviewed maintenance schedules and procedures to verify the relays were being properly maintained and calibrated. The team reviewed relay service conditions to determine whether the relay was applied within its specified environmental conditions. The team reviewed maintenance and corrective action records to determine whether the equipment had exhibited adverse performance trends.

b. Findings

No findings of significance were identified.

.2.17 Startup Auxiliary Transformer, SAT-START-AUX-XFMR

a. Inspection Scope

The team reviewed Alternating Current (AC) load flow calculations and load management procedures to assess whether the transformer would have sufficient

capacity to support its required loads under worst case accident loading and grid voltage conditions. The team reviewed bus transfer calculations to verify inrush currents would remain within the transformer capabilities. The team reviewed transformer protective relaying to assess whether it afforded adequate protection and whether there would be any adverse interactions that would reduce system reliability. The team reviewed maintenance procedures to verify tasks and acceptance criteria were consistent with vendor recommendations. In addition, the team reviewed maintenance records and corrective action documents to assess any adverse equipment operating trends. The team performed walk downs of the transformers to assess observable materiel condition and presence of hazards.

b. Findings

No findings of significance were identified.

.2.18 Emergency Diesel Generators, 2-DG1-GEN & 2-DG2-GEN

a. Inspection Scope

The team reviewed diesel starting circuits to verify the diesels receive the proper signals to respond to accidents and bus undervoltage conditions. The team reviewed diesel output breaker logic and load sequencing circuits to determine whether loads would be available within the time assumed in the accident analysis. The team reviewed static loading calculations to determine whether the maximum loading during emergencies was within the diesel ratings. The team reviewed dynamic loading calculations to determine whether the response of the diesel generator governor and voltage regulator satisfied the requirements of NRC Safety Guide 9. The team reviewed protective relay setpoints, calculations and vendor data to determine whether the generator was adequately protected against overloads and faults, and was immune from spurious tripping. The team reviewed surveillance procedures and test results to determine whether testing was being performed in accordance with Technical Specification requirements, and whether any unaddressed anomalies had occurred. The team performed walkdowns of the Diesel to assess materiel condition and presence of hazards. In addition, the team reviewed maintenance records and corrective action documents to determine whether there were any adverse equipment operating trends. Various ARs relating to diesel failures were reviewed to determine whether root cause analyses were adequate and whether corrective actions were appropriately targeted at causes to prevent recurrence

b. Findings

No findings of significance were identified.

.2.19 High Pressure Coolant Injection Pump Discharge Flow Transmitter, E41-FT-N008

a. Inspection Scope

The team reviewed instrument loop diagrams and elementary wiring diagrams to verify the instrument loop would function as described in the design bases. The team reviewed instrument setpoint specifications, procedures, and calibration results to verify the instrument signal was adequate to perform the control and indication functions required by the design bases. The team reviewed engineering change documents and related

calculations regarding the revision of the qualified life for the transmitters to verfiy the changes were appropriate and properly evaluated. The team reviewed maintenance and corrective action records to assess whether the equipment has exhibited adverse performance trends. The team performed a walk down of the transmitter to assess observable materiel condition and presence of hazards.

b. Findings

No findings of significance were identified.

.2.20 Reactor Core Isolation Cooling Pump Discharge Flow Switch, E51-FS-N002

a. Inspection Scope

The team reviewed instrument loop diagrams and elementary wiring diagrams to verify the instrument loop would function as described in the design bases. The team reviewed Instrument setpoint specifications, procedures, and calibration results to verify the instrument signal was adequate to perform the control and indication functions required by the design bases. The team reviewed switch electrical burdens and specifications to verify the switch was applied within its ratings. The team reviewed maintenance and corrective action documents to assess whether the equipment has exhibited adverse performance trends. The team performed a walk down of the switch to assess observable materiel condition and presence of hazards.

b. Findings

No findings of significance were identified.

.2.21 ITE 230kV, 2000A ,Type GA, Model B SF6 Circuit Breakers

a. Inspection Scope

The team reviewed TS, UFSAR, design drawings and calculations, vendor documentation, and plant procedures to verify the appropriateness of design assumptions, boundary conditions, and models, as well as the appropriateness of the licensee's analysis methods. Electrical elementaries and wiring diagrams were reviewed to verify that energy sources, including those used for control functions, would be available and adequate during accident/event conditions to the extent necessary to support safety functions. Plant personnel were interviewed and a component/system walk down was conducted to verify that potential degradation was being monitored and prevented. The system walk down also verified that the observable material condition supports its design operation, and component configurations have been maintained consistent with design assumptions and the equipment was adequately protected from external events. The team also reviewed maintenance and corrective action history to verify that potential degradation was being monitored or prevented and that component replacement was consistent with qualification life.

b. Findings

No findings of significance were identified.

.3 Review of Low Margin Operator Actions

a. Inspection Scope

The team performed a margin assessment and detailed review of five risk significant and time critical operator actions. Where possible, margins were determined by the review of the assumed design basis and UFSAR response times and performance times documented by job performance measures (JPMs). For the selected components and operator actions, the team performed an assessment of the Emergency Operating Procedures (EOPs), Abnormal Operating Procedures (AOPs), Alarm Panel Procedures (APPs), and other operations procedures to determine the adequacy of the procedures and availability of equipment required to complete the actions. Operator actions were observed on the plant simulator and during plant walk downs.

The following operator actions were observed on the licensee's operator training simulator:

- Loss of Offsite Power with recovery using the Unit Auxiliary Transformer backfeed: 0AOP-36.1, Loss of any 4160V Buses or 480V E-Buses
- Failure of EDG # 4 to automatically start: 0AOP-36.1, Loss of any 4160V Buses or 480V E-Buses
- Electrical ATWS: 1EOP-01-LPC, Level Power Control and EOP-01-LEP-02, Alternate Control Rod Insertion

Additionally, the team walked down, "table-topped" and investigated the following operational scenarios:

- Local/Manual actions to establish backfeed through the Unit Auxiliary Transformer, without the startup transformer available, on Units 1 and 2: 1OP-50 and 2OP-50, Plant Electrical System Operating Procedure
- Local/Manual actions to establish power to the battery chargers using the SAMG diesel generators: 0AOP-36.2, Station Blackout

b. Findings

No findings of significance were identified.

.4 Review of Industry Operating Experience

a. Inspection Scope

The team reviewed selected operating experience issues that had occurred at domestic and foreign nuclear facilities for applicability at the Brunswick Steam Electric Plant. The team performed an independent applicability review for issues that were identified as applicable to the Brunswick Steam Electric Plant and were selected for a detailed review. The issues that received a detailed review by the team included:

- IN 00-006, Offsite Power Voltage Inadequacies
- IN 91-046, Degredation of Emergency Diesel Generator Fuel Oil Delivery Systems
- IN 86-014, Overspeed Trips of HPCI, RCIC and AFW Turbines

- IN 06-022, New Ultra-Low-Sulfur Diesel Fuel Oil Could Adversely Impact Diesel Engine Performance
- IN 90-021, Potential Failure of Motor-Operated Butterfly Valves to Operate Because Valve Seat Friction Was Underestimated

b. Findings

No findings of significance were identified.

.5 Review of Permanent Plant Modifications

a. Inspection Scope

The team reviewed one modifications related to the selected risk significant components in detail to verify that the design bases, licensing bases, and performance capability of the components have not been degraded through modifications. The adequacy of design and post modification testing of these modifications was reviewed by performing activities identified in IP 71111.17, Permanent Plant Modifications, Section 02.02.a. Additionally, the team reviewed the modifications in accordance with IP 71111.02, Evaluations of Changes, Tests, or Experiments, to verify the licensee had appropriately evaluated them for 10 CFR 50.59 applicability. The following modification was reviewed:

- Engineering Change 67877R7, Severe Accident Mitigation Guidelines Diesel Generators for the 125 VDC Battery Chargers

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA6 Meetings, Including Exit

Exit Meeting Summary

On December 14, 2007, the team presented the inspection results to Mr. Scarola and other members of the licensee staff. The team returned all proprietary information examined to the licensee. No proprietary information is documented in the report.

ATTACHMENTS: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Scarola, Vice President Brunswick Nuclear Plant
B. Waldrep, Director Site Operations
S. Howard, Operations Manager
S. Rogers, Maintenance Manager
T. Trask, Engineering Manager
R. Ivey, Support Services Manager
A. Pope, Licensing Supervisor

NRC

J. Austin, Senior Resident Inspector, Brunswick Nuclear Plant

LIST OF ITEMS OPENED, CLOSED, AND REVIEWED

Opened

05000325/2007006, 05000324/2007006-01	URI	Capability of Emergency Diesel Generators to Meet Design and Licensing Requirements

LIST OF DOCUMENTS REVIEWED

Licensing Documents

TS 3.8.1,2, 7 & 8
TS 3.7.2
SR 3.5.1.3
TSB 3.6.1.5

Design Basis Documents and System Descriptions

DBD-17, Residual Heat Removal System, Rev. 14
DBD-19, High Pressure Coolant Injection System, Rev. 14
DBD-24, Containment Atmospheric Control System, Rev. 9
DBD-37.4, Diesel Generator Building Ventilating Air System, Rev. 6
DBD-39, Emergency Diesel Generator System, Rev. 6
DBD-43, Service Water System, Rev. 7
DBD-46, Instrument and Service Air System, Rev. 6
DBD-50, AC Electrical System, Rev. 5
DBD-51, DC Electrical System, Rev. 5
DBD-111, Station Blackout, Rev. 2
SD-16, Reactor Core Isolation Cooling (RCIC) System, Rev. 6
SD-19, High Pressure Coolant Injection (HPCI) System, Rev. 13
SD-37.4, Diesel Generator Building Ventilating Air System, Rev. 3
SD-39, Emergency Diesel Generator System, Rev. 8
SD-43, Service Water System, Rev. 13
SD-46, Pneumatic Systems, Rev. 7
SD-50, 230 KV Electric Distribution System, Rev. 10
SD-50.1, 4160 VAC Electrical Distribution System, Rev. 13
SD-51, DC Distribution System, Rev. 5

Procedures

1EOP-01-LPC, Level Power Control, Rev 9
0EOP-01-LEP-02, Alternate Control Rod Insertion, Rev 25
0AOP-20.0, Pneumatic (Air/Nitrogen) System Failures, Rev. 31
0AOP-030, Station Blackout Program Document, Rev. 7
0AOP-36.1, Loss of any 4160V Buses or 480V E-Buses, Rev. 43
0AOP-36.2, Station Blackout, Rev 35
1OP-29, Circulating Water System, Rev. 108
1OP-32, Condensate and Feedwater System Operating Procedure, Rev. 121
1OP-35, Heater Drains, Vents, and Level Control Operating Procedure, Rev. 36
1OP-43, Unit 1 Service Water System Operating Procedure, Rev. 89
2OP-43, Unit 2 Service Water System Operating Procedure, Rev. 126
0OP-46, Instrument and Service Air System Operating Procedure, Rev. 132
1OP-50, Plant Electrical System Operating Procedure, Rev 81
2OP-50, Plant Electrical System Operating Procedure, Rev 104
1OI-03.4.3, Unit 1 Turbine Building Auxiliary Operator Daily Check Sheets, Rev. 48
0OI-50.9, 4160V Bus Common A Electrical Load List, Rev. 33
0OI-50.13, 4160V Bus Common B Electrical Load List, Rev. 29

1APP-UA-01, Annunciator Procedure for Panel UA-01, Rev. 56
1APP-A-06, Annunciator Procedure for Panel A-06, Rev. 45
0-PM-CMP-501, Inspection of Atlas Copco Air Compressor Type ZR4 B/APR, Rev. 11
0-PM-VPL-500, Inspection and Repair of the Instrument Air Dryer Four-Way Plug Valve by LectroDryer, Model Number V-143, Rev. 9
0-CM-CMP-501, Repair of Atlas Copco Air Compressor Type XR4 B/APR, Rev. 4
EGR-NGGC-0003, Design Review Requirements, Rev. 10
EGR-NGGC-0005, Engineering Change, Rev. 26
CAP-NGGC-0200, Corrective Action Program, Rev. 19
CAP-NGGC-0206, Corrective Action Program Trending and Analysis, Rev. 2
NUA-NGGC-1501, Nuclear Assessment Section Conduct of Operations, Rev. 14
NUA-NGGC-1510, Nuclear Assessment Process, Rev. 22
0-PT-12.2C, No.3, Diesel Generator Monthly Load Test, Rev. 87
0-PT-12.6, Breaker Alignment Surveillance, Rev. 53
0-PT-08.1.4b, RHR Service Water System Operability Test – Loop B, Rev. 56
0-PT-08.2.2b, LPCI/RHR Operability Test – Loop B, Rev. 73
0-PT-08.2.2c, LPCI/RHR Operability Test – Loop A, Rev. 64
0-PT-09.2, HPCI System Operability Test, Rev. 120
0-PT-10.1.1, RCIC System Operability Test, Rev. 89
0-PT-10.1.3, RCIC System Operability Test – Flow Rates at 150 psig, Rev. 52
0-PT-16.1.1, Containment Atmosphere Control System Valve Operability, Rev. 49
0-PT-20.3, Local Leakrate Testing, Rev. 71
0-SPP-GOV001, HPCI Governor Dynamic Tuning, Rev. 4
0MST-BATT11W Batteries, 125 VDC, Weekly Operability Test, Rev. 6
0MST-BATT11Q Batteries, 125 VDC, Quarterly Operability Test, Rev. 10
0MST-BATT11Q Batteries, 125 VDC, Quarterly Operability Test, Rev. 10
0MST-BATT11FY Batteries, 125 VDC, Performance Capacity Test, Rev. 13
0MST-BATT11R Batteries, 125 VDC, Service Capacity Test, Rev. 12
1MST-XFR41R, Automatic Switching From UAT to SAT Functional Test, Revision 4
2MST-DG21R DG-3 Trip Bypass Logic Test, Rev. 20
2MST-XFR41R, Automatic Switching From UAT to SAT Functional Test, Rev. 4
MNT-NGGC-0004, Scaffolding Control, Rev. 8
MNT-TRMC-00003, Inspections and Maintenance on Stationary , Mobile Power Transformers and Nuclear Spare Transformers, Rev. 3
OPIC-BYC002 Calibration of Power Conversion Model 3MD-130-300 Battery Chargers, Rev. 12
OPIC-BYC002 Calibration of Power Conversion Model 3MD-130-300 Battery Chargers, Rev. 12
OPIC-PS006, Calibration of ITT Barton Model 288A, 289A, 290A and 291A Differential Pressure Indicating Switch, Rev. 42
OPM-RLY001, PM on GE HFA Relays, Rev. 16
SORMC-GD-24, Energy Control Center System Planning & Operations Department Systems Operations Reference Manual Carolinas, Rev. 18
TRM-K47-OPM-LTM004, Startup Auxiliary Transformer (SAT) External Inspection, dtd 3/02/01
EGR-NGGC-0203, Motor Operated Valve Performance Prediction, Actuator Settings, and Diagnostic Test Data Reconciliation, Rev. 13
EGR-NGGC-0205, Air Operated Valve Reliability Program, Rev. 6
0BNP-TR-008, Inservice Inspection / Testing Guideline, Rev.5
0ENP-16.8, Containment Leakage Tracking, Rev. 23
0ENP-16.1, IST Pump and Valve Data, Rev. 26
0ENP-16.4, Use of Leak Test Equipment, Rev. 20
0PM-AO014, Air Operated Valve Diagnostic Testing, Rev. 0
0ENP-646, Post Test Evaluation of AOV Diagnostics, Rev. 0

0ENP-647, Air Operated Valve Diagnostic Testing, Rev. 1
0CM-AO509, Maintenance Instructions for Bettis Actuator, Model Number 732B&C-SR-H, Rev. 7
0PM-MO009, AC and DC Limitorque Motor Operated Valve Corrective and Preventive Maintenance Procedure, Rev. 3
0ENP-43.3, MOV Post Test Evaluation, Rev. 4
0PLP-20, Post-Maintenance Testing Program, Rev. 32

Completed Test Procedures

0-PT-09.2, HPCI System Operability Test, performed: Unit 1: 8/16/07, 5/25/07, 2/24/07, 4/9/06, 1/6/06, 10/14/05; Unit 2: 7/19/07, 11/18/06, 8/17/06, 11/18/06, 7/8/05, 4/7/05, 1/6/05
0-PT-10.1.1, RCIC System Operability Test performed: Unit 1: 10/21/07, 9/30/07, 7/28/07, 5/3/07; Unit 2: 9/21/07, 7/13/07, 5/4/07, 4/27/07
0-PT-12.2C, No.3, Diesel Generator Monthly Load Test, performed 4/10/07
0-PT-12.2C, No.4, Diesel Generator Monthly Load Test, performed 4/3/07
0-PT-20.8, Nitrogen Backup System Operability Test (Rev. 21), performed 3/18/04
0-PT-20.8, Nitrogen Backup System Operability Test (Rev. 22), performed 4/2/06
0-PT-31.1, Non-Interruptible Instrument Air System Valve Operability Test (Rev. 34), performed 3/20/05
0-PT-31.1, Non-Interruptible Instrument Air System Valve Operability Test (Rev. 34), performed 3/31/07
0-PT-31.6, Backup Nitrogen Supply Valve Operability Test (Rev. 9), performed 5/22/07
0-PT-31.6, Backup Nitrogen Supply Valve Operability Test (Rev. 9), performed 8/13/07
Test No.: 07209A05, 1-SW-V105 Butterfly Valve Static Test Analysis As-Left Test, performed 7/28/07
Test No.: 06083H21, 1-SW-V105 Butterfly Valve Static Test Analysis As-Left Test, performed 3/24/06
Test No.: 04071004, 1-SW-V105 Butterfly Valve Static Test Analysis As-Left Test, performed 3/11/04
2-MST-DG21R DG-3 Trip Bypass Logic Test, performed 12/25/05
2-MST-DG22R DG-4 Trip Bypass Logic Test, performed 10/16/06
TRM-K47-OPM-LTM004, Startup Auxiliary Transformer (SAT) External Inspection, performed 3/27/05
TRM-K47-OPM-LTM004, Startup Auxiliary Transformer (SAT) External Inspection, performed 3/14/06
TRM-K47-OPM-LTM018, Transformer Bushing Changeout, performed 3/13/06
TRM-K47-OPM-LTM019, Re-gasket Fault Pressure Relay and Valve Assembly, performed 3/13/06
TRM-K47-OPM-LTM020, Equipment Power Factor Testing, performed 3/14/06

Drawings

BN-46.0.01, Unit 1 Instrument and Service Air, Rev. 4
BN-46-0-03, Unit 2 Instrument and Service Air, Rev. 2
D-02537, SHT 2, Unit 2 Reactor Building Service Water System Piping Diagram, Rev. 85
D-20041, SHT 3, Unit 1 Service Water System Piping Diagram, Rev. 33
D-25037, SHT 2, Unit 1 Reactor Building Service Water System Piping Diagram, Rev. 81
D-02026, Fuel Oil Loading & Storage, Piping Diagram, Rev. 24
D-02265, Starting Air for Diesel Generators, Piping Diagram, Sht. 1A, Unit 1 & 2, Rev. 18
D-02268, Fuel Oil to Diesel Generators, Piping Diagram, Sht. 1A, Unit 1 & 2, Rev. 28

D-02268, Fuel Oil to Diesel Generators, Piping Diagram, Sht. 1B, Unit 1 & 2, Rev. 28
D-02269, Fuel Oil to Diesel Generators, Piping Diagram, Sht. 2A, Unit 1 & 2, Rev. 28
D-02269, Fuel Oil to Diesel Generators, Piping Diagram, Sht. 2B, Unit 1 & 2, Rev. 28
D-02270, Diesel Generator Lube Oil System, Piping Diagram, Sht. 1A, Unit 1 & 2, Rev. 18
D-02270, Diesel Generator Lube Oil System, Piping Diagram, Sht. 1B, Unit 1 & 2, Rev. 18
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D-02271, Diesel Generator Lube Oil System, Piping Diagram, Sht. 2B, Unit 1 & 2, Rev. 18
D-02272, Diesel Generator Jacket Water System, Piping Diagram, Sht. 1A, Unit 1 & 2, Rev. 13
D-02272, Diesel Generator Jacket Water System, Piping Diagram, Sht. 1B, Unit 1 & 2, Rev. 13
D-02273, Diesel Generator Jacket Water System, Piping Diagram, Sht. 2A, Unit 1 & 2, Rev. 13
D-02273, Diesel Generator Jacket Water System, Piping Diagram, Sht. 2B, Unit 1 & 2, Rev. 13
D-02274, Diesel Generator Service Water & Demineralized Systems, Piping Diagram, Sht. 1, Unit 1 & 2, Rev. 23
D-02274, Diesel Generator Service Water & Demineralized Systems, Piping Diagram, Sht. 2, Unit 1 & 2, Rev. 22
D-25023, Reactor Building High Pressure Coolant Injection System, Piping Diagram, Sht. 1, Unit 1 & 2, Rev. 57
D-25029, Reactor Building Reactor Core Isolation Cooling System, Piping Diagram, Sht. 1, Unit 1 & 2, Rev. 59
D-04101, Ventilation System Diesel Generator Building Air Diagram, Rev. 13
D-02049-SH0001, Turbine Building Instrument and Service Air Systems Piping Diagram, Rev. 24
D-02049-SH0002, Turbine Building Instrument and Service Air Systems Piping Diagram, Rev. 20
D-02050-SH0001, Units 1&2 Instrument and Service Air Systems Complete Station Piping Diagram, Rev. 19
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D-07208, Piping Diagram Instrument Air Supply System Reactor Building for Unit 2, Rev. 21
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D-02525, Sheet 1B, Reactor Building Piping Diagram Residual Heat Removal System, Rev. 62
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F-03001, Units 1&2 Main One Line Diagram 230KV & 24KV Systems, Rev. 27
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F-03004, 4160V Emergency System Switchgear E1&E2 Auxiliary One Line Diagram for Units 1&2, Rev. 15
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F-04093, Diesel Generator Building Ventilation System, Plans at El. 23’-0” & 50’-0”, Sht. 1, Rev. 20
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LL-09236, Sheet 53, Unit No. 2 – MCC “2XA” Compt. “2-DF1” RHR Pump 2A Min. Flow Bypass Valve 2-E11-F007A Control Wiring Diagram, Rev. 8
LL-92036, Sheet 53, Unit 1 – MCC “1XB” Compt. “1-DF1” RHR Pump 1A Min. Flow Bypass Valve 1-E11-F007A Control Wiring Diagram, Rev. 8
LL-09237, Sheet 48, Unit No. 2 – MCC “2XB” Compt. “2-DL3” RHR Pump 2B Min. Flow Bypass Valve 2-E11-F007B Control Wiring Diagram, Rev. 13
LL-09237, Sheet 63, Unit No. 2 – MCC “2XB” Compt. “2-DM2” RHR Supp Pool Clg Isol Valve 2-E11-F024B Control Wiring Diagram, Rev. 14
LL-92037, Sheet 63, Unit No. 1 – MCC “12XB” Compt. “1-DM2” RHR Torus Clg Isol Valve 1-E11-F024B Control Wiring Diagram, Rev. 8
LL-90046, Sheet 14, Unit 1 – CAC System Suppression Pool Purge Exhaust Valve V7 Control Wiring Diagram, Rev. 9
LL-90046, Sheet I 16, Unit No. 1 – CAC System Suppression Pool Purge Exhaust Valve V8 Control Wiring Diagram, Rev. 5
0-FP-04357, Sht.1, Diesel Generator Building Air Supply, Rev. J
0-FP-04357, Sht.2, Diesel Generator Building Control Panel, Rev. K
0-FP-08213-SH0002, Schematic Diagram Speed Control Logic (BWR), Rev. C
0-FP-06755, Fisher 24” Heavy Pattern Valve, Class 2, dtd 9/23/71
0-FP-06756, Fisher 24” Heavy Pattern Valve Cross Sectional drawing, Rev. C
0-FP-06757, Fisher 24” Heavy Pattern Valve, Class 2, Limitorque Model SMB-00/15, Rev. C
0-FP-06758, Fisher 24” Heavy Pattern Valve Cross Sectional drawing, Rev. B
0-FP-20460, PRATT Triton XR-70 Butterfly Valve General Arrangement Drawing, Rev. A
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0-FP-6981, Unit 1&2 20”-150# 275 WOG Vlv. Assy. W/Bettis 732CSR80, Rev. G
0-FP-81169, Posi-Seal International 20”- Class 150 Wafer Lug Style VLV ASS’Y, Rev. B
0-FP-81170, Posi-Seal International 20”- Class 150 Wafer VLV ASS’Y, Rev. 0
0-FP-06152, Anchor 4” 300# Gate Valve, Rev. G
0-FP-84241, Sheet 1, Valtek Globe Valve 16” 300#, Rev. A
0-FP-84241, Sheet 2, Valtek Globe Valve 16” 300#, Rev. B
0-FP-84241, Sheet 3, Valtek Globe Valve 16” 300#, Rev. A
1-FP-50039 Sh. 4, HPCI Elementary Diagram Unit 1, Rev. Q
1-FP-50039 Sh. 6, HPCI Elementary Diagram Unit 1, Rev. Q
1-FP-50098 Sh. 3, RCIC System Elementary Wiring Diagram, Rev. W
1-FP-22324, Unit 1 Service Water System Radwaste Tunnel Piping Isometric, EL. (-) 3’-0” (Grinnell # 1-SW-ISO-7), Rev. H
2-FP-22319, Unit 2 Grinnell Corporation Service Water (Tunnel), Rev. J
2-FP-34520-SH0002, Unit 2, Main Power Transformer Elementary Diagram, Rev. B
2-FP-50523, High Pressure Coolant Injection (Rack H21-P014), Rev. 2
2-FP-60865, Unit 2 Reactor Building Service Water System, Rev. AB
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9527-01-4283, Technocheck Valve, Rev. 0
9527-20405, Diesel Generators Time Current Curve, Rev. 0
9527-F-3585, Relay Record 87ST/1, dtd 2/12/75
9527-LL-91003 Sh. 26, Control Wiring Diagram Unit No. 1 4160V Switchgear “1C” Compartment “1-AC5” Incoming Line Unit Aux. Xfmr., Rev. 3
9527-LL-91003 Sh. 30, Control Wiring Diagram Unit No. 1 4160V Switchgear “1C” Compartment “1-AC7” Incoming Line Startup Aux. Xfmr., Rev. 4
9527-LL-91003 Sh. 33, Unit No. 1 – 4160 Volt Switchgear “1C” Compartment “1-AC8” Emergency Switchgear “E2” FDR. Bkr. Control Wiring Diagram, Rev. 5

Calculations

0-IA-0009, Pressure Drop Between Service Air Compressors and Instrument Air, Rev. 2
95135-C-58, Seismic Weak Link Torque Calculation MOV(s) 1-SW-V101/V105, 2-SW-V101/V105, Rev. 1
89-068-01, HPCI Test Mode Pressure Analysis, Rev. 0
89-068-02, HPCI Minimum Flow Calculation, Rev. 0
9527-8-E41-06-F, NPSH Requirements - RCIC and HPCI, dtd 3/5/73
9527-040-8-SS-57-F, Transient in the HPCI Turbine Exhaust, Rev. 1
0DGB-0016, Qualification of the Mounting of Fire Dampers, Rupture Discs and Blowout Panels in DGB Interior Masonry Walls, Rev. 1
0DGB-1005, Diesel Generator Building Exterior Blowout Panels, Rev. 0
0VA-0033, Tornado Analysis of Diesel Generating Building, Rev. 1
M-89-0021, HPCI/RCIC NPSH with Suction from the CST, Rev. 0
M-89-0008, Heat Balance on DG # 2, Rev. 0
M-91-0001, Emergency Diesel Generators #1, #2, #3 and #4 Fuel Oil Consumption Rate, Rev. 2
04KV-0002, 4.16 KV Emergency Bus (Degraded Voltage) Undervoltage and Time Delay Uncertainty and Setpoint Calculation, Rev. 0
8S42-P-101 Station Blackout Coping Analysis Report Units 1 & 2, Rev. 10, dtd 8/1/2005
BNP-EQ-5.003 Reactor Bldg. Ambient Temperature for Qualified/Expected Life Calculations, Rev. 1A
BNP-E-1.012, Safety Related AC Control Loop Voltage Analysis, Rev. 5

BNP-E-1.013, Safety Related AC Control Loop Voltage Analysis, Rev. 4
BNP-E-7002, Battery Charger Loads, Rev. 5
BNP-E-7.002, AC Auxiliary Electrical Distribution System, for Voltage/Load Flow/Fault Current Study, Rev. 5A
BNP-E-7.002, AC Auxiliary Electrical Distribution System Voltage/Load Flow/Fault Current Study, Rev. 5B
BNP-E-7.012, Bus Transfer Study, Rev. 1A
BNP-E-8.013, Motor Torque Analysis for AC Motor Operated Valves
BNP-MECH-SW-V101/105, Mechanical Analysis and Calculations for 1/2-SW-V101/105 Conventional and Nuclear Service Water Supply Valves, Rev 3
BNP MECH-DJCW-001, Diesel Jacket Water System Response to Leakage, Rev. 0
BNP Unit 1 & 2 125/250 VDC Power System Battery Capability Analysis For Circuit Breaker Operation Following Extended Loss of AC Power, dtd 4/17/07
BNP-MECH-1-CAC-V7-AO, AOV Setup Calculation for 1-CAC-V7-AO, Torus Purge Exhaust Valve, Rev. 1
BNP-MECH-2-CAC-V7-AO, AOV Setup Calculation for 2-CAC-V7-AO, Torus Purge Exhaust Valve, Rev. 1
BNP-MECH-1-CAC-V8-AO, AOV Setup Calculation for 1-CAC-V8-AO, Torus Purge Exhaust Valve, Rev. 1
BNP-MECH-2-CAC-V8-AO, AOV Setup Calculation for 2-CAC-V8-AO, Torus Purge Exhaust Valve, Rev. 1
BNP-MECH-E11-F007A/B, Mechanical Analysis and Calculations for 1 & 2-E11-F007A/B RHR Minimum Flow Valves, Rev. 5
BNP-MECH-E11-F024A/B, Mechanical Analysis and Calculations for 1/2-E11-F024A/B RHR Suppression Pool Cooling Isolation Valves, Rev. 4
BNP-E-8.013, Motor Torque Analysis for AC Motor Operated Valves, BNP Unit 1, Rev. 7
BNP-E-8.014, Motor Torque Analysis for AC Motor Operated Valves, BNP Unit 2, Rev. 7

Corrective Action Documents

NCR00016613, Corrective Action for Service Air Reliability, dtd 2/15/00
NCR 00152974, 2B-1 Battery Charger Loss of Voltage Control During PM, 3/28/07
NCR00176442, Concerns with UAT Back Feed Tool Bag During Station Blackout, dtd 11/16/05
NCR00203796, 1B Service Air Compressor Tripped on Startup, dtd 8/20/06
NCR00209962, Potential Inconsistencies in the EDG HVAC Design Basis, dtd 10/20/06
NCR00210587, New Ultra Low Sulfur Diesel Fuel Oil Could Adversely Impact Diesel Engine Performance, dtd 10/26/06
NCR00210704, Service Air Compressor Maintenance and Training, dtd 10/27/06
NCR00211047, Vendor Support for the 1B Service Air Compressor, dtd 10/31/06
NCR00211235, UAT Backfeed Preparations for AOP-36.1 Were Not Expeditious Following Unit 2 LOOP of 11/1/06, dtd 11/2/06
NCR00217098, NRC RIS 2006-23 Post-Tornado Operability EDG Ventilation, dtd 12/20/06
NCR00221401, Review of Battery Charger Meter Calibration, 2/5/2007
NCR00241914, 1B Service Air Startup Procedure, dtd 8/6/07
NCR00249249, All 125 VDC Chargers Exceeded Their Online Unavailability Goal During Plant Mod
Condition Report 99-00217, Lack of PT-09.2 ITS Update, dtd 1/21/99
AR 257060, Ensure Valve 1-CAC-V7-AO Analysis of AOV Diagnostic Data (3/16/04) Review is Performed
AR 258755, Clarification to UFSAR Section 6.2.4.1 for CAC Containment Isolation Valve Leakage Limits

Work Orders

00735995-01, Validate and Document the Time Line for Maintenance's Action Associated with Entering Into the UAT Back Feed, During a Station Blackout, dtd 7/19/05
00833542-03, 1B Service Air Compressor Converter Fault Repair (CO), dtd 7/31/06
00971236-01, 2B SA Compressor Tripped on Low Oil Pressure (CO), dtd 11/4/06
00971746-01, 2B SA Compressor Tripped on Low Oil Pressure (EV), dtd 10/30/06
00973132-01, 2B SA Compressor Water Found When Changing Oil (OM), dtd 11/11/06
00973774-01, 1B SA Compressor Tripped on Converter Overcurrent (OM, repeat of WR00233412, and reference WO00833542), dtd 11/6/06
00977503-01, 1B SA Compressor Tripped on Overcurrent With Excessive Condensate from Traps (EV, repeat of 973774), dtd 1/9/07
00986847-01, 1B SA Compressor Tripped on Converter Failure (EV), dtd 1/23/07
01000882-01, 2B SA Compressor Data Capture During Compressor Start (OM), dtd 1/28/07
01006925-01, 1B SA Compressor Perform Inter/After Cooler Trap Cleaning and Inspection With Oil Sample (PM), dtd 8/7/07
01089483-01, 2B SA Compressor Tripped on Low Oil Pressure (EV), dtd 7/23/07
01089483-03, 2B Air Compressor Tripped on Low Oil Pressure (EV), dtd 7/25/07
01117317-01, 2B SA Compressor 8000 Hr Service (EV), dtd 10/29/07
01117317-03, 2B SA Compressor Discharge Check Valve Leakby Causing Idle Compressor Reverse Rotation, dtd 10/29/07
00827062 01, Perform Damper Lube Check List, performed January 16, 2006
00897548 01, Perform Damper Lube Check List, performed July 10, 2007
00047115, Calibrate 1-E41-FT-N008, dtd 12/11/02
00134319 01, Install Pre-calibrated Relay, dtd 11/13/02
00134319 02, Calibrate Spare Relays, dtd 11/07/02
00287844 02, Calibrate 1-E41-FT-N008, dtd 10/18/02
00357774 01, Calibrate 1-E41-FT-N008, dtd 09/16/04
00374717, Calibrate 1-E41-FT-N008, dtd 4/28/04
00582565, 2-E41-FIC-R600 Replace Scale AT, dtd 10/06/04
00658807 01, Calibrate 1-E41-FT-N008, 09/20/06
00932646, SAT-2 Protective Relay Functional Testing, dtd 03/12/07
00951011 01, Install Pre-calibrated Relay, dtd 3/26/07
00951011 02, Calibrate Spare Relays, dtd 11/29/06
00991836 01, Weekly Operability Test, dtd 10/26/07
00994351 01, Weekly Operability Test, dtd 11/2/07
00996629 01, Weekly Operability Test, dtd 11/15/07
010005602 01, Quarterly Operability Test, dtd 11/5/07
010002348 01, Quarterly Operability Test, dtd 11/2/07
00889527 01, Quarterly Operability Test, dtd 6/26/07
00886700 01, Quarterly Operability Test, dtd 6/25/07
00542157 01, PM Breaker 1-1CA-C05-52 Feed to Battery Charger 1-1A-1, dtd 3/28/06
00450585 01, Replace Amp Control Board on 1-1A-1-125VDC Battery Charger, dtd 3/15/04
00608749 01, OMST-BATT11FY Performance Capacity Test for battery 1B-1, dtd 3/21/06
00608748 01, OMST-BATT11FY Performance Capacity Test for Battery 1B-2, dtd 3/28/06
00608746 01, OMST-BATT11FY Performance Capacity Test for Battery 1A-1, dtd 3/10/06
00608747 01, OMST-BATT11FY Performance Capacity Test for Battery 1A-2, dtd 3/12/06
00308090 01, OMST-BATT11R 1B-2, Service Capacity Test, dtd 3/17/04
00297679 01, OMST-BATT11R 1B-1, Service Capacity Test, dtd 3/17/04
00318250 01, OMST-BATT11R 1A-2, Service Capacity Test, dtd 3/17/04

00317182 01, OMST-BATT11R 1A-1, Service Capacity Test, dtd 3/17/04
01114109 09, Support Installation SAMG-Diesel Generator Charger 1-1A-1 Connection, dtd 9/26/07
93VIH 001, Calibrate the RCIC Pump Disc Flow SW 1-51-FS-N002, dtd 8/11/93
93ZFB 002, Calibrate the RCIC Pump Disc Flow SW 2-51-FS-N002, dtd 3/29/93
95ZFB 004, Calibrate the RCIC Pump Disc Flow SW 2-51-FS-N002, dtd 8/11/94
ABVC 001, Perform OPM-RLY001, dtd 09/13/03
AKPC 002, Calibrate the RCIC Pump Disc Flow SW 1-51-FS-N002, dtd 3/19/97
ALPO 004, Calibrate 1-E41-FT-N008, dtd 9/20/00
ANFY 004, Calibrate 1-E41-FT-N008, dtd 8/23/00
ANOQ 001, Calibrate the RCIC Pump Disc Flow SW 2-51-FS-N002, dtd 5/15/97
00470673, Task 01, 1-E11-F007A-MO, EC 50913 Motor Pinion Gear Ratio Change Modification
00470673, Task 02, 1-E11-F007A-MO, I&C Support for EC 50913 Motor Pinion Gear Ratio Change Modification
00684241, Task 01, 1-E11-F007A-MO, Perform 0PM-MO504 Limitorque Grease Inspection
00684518, Task 01, 1-E11-F007A-MO, Perform 0PM-MO009 and 0PDM-MO005C
00767848, Task 01, 1-E11-F007A-MO, Perform 0PM-MO504 Limitorque Grease Inspection
00471004, Task 01, 1-E11-F007B-MO, EC 50913 Motor Pinion Gear Ratio Change Modification
00471004, Task 02, 1-E11-F007B-MO, Support Mechanics EC 50913 Motor Pinion Gear Ratio Change Modification
00667682, Task 01, 1-E11-F007B-MO, Perform 0PM-MO009 and 0PDM-MO005C
00726308, Task 01, 1-E11-F007B-MO, Perform 0PM-MO504 Limitorque Grease Inspection
00639500, Task 01, 1-E11-F024B-MO, Perform Enhanced MOV Inspection
00658665, Task 01, 1-E11-F024B-MO, Perform 0PM-MO504 Limitorque Grease Inspection
00428405, Task 02, 1-CAC-V7-AO, EC 53426 - Replace Solenoid Valve – Provide I&C Assistance for Diagnostic Testing
00431081, Task 01, 1-CAC-V7-AO, Valve Closing Time Exceeded Limits of 0PT-16.1.1, Attachment 2, Rev. 41
00431081, Task 02, 1-CAC-V7-AO, Valve Closing Time Exceeded Limits – Perform Applicable Portions of 0PT-16.1.1
00431081, Task 03, 1-CAC-V7-AO, Valve Closing Time Exceeded Limits – Replace Limit Switches per EC 53426
00431081, Task 06, 1-CAC-V7-AO, Valve Closing Time Exceeded Limits - Stroke Valve Electrically to Verify Proper Operation
00738516, Task 01, 2-CAC-V7-AO, Perform Disassembled Inspection of 2-CAC-V7-AO and Replace all of the Elastomers
00738516, Task 02, 2-CAC-V7-AO, Support Mechanics Removal of Valve Actuator
00738516, Task 05, 2-CAC-V7-AO, Provide I&C Assistance for Diagnostic Testing
01025092, Task 01, 2-CAC-V8-AO, Perform AOV Diagnostic Test
01025092, Task 03, 2-CAC-V8-AO, Perform 0PT-16.1.1, Containment Atmosphere Control System Valve Operability, Rev. 46
01034628, Task 01, 2-CAC-V8-AO, LLRT Failure – Disassemble Valve and Determine the Failure of the LLRT
01034628, Task 03, 2-CAC-V8-AO, LLRT Failure – I&C Support for Actuator Removal
01034628, Task 05, 2-CAC-V8-AO, LLRT Failure – Valve Stem Packing Leak
00471003, Task 01, 2-E11-F007A-MO, EC 50913 Motor Pinion Gear Ratio Change Modification
00471003, Task 02, 2-E11-F007A-MO, I&C Support for EC 50913 Motor Pinion Gear Ratio Change Modification
00494768, Task 01, 2-E11-F007A-MO, Perform 0PM-MO504 Limitorque Grease Inspection
00974812, Task 01, 2-E11-F007B-MO, Valve Tripped on Thermal Overload – Troubleshoot to Determine Cause of Trip

00974812, Task 02, 2-E11-F007B-MO, Valve Tripped on Thermal Overload – Perform 0PT-08.2.2b, LPCI/RHR Operability Test – Loop B, Rev. 68
00471001, Task 01, 2-E11-F007B-MO, EC 50913 Motor Pinion Gear Ratio Change Modification
00471001, Task 02, 2-E11-F007B-MO I&C Support for EC 50913 Motor Pinion Gear Ratio Change Modification
00765948, Task 01, 2-E11-F024B-MO, Perform 0PM-MO504 Limitorque Grease Inspection
00765948, Task 02, 2-E11-F024B-MO, Stroke Valve Electrically to Verify Proper Operation

Action Requests

00018080, NRC IN 2006-06 Offsite Power Voltage Inadequacies, dtd 03/29/00
00128572, This is a Rework NCR for 2-E41-FIC-R600 Indication, dtd 06/01/04
0015303-03, Completion of Recommended Action 2a of 15303, 12/6/2000
0015303-07, Completion of Recommended Action 4 of 15303, 12/7/2000
0015303-09, Completion of Recommended Action 5 of 15303, 12/15/2000
00157810, HPCI Flow Limitation, dtd 05/02/05
00162710, 1-E51-F019 RCIC Min Flow Valve Failed Open During OPT-10.1.1, dtd 07/01/05
00162733, RCIC Availability Determination, dtd 07/01/05
00165042, Unplanned LCO Entry – EDG #4 Locked Out / Unavailable, dtd 7/29/05
00204331, RCIC System Inop due to Flow Controller Failure, dtd 08/24/06
00215599, SBO Self Assessment Weakness 1 (AR178573), dtd 12/06/06
00215815, Error in Calculation Embedded in Tech Spec Bases, dtd 12/07/06
00222024, Electrical Distribution System Weaknesses Identified, dtd 02/09/07
00222268, DG#1 Governor Motor Control Adjustment, dtd 02/12/07
002233012, EDG #2 Tipped and Lockout on Low Lube Oil Pressure, dtd 2/19/07
00223376, CES S/A 214411 R3; Modify Control Logic BNP AC Power System, dtd 02/22/07
00224331, Unit 1 Diesel Generators Exceed Station Blackout Criteria, dtd 03/02/07
00227605, Newly Install Dg4 EGB Governor Defective, dtd 03/29/07
00227843, Potential Non-Conforming Condition for EDG Relays Identified, dtd 03/29/07
00227854, Dg 4 Response During 2MST-DG14R, dtd 03/31/07
00227912, Unable to Meet Dg4 24 Month Load Test Criteria, dtd 04/01/07
00228346, Unplanned LCO Entry Due to Dg #3 Inoperability, dtd 04/04/07
00232815, BNP 95-002 Pre-inspection Self Assessment, dtd 5/11/07
00253752, Scaffold Deviations not Addressed on Scaffold Request Form, dtd 11/07/07
0098654, 250V Battery A Undervoltage and Battery B Charger Trouble, 7/14/03
96-03813, RCIC Min Flow Switch Cal Error, dtd 11/18/96

Modifications

EC 55876, Extend Qualified Lives of Rosemount Transmitters in EQ Program, dtd 1/18/06
ESR 95-00545, Interposing Relays to Improve Voltage at MCCs, Rev. 0
PMR 97-0798, 1-E51-FS-N002 & 1-E51-PSH-N020 Preventive Maintenance, dtd 9/11/97
EC 67877R7, Severe Accident Mitigation Guidelines Diesel Generators for the 125 VDC Battery Chargers
EC 68013RO, Risk Evaluation for BNP SAMG DG to Battery Charger Connections
EC 53426, Child EC to EC 46982, Modify 1-CAC-V7, Replace Bettis Limit Switches
EC 62035, Child EC to EC 50913, MOV 1/2-E11-F007A/B Operator Motor Gear Ratio Change Modification
EC 62037, Child EC to EC 50913, MOV 1/2-E11-F007A/B Operator Motor Gear Ratio Change Modification

EC 62046, Child EC to EC 50913, MOV 1/2-E11-F007A/B Operator Motor Gear Ratio Change Modification
EC 62048, Child EC to EC 50913, MOV 1/2-E11-F007A/B Operator Motor Gear Ratio Change Modification
EC 62052, Child EC to EC 50913, MOV 1/2-E11-F007A/B Operator Motor Gear Ratio Change Modification
EC 62054, Child EC to EC 50913, MOV 1/2-E11-F007A/B Operator Motor Gear Ratio Change Modification
EC 62075, Child EC to EC 50913, MOV 1/2-E11-F007A/B Operator Motor Gear Ratio Change Modification
EC 66292, Child EC to EC 46982, Modify 2-CAC-V8, Replace Bettis Limit Switches

Miscellaneous

Brunswick Task Time Validation for aligning SAMG Diesel 1 and 2 to Battery Chargers 1A-1/1A-2 and 1B-1/1B-2
Specification 9527-01-255-1, Specification for Air Compressors, Revised 3/8/73
Specification 9527-01-107-2, Specification for Unit Auxiliary Transformer, Revised 8/20/73
EEBNP-MISC-01, Engineering Evaluation of NUMARC 87-00 “Off-Site Power/EDG/Right-of-Way Categories for BSEP Units 1&2, Rev. 0
EC 61608, Supply Temporary Power to 1-OG-MOV-VB-1-MO, Rev. 2
BSEP 94-0383, CP&L Ltr to USNRC Re: Electrical Distribution System Enhancements, dtd 9/30/94
No-Load Disconnect Switch Commitment Evaluation, dtd 7/14/05
Brunswick Nuclear Plant response to IN 90-21, dtd 5/17/90
Specification 226-002, Sheet Metal Work, Rev. 12
Specification 9527-01-45-8, Specification for In-Line Fans, Rev. 4
Information Notice 91-085, Potential Failures of Thermostatic Control Valves for Diesel Generator Jacket Cooling Water, Rev. 1
Engineering Service Request ESR 9600393, Operability Assessment for HPCI/RCIC Testing – CR 96-01675, Rev. 0
NRC Inspection Report Nos. 50-325/98-14 and 50-325/98-14, dtd 3/18/99
NRC Regulatory Issue Summary 2006-23 Post-Tornado Operability Of Ventilating And Air-Conditioning Systems Housed In Emergency Diesel Generator Rooms, dtd 12/6/06
MISC-00104, UE&C Memo from M.J. DiDonato to J.H. Crowley, Tornado Venting of Diesel Generator Building, dtd 5/1/72
Engineering Evaluation Report (EER) 94-0199, Operability Evaluation of the Effects of Throttling the SW Discharge Valves and the DG Water Coolers, Rev. 1
234A9309RL Sh. 12, Instrument Data Sheet FT-E41-N008, Rev. 0
234A9310RL Sh. 4, Instrument Data Sheet FS-E51-N002, Rev. 0
BSEP 06-0026, Response to Generic Letter 2006-02, dtd 3/31/06
CP&L Letter NLS-88-182, Response to NRC Bulletin 88-04, dtd 8/8/88
EER 93-0176, Voltage Adequacy Determination for 480 VAC MCC Powered Safety Related Control Circuits, Rev. 1
Letter UC 20230, Relay Coordination Settings and Curves 4160 Volt Switchgear, dtd3/13/75
Letter UC14042, 4kV Switchgear Relay Settings, dtd 3/8/74
Letter UC16050, 4160V Relays, dtd 7/10/74
MNT-TRMX-00001, Substation Equipment Schedules, Rev. 2
FP-6950, Fisher Valves, Butterfly and Actuators, Rev. M
FP-85758, Atlas Copco Compressor, Rev. B
FP-3737 Bk. 2, Line Protective Relay Panels, Rev. E

FP-70262, Rosemount Transmitters Pressure/DP, Rev. N
FP-84072, Woodward Governors Speed Control, Rev. L
FP-84569, General Electric Relays, Rev. N
FP-85030, Yokogawa SLPC Programmable Indicating Controller for HPCI/RCIC, Rev. B
FP-9263, Barton Installation and Operation Manuals for Switches Indicators and Differential Pressure Units, Rev. E
FP-82435 General Electric Vendor Manual for Molded Case Circuit Breakers, Rev. F
FP-3808 Power Conversion Products Vendor Manual, Rev. G
Battery History as prepared by Leo Kuffel, dtd 11/8/007
Valve 1-CAC-V7-AO Diagnostic Traces (WO 00428405, Task 02), dtd 3/16/04
Valve 1-CAC-V7-AO Analysis of AOV Diagnostic Data (unreviewed), dtd 3/16/04
Valve 1-CAC-V7-AO Analysis of AOV Diagnostic Data, dtd 10/7/03
Valve 2-CAC-V7-AO Diagnostic Traces (WO 00738516, Task 05), dtd 3/19/07
Valve 2-CAC-V7-AO Analysis of AOV Diagnostic Data, dtd 4/16/03
Valve 1-E11-F007A Rising Stem Static Test Analysis (WO 684518, Task 01), dtd 2/23/06
Valve 1-E11-F007B Rising Stem Static Test Analysis (WO 667682, Task 01), dtd 1/26/06
Valve 2-E11-F007A Rising Stem Static Test Analysis (WO 471003, Task 05), dtd 11/1/06
Valve 2-E11-F007B Rising Stem Static Test Analysis (WO 471001, Task 06), dtd 2/21/07
Valve 1-E11-F024B Motor Operated Valve Votes Trace Review Sheet (WR/JO AION-001), dtd 3/13/00
Valve 2-E11-F024B Rising Stem Static Test Analysis (WO 30676, Task 01), dtd 2/1/02
Engineering Service Request (ESR) 99-00241, Rev. 0 (Drill holes in discs of 1-E1-F007A/B
IST Historical Data Report (Stroke Timing) of 1/2-E11-F007A/B and 1/2 E11-024B per 0PT-08.2.2b and 0PT-08.2.2c (over last ten years)
IST Historical Data Report (Stroke Timing) of 1/2-CAC-V007/8 per 0PT-16.1.1 (over last ten years)
Local Leak Rate Testing Historical Data Report for 1/2-CAC-V007/8 (since 1990)
FP-20243, Limitorque Valve Operators, Rev. N
FP-61027, Posi-Seal Valves, Rev. J
FP-61761, Anchor Darling Valve Company Valves and Operators, Rev. U
FP-61808, Dezurik Valves, Rev. D
FP-66015, Valtek Valves, Rev. N
FP-82508, Bettis Corp. Valve Actuators, Rev. M

<u>Corrective Action documents initiated due to CDBI activity</u>:

NCR 00253752, Scaffold Deviations Not Addressed on Scaffold Request Form, dtd 11/7/07
NCR 00253918, Scaffold Deviations Not Captured After Modification, dtd 11/8/07
NCR 00254016, Installed 1D-SA Compressor Door Lock Handle Not on BOM(CDBI), dtd 11/8/07
NCR 00254029, SW Crosstie Valve Locking Device Not Shown on P&ID, dtd 11/8/07
NCR 00254033, DG Starting Air Pilot Airline Support Discrepancies
NCR 00254035, Affect of HI DC Volt on Non-safety Related Components (CDBI), dtd 11/8/07
NCR 00254400, P&ID Matchmark Location Errors
NCR 00256469, Continuation Drawing References to F-03002 at A3 and B7 are Incorrect, dtd 11/27/07
NCR 00256861, No RMS Record of 0PT-31.1 for B218R1, dtd 11/28/07
NCR 00257150, HPCI – RCIC Max Running Speed PMS Closed with No Work, dtd 11/30/07
NCR 00257810, HPCI – RCIC Instrument Uncertainty, dtd 12/5/07
NCR 00258278, Attachment to Calculation BNP-MEC-DJCW-001 not vaulted, dtd 12/7/07
NCR 00258608, Calculation Update Requirements Identified During CDBI

NCR 00258875, Blowout Panel in EDG Building Open, dtd 12/12/07
NCR 00258755, Clarification to UFSAR Section 6.2.4.1
NCR 00259088, Inaccurate, Non-Conservative Assumption – Calculation 0VA-0033