UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931

SEPTEMBER 12, 2002

Duke Energy Corporation
ATTN: Mr. W. R. McCollum
Vice President
Oconee Site
7800 Rochester Highway
Seneca, SC 29672

SUBJECT: OCONEE NUCLEAR STATION - NRC INSPECTION REPORT 50-269/02-09, 50-270/02-09, AND 50-287/02-09

Dear Mr. McCollum:

On August 2, 2002, the Nuclear Regulatory Commission (NRC) completed a safety system design and performance capability inspection at your Oconee Nuclear Station. The enclosed report documents the inspection findings which were discussed on August 2, 2002, with Mr. L. Nicholson and other members of your staff.

This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your operating license. Within these areas, the inspection involved selected examination of procedures and representative records, observations of activities, and interviews with personnel. However, the ongoing design changes and proposed modifications to the emergency core cooling systems were not included within the scope of this inspection.

On the basis of the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.790 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 Publically 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).

Should you have any questions concerning this letter, please contact us.

Sincerely,

/ORIGINAL SIGNED BY JAMES MOORMAN FOR RA/

Charles R. Ogle, Chief
Engineering Branch 1
Division of Reactor Safety

Docket Nos. 50-269, 50-270, 50-287
License Nos. DPR-38, DPR-47, DPR-55

Enclosure: NRC Inspection Report 50-269/02-09,
50-270/02-09, 50-287/02-09 w/Attachments

cc w/encl:
Compliance Manager (ONS)
Duke Energy Corporation
Electronic Mail Distribution

Lisa Vaughn
Legal Department (PB05E)
Duke Energy Corporation
422 South Church Street
Charlotte, NC 28242

Anne Cottingham
Winston and Strawn
Electronic Mail Distribution

Beverly Hall, Acting Director
Division of Radiation Protection
N. C. Department of Environmental
Health & Natural Resources
Electronic Mail Distribution

Henry J. Porter, Director
Div. of Radioactive Waste Mgmt.
S. C. Department of Health and
Environmental Control
Electronic Mail Distribution

(cc w/encl cont'd - See page 3)

(cc w/encl cont'd)
R. Mike Gandy
Division of Radioactive Waste Mgmt.
S. C. Department of Health and
Environmental Control
Electronic Mail Distribution

County Supervisor of
Oconee County
415 S. Pine Street
Walhalla, SC 29691-2145

Lyle Graber, LIS
NUS Corporation
Electronic Mail Distribution

M. T. Cash, Manager
Nuclear Regulatory Licensing
Duke Energy Corporation
526 S. Church Street
Charlotte, NC 28201-0006

Peggy Force
Assistant Attorney General
N. C. Department of Justice
Electronic Mail Distribution

U.S. NUCLEAR REGULATORY COMMISSION
REGION II

Docket Nos:	50-269, 50-270, 50-287
License Nos:	DPR-38, DPR-47, DPR-55
Report Nos:	50-269/02-09, 50-270/02-09, 50-287/02-09
Licensee:	Duke Energy Corporation
Facility:	Oconee Nuclear Station, Units 1, 2, and 3
Location:	7800 Rochester Highway Seneca, SC 29672
Dates:	July 15 - 19, 2002 (Week 1) July 29 - August 2, 2002 (Week 2)
Inspectors:	J. Lenahan, Senior Reactor Inspector (Lead Inspector) M. Thomas, Senior Reactor Inspector M. Scott, Senior Reactor Inspector E. Christnot, Resident Inspector S. Sanchez, Resident Inspector (Week 2 only)
Approved By:	Charles R. Ogle, Chief Engineering Branch 1 Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000269-02-09, IR 05000270-02-09, IR 05000287-02-09, Duke Energy Corporation, on 7/15 -8/02/2002, Oconee Nuclear Station, Units 1, 2, & 3, safety system design and performance capability biennial baseline inspection.

This safety system design and performance capability inspection was conducted by regional and resident inspectors.

No findings of significance were identified.

REPORT DETAILS

1. REACTOR SAFETY

CORNERSTONES: Initiating Events, Mitigating Systems

1R21 Safety System Design and Performance Capability (71111.21)

.1 System Needs

a. Inspection Scope

Energy Sources

The team reviewed the over-current protection for selected circuits to verify that the over-current protection devices would not spuriously interfere with equipment fulfilling its safety function, and secondarily, that protection was provided. Specific over-current devices reviewed were the over-current relays for the high pressure injection (HPI) pumps as well as the magnetic-only molded-case circuit breakers for the borated water storage tank (BWST) outlet valves and the reactor building emergency sump outlet valves. Data sheets for the last calibrations of the over current relays for the HPI pumps were reviewed to verify that the calibrations had been performed at the required intervals and that excessive drift was not taking place.

Controls

The team reviewed the uncertainty calculations for the BWST level indication that are used by the operators to manually swap over the pump suctions from the BWST to the reactor building emergency sump. The reviews were performed to verify that the level indication ensured that sufficient water inventory was available from the BWST prior to the manual swap over.

Operator Actions

The team reviewed selected normal operating procedures and emergency operating procedures (EOPs) associated with a small break loss of coolant accident (SBLOCA), low pressure injection system (LPI), and HPI systems to verify that the procedures specified operator actions that were consistent with design and licensing requirements during SBLOCA scenario conditions. The team discussed selected tasks (e.g., job performance measures and simulator guides) with operations personnel to understand operator actions and important equipment functions. Operator actions were also evaluated for consistency with events described in the Updated Final Safety Analysis Report (UFSAR), hydraulic model calculations, and EOP sections. The team also reviewed Specification OSS-0254.00-00-4005, Design Basis Specification for the Design Basis Events, Revision 7, which identified certain time critical operator actions. This review was performed to determine the basis for the time requirements for performing certain time critical operator actions to mitigate a SBLOCA event. The team performed a walkdown of the simulator and main control room instrumentation and alarms to verify that appropriate indications and controls were available and adequate for operators to

make the necessary decisions during performance of the specific operating procedure and EOP actions. The team observed a licensee's demonstration of a simulator response to a SBLOCA event to verify that emergency sump swap over timing, sump level at swap over, and HPI pump injection flows were consistent with design requirements.

b. Findings

No findings of significance were identified.

.2 Selected System Conditions and Capability

a. Inspection Scope

Installed Configuration

The team performed a field walkdown of accessible equipment related to the HPI, LPI and building spray systems and support systems, for all units, to assess material condition, identify degraded equipment, and verify that installed configurations were consistent with design drawings and procedures. Equipment examined included the BWST, the LPI, HPI, and building spray pumps, HPI and LPI system piping and valves, and BWST instrumentation. The team also examined the over-current relays, the switchgear circuit breakers, and the motor control center (MCC) cubicles applicable to the HPI pumps, BWST outlet valves, and the reactor building emergency sump outlet valves.

Operations

The team reviewed corrective maintenance histories, problem investigation process reports (PIPs), and work orders for the HPI and LPI pumps, as well as systems' flow and vibration trending data to evaluate the performance of the HPI and LPI systems and to identify any trends indicating degrading equipment. The team also reviewed the vendor manual and selected preventive maintenance procedures and activities for the HPI pumps to determine if proper maintenance practices were established and if the licensee's maintenance program was consistent with the pump's historical performance trends and manufacturer's recommendations. In addition, the team reviewed corrective maintenance, PIPs, and work orders for the HPI pump motor breakers, as well as the MCC cubicle power supplies for the BWST outlet valves and the reactor building emergency sump outlet valves to evaluate the performance of the system power supplies and to identify any trends indicating degraded equipment. The team reviewed maintenance work histories and PIPs for valves HP-24, HP-25, HP-188, HP-240, HP-246, LP-15, LP-16, LP-19, and LP-20, to evaluate the performance of the valves and to identify trends which indicated degradation. This review was also performed to verify that applicable motor operated valves had been evaluated for and actions taken to address pressure locking and/or thermal binding.

Design

The team reviewed the applicable pump vendor manual, the UFSAR, vendor correspondence, applicable section of the Framatome technical basis documents for the EOPs, and the Technical Specifications to verify vendor recommendations and licensing basis requirements had been appropriately translated into the design calculations and safety evaluations. Net positive suction head and hydraulic model calculations were reviewed to verify that adequate water levels were available in the BWST and containment sump, and that vortexing had been addressed in the calculations. Review of the BWST calculations included verification that environmental parameters were incorporated when calculating instrument uncertainties.

Testing

The team reviewed completed test and inspection results to assess the licensee's actions to verify and maintain the safety function, reliability, and availability of selected components in the HPI and LPI systems. The team compared pump test data, ASME Code (Section 11, Subsection ISTB, OM Code-1996) pump testing requirements, and HPI and LPI vendor pump curve data, and systems' model calculations for the performance parameters under SBLOCA scenario conditions. Test and inspection results were reviewed to verify that: 1) test acceptance criteria and test results appropriately considered differences between testing conditions and design requirements during accident conditions for both full flow and recirculation modes; 2) test and inspection results met established acceptance criteria; and 3) test results considered instrument inaccuracies and differences. Components reviewed included the HPI and LPI pumps, the HPI and LPI motor operated valves, and selected check valves. The team also reviewed calibration records for the last three calibrations performed on the BWST level transmitters to verify they were calibrated in accordance with setpoint documents and plant procedures, that out-of-tolerance conditions were adequately addressed, and that test results considered instrument inaccuracies and differences.

b. Findings

No findings of significance were identified

.3 Inspect Selected Components

a. Inspection Scope

Component Degradation

The team reviewed PIPs, maintenance work orders, and surveillance records to assess the licensee's actions to verify and maintain the safety function, reliability and availability of selected components for the HPI and LPI systems. Components included in this review were the HPI motor coolers, and low pressure and high pressure service water components that support HPI motor cooling and the decayed heat removal coolers, and

the MCC power supplies to the BWST outlet valves and the reactor building emergency sump outlet valves. The team also reviewed the preventive maintenance procedure for the type 7.5HK 4160 volt circuit breakers manufactured by ITE (ABB) and the performance history (i.e. the number of failures to trip or close on demand) of the type 7.5HK circuit breakers. Records of the last preventive maintenance performed on the HPI pump breakers were also reviewed. In addition, the team reviewed the licensee's augmented inservice inspection program for nondestructive examination and evaluation of thermal sleeves in the HPI nozzle safe ends to verify that the licensee's program was effective in identifying and repairing cracks in the thermal sleeves. The team also reviewed the licensee actions to address NRC Information Notice 00-08, "Inadequate Assessment of the Effect of Differential Temperatures on Safety-Related Pumps," (Operating Experience Data Base Number 00-025322, dated 6/20/2000).

Modifications/Design Changes

The team reviewed selected design changes to verify that system and equipment function were appropriately evaluated, maintained, and that they had not reduced system performance or introduced additional risk into the design. However, the ongoing design changes and proposed modifications to the emergency core cooling systems were not included within the scope of this inspection. The team reviewed the replacement of C-Y breaker motor starters to verify that replacement of the starters had no impact to safety and would not affect the availability, capability, or function of ESFAS in the mitigation of an SBLOCA. Other design changes reviewed included the modifications to remove the engineered safeguards signal from the BWST outlet isolation valves (3LP-21 and 3LP-22).

Equipment Protection

The team reviewed the procedures controlling inspection of the reactor containment buildings after completion of outages which are performed to prevent introduction of debris into the reactor building sump or which could impede flow into the sump during the recirculation mode following a SBLOCA.

b. Findings

No findings of significance were identified.

.4 Identification and Resolution of Problems

a. Inspection Scope

The team reviewed selected PIPs and respective corrective actions related to the HPI and LPI systems and their support systems to evaluate failure trends and assess the adequacy of corrective actions for identified problems. In addition, the team reviewed corrective actions related to the reactor building emergency sump outlet valves as well as their power supplies and motors. The team also reviewed selected self-assessment reports which documented the results of the licensee's periodic self-assessments

performed in the areas of engineering and seismic qualification for various systems including the HPI and LPI systems and supporting systems.

b. Findings

No findings of significance were identified

OTHER ACTIVITIES

4OA2 Open Item Followup

(Closed) VIO 50-269,270,287/01-06-01, Inadequate 10 CFR 50.59 Safety Evaluation Associated With Revising UFSAR Section 3.2.2 to Remove the Spent Fuel Pool as a Suction Source for a High Pressure Injection Pump After Certain Tornadoes

The team reviewed the corrective actions stated in the licensee's response to this violation dated August 14, 2001. The corrective actions included 1) implementing a change to the UFSAR which restored the reference to the HPI/spent fuel pool (SFP) flow path verbiage to its pre-violation status and 2) providing training to applicable personnel on the differences between the old and new 10 CFR 50.59 processes. The team reviewed the revised 10 CFR 50.59 for the UFSAR change and verified that the HPI/SFP flow path reference had been incorporated back into the UFSAR per the June 27, 2002, submittal to the NRC. The team verified that training on the new 10 CFR 50.59 process had been provided to licensee personnel involved in performing 10 CFR 50.59 screenings and/or safety evaluations. The team also noted that the licensee submitted a License Amendment Request (dated June 7, 2002) to the NRC to eliminate from the UFSAR credit for the HPI/SFP flow path during certain tornadoes. This violation is closed.

4OA6 Management Meetings

The lead inspector presented the inspection results to Mr. L. Nicholson, and other members of the licensee's staff at an exit meeting on August 2, 2002. The licensee acknowledged the findings presented. Proprietary information is not included in this inspection report.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

S. Batson, Mechanical/Civil Engineering Manager
E. Burchfield, Special Projects Engineering Manager
W. Foster, Safety Assurance Manager
D. Garland, Operations
R. Jones, Station Manager
R. Leatherwood, HPI System Engineer
W. McCollum, Site Vice President, Oconee Nuclear Station
L. Nicholson, Regulatory Compliance Manager
J. Paterson, LPI System Engineer
J. Smith, Senior Specialist, Regulatory Compliance
J. Weast, Senior Specialist, Regulatory Compliance

Other licensee employees contacted included engineers, operations personnel, and administrative personnel.

NRC

D. Billings, Resident Inspector
S. Freeman, Resident Inspector
M. Shannon, Senior Resident Inspector

ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

URI 50-269, 270, 287/01-06-01	Inadequate 10 CFR 50.59 Safety Evaluation Associated With Revising UFSAR Section 3.2.2 to Remove the Spent Fuel Pool as a Suction Source for a High Pressure Safety Injection Pump after Certain Tornadoes (Section 4OA2)

APPENDIX

LIST OF DOCUMENTS REVIEWED

Procedures

EP/1/A/1800/001, Emergency Operating Procedure, Unit 1, Rev. 30
EP/2/A/1800/01, Emergency Operating Procedure (Unit 2), Rev. 32
EP/3/A/1800/01, Emergency Operating Procedure (Unit 3), Rev. 30
IP/0/A/0203/01A, Low Pressure Injection System Borated Water Storage Tank Level Instrument Calibration, Rev. 32
IP/0/A/0203/01E, Low Pressure Injection System RB Emergency Sump Level Instrument Calibration, Revisions 29 and 30
IP/0/A/2001/03A, Inspection and Maintenance of 4.16 KV and 6.9KV ACB's, Rev. 19
IP/0/A/2001/03C, Inspection and Maintenance of ITE Type HK Metal-Clad Switchgear, Associated Bus, and Disconnects, Rev. 9
IP/0/A/2001/03H, Refurbishing 5HK, 7.5HK, and 15HK Air Circuit Breakers, Rev. 10
MP/0/A/1800/112, Installation of Piping Orifice Plate, Rev. 11
NDE 105, Radiographic Examination of Oconee Nuclear Station Thermal Sleeves, Rev. 4
OP/1/A/1102/001, Controlling Procedure for Unit Startup (TYPICAL for LP-28 locked open for BWST supply to ECCS) Rev. 244
OP/1/A/1102/020 A, Primary Rounds (Enclosure 4.1, HPI pump cooling Water Flow) Rev. 4
OP/1/A/1104/002A, HPI Pump Maintenance and Testing, Rev. 9
PT/1/A/0230/015, High Pressure Injection Motor Cooler Flow Test, Rev. 18
PT/3/A/0150/055, 3LP-17 & 3LP-18 Flow Test, Rev. 0

Calculations

Calculation No. OSC-1579, HPI Pumps NPSH Anaylsis (Injection from BWST), Rev. 1
Calculation No. OSC 1925, Post Accident Reactor Building Water Level Following a Large Break LOCA (Unit 1), Rev. 5
Calculation No. OSC 1948, Post Accident Reactor Building Water Level Following a Large Break LOCA (Unit 2), Rev. 5
Calculation No. OSC 1969, Post Accident Reactor Building Water Level Following a Large Break LOCA (Unit 3), Rev. 5
Calculation No. OSC-2043,HPI Pump Motor Upper Bearing Cooling Report, Rev. 4
Calculation No. OSC-2578, Wide Range Reactor Building Level Instrument Loop Accuracy Calculation, Rev. 6
Calculation No. OSC 2820, Document the Various Sources and/or Derivations of the Setpoints Included in the Oconee Nuclear Station Emergency Operating Procedures (EOPs), Rev. 20
Calculation No. OSC-3077, Low Pressure Injection Pump Minimum Flow Verification, Rev. 1
Calculation No. OSC 3189, Uncertainty of the Level Measurement Instrumentation Associated With the Oconee Borated Water Storage Tanks, Rev. 4
Calculation No. OSC-4083, HPI Flow Loop Instrument Accuracy, Rev. 5
Calculation No. OSC 6111, Small Break Loss of Coolant Accident (SBLOCA): Event Mitigation Requirements, Rev. 10

Calculation No. OSC-6015, Operatability Evaluation for PIP O-093-0660, Rev. 3
Calculation No. OSC-7480, LPI/HPI Hydraulic Analysis (EOP Basis), Rev. 1

Drawings

ONTC-0-101A-003-001, High Pressure Injection System Pump Performance Test, Rev. 0
OFD-101A-1.1, High Pressure Injection System Flow Diagram (Letdown Section), Rev. 34
OFD-101A-1.2, High Pressure Injection System Flow Diagram (Storage Section), Rev. 26
OFD-101A-1.3, High Pressure Injection System Flow Diagram (Charging Section), Rev. 14
OFD-101A-1.4, High Pressure Injection System Flow Diagram (Charging Section), Rev. 32
OFD-101A-1.5, High Pressure Injection System Flow Diagram (SSF Portion), Rev. 18
OFD-101A-2.3, Unit 2, Flow Diagram of High Pressure Injection System (Charging Section), Rev. 15
OFD-101A-3.3, Unit 3, Flow Diagram of High Pressure Injection System (Charging Section), Rev. 14
OFD-102A-1.1, Unit 1, Flow Diagram of Low Pressure Injection System (Borated Water Supply & LPI Pump Suction), Rev. 36
OFD-102A-1.2, Low Pressure Injection System Flow Diagram (LPI Pump Discharge), Rev. 35
OFD-102A-1.3, Low Pressure Injection System Flow Diagram (Core Flood), Rev. 18
OFD-102A-2.1, Unit 2, Flow Diagram of Low Pressure Injection System (Borated Water Supply & LPI Pump Suction), Rev. 29
OFD-102A-3.1, Unit 3, Flow Diagram of Low Pressure Injection System (Borated Water Supply & LPI Pump Suction), Rev. 42
OFD-102A-1.2, Unit 1, Flow Diagram of Low Pressure Injection System (LPI Pump Discharge), Rev. 35
OFD-102A-2.2, Unit 2, Flow Diagram of Low Pressure Injection System (LPI Pump Discharge), Rev. 31
OFD-102A-3.2, Unit 3, Flow Diagram of Low Pressure Injection System (LPI Pump Discharge), Rev. 26

Problem Investigation Process Reports (PIPs)

HPI System: PIP O-01-108, 01-1071, 01-1478, 01-1851, 01-1914, 01-4000, 02-1650, 02-1673, 02-2319, 02-2316, 00-2409, 01-04331, 01-05287, 01-00626, 02-01518, 02-02420, 02-02164
LPI System: PIP O-01-480, 01-1673, 01-4460, 01-4465, 01-4481, 01-4490, 01-5308, 02-384, 02-840, 02-1374, 02-1428, 02-1608, 02-1897, 02-2272, 01-04997, 01-01496, 01-03757, 01-03432, 01-04797, 01-01306, 01-04217, 01-02978, 01-01741, 01-01209, 01-01753, 01-01464, 01-00941, 02-01840, 02-01978
Other Related PIPs: PIP O-98-0037, 99-4485, 00-1225, 00-1225, 00-4746, 01-3757, 01-4118, 02-1357, 98-0129, 01-0768, 97-4378, 98-0135, 01-4546, 01-4514, 99-0902, 99-2788, 01-0432, 01-0455, 01-1225, 01-2188, 01-2791, 01-3222, 02-0619, 02-0771, 02-2033, 02-3505, 02-3709, 02-3785, and G-02-00054

PIPs Written During This Inspection

O-02-3709, Over pressurization of LPI System during SBLOCA Mitigation
O-02-3785, Guidance to Open the Alternate LOCA Dilution Path Following Failure of the Primary Flow Path.
O-02-3926, Failure to Perform Routine Preventative Maintenance on HPSW Regulators to HPI Pump Motor Coolers.
O-02-4027, EOP Deviation from BWOG Technical Basis Document.

Calibration Records for the Following Instruments

1LT-3P	1LT-132	2LPIP-326	2CR-401	3LT-6
1LT-112	1P-345	2LCR-95	3LT-3P	3LT-132
1LPIP-325	1P-346	2LT-2A	3LT-112	3P-345
1LPIP-326	1CR-401	2LT-6	3LPIP-325	3P-346
1LCR-95	2LT-3P	2LT- 132	3LPIP-326	3CR-401
1LT-2A	2LT-112	2P-346	3LCR-95	1LT-90A
1LT-6	2LPIP-325	2P-345	3LT-2A	1LT-90B
1P-304	1CR-85	1LT-91A	1LT-91B	1P-305
2LT-90A	2LT-90B	2P-304	2CR-85	2LT-91A
2LT-91B	2P-305	3LT-90A	3LT-90B	3P-304
3CR-85	3LT-91A	3LT-91B	3P-305	

Completed Surveillances, Tests, and Calibrations

IP/0/A/0203/01A, Low Pressure Injection System Borated Water Storage Tank Level Instrument Calibration, Revisions 19, and 30, calibration procedure for Unit's 1, 2 , and 3 level indication instrumentation strings
IP/0/A/0203/01E, Low Pressure Injection System RB Sump Level Instrument Calibration, Revisions 29 and 30, calibration procedure for Unit's 1, 2 , and 3 level indication instrumentation strings
IP/0/A/0203/01H, Wide Range Reactor Building Water Level Instrument Calibration, Rev. 27, calibration procedure for Unit's 1, 2 , and 3 level indication instrumentation strings
PT/1/A/0151/007, Penetration 7, Leak Rate Test, Rev. 8 [completed 4/5/02]
PT/1/A/0152/012, Low Pressure Injection System Valve Stroke Test, completed 4/5/02
PT/2/A/0152/012, Low Pressure Injection System Valve Stroke Test, completed 8/5/01
PT/3/A/0152/012, Low Pressure Injection System Valve Stroke Test, completed 11/19/01
PT/1/B/0202/001P, R.C. Pump Seal Header Flow Control Instrument Calibration, Rev. 28 [completed 3/30/02]
PT/1/A/0202/011, Rev. 68, High Pressure Injection Pump Test (TYPICAL for 10 years, all units) [completed 7/25/02]
PT/1/A/0251/024, HPI Full Flow Test, Rev 17 (TYPICAL for 10 years, all units)
PT/1/A/0203/006B, Low Pressure Injection Pump test, Rev 16 (TYPICAL for 10 years, all units)
TT/1/A/0150/050, 1LP-16 Differential Pressure Test, completed 6/27/99, 11/26-27/00
TT/2/A/0150/050, 2LP-15 Differential Pressure Test, completed 5/8/98, 11/8/99, 4/29/01
TT/3/A/0150/050, 3LP-16 Differential Pressure Test, completed 11/24/98, 5/13/00, 11/14/01

TT/3/A/0150/055, 3LP-17 & 3LP-18 Flow Test, Rev. 0 [completed 5/30/00]

Completed Work Orders (WO) and Work Requests (WR)

WO 98023744, Calibrate Unit 1 BWST Level Indication - Overflowed
WO 98086149, Calibrate Unit 2 BWST Level Indication Transmitters
WO 98117301, Replace Oil in 3C HPI Pump Motor
WR 98120582, Rack in 2C HPI Pump Motor Breaker
WO 98139985, LP-60/61 (model for all units, invoked procedure MP/0/A/1200/077 for surveillance)
WR 98149489, 1B HPI Pump Motor Breaker Tripped Shortly After Closing
WO 98154486, Check Operation of Unit 3 Reactor Building Sump Level Indicator and Recorder
WO 98166152, Take Oil Sample From 3C HPI Pump Motor
WO 98168874-03, 1LP-5 Clean/Inspect Contacts at Motor Control Center/Starter
WO 98191272-01, Replace 1C HPI pump motor
WR 98224133, Install De-Clutching Extension on Low Pressure Injection Valve 1LP-17
WO 98247715-01, 1LP-1 Perform Mechanical/Electrical Preventive Maintenance
WO 98247720-01, 1LP-2 Perform Mechanical/Electrical Preventive Maintenance
WO 98274747, Repair Unit 3 Channel C BWST Level Recorder
WO 98316692-02, Replace 1B HPI Pump
WO 98369274, Repair Unit 2 Reactor Building Wide Range Level Recorder
WO 98386589, Unit 1 Reactor Building Sump Level Erratic Indication
WO 98415785-01, 1LP-3 Perform Mechanical/Electrical Preventive Maintenance
WO 98477838-01, Unit 1, Reactor Building Emergency Sump Level Erratic
WO 98479581, Low Pressure Injection Valve 1LP-18 Failed to Close

Motor Operated Valve Static Tests:

3LP-16 WO 98382618-04, 11/5/01
2LP-15 WO 98281134-01, 4/30/01
1LP-15 WO 98427568-01, 4/16/02
3LP-15 WO 97014656-07, 1/11/99
2LP-16 WO 98332566-01, 5/02/01
1LP-16 WO 98226638-05, 3/22/02

Modifications:

OE 12791, Replace Type C-Y starters in MCC 1XS1, 11/3/99 (completed)
ONOE-15736, Remove the ES Signal to Valve 3LP-22 (3B BWST Outlet Isolation Valve)
ONOE-15735, Remove the ES Signal to Valve 3LP-21 (3A BWST Outlet Isolation Valve)

Design Basis Specifications

Specification OSS-0254.00-00-1001, High Pressure Injection and Purification & Deborating Demineralizer Systems, Rev. 19

Specification OSS-0254.00-00-1028, Low Pressure Injection and Core Flood System (LPI), Rev. 14
Specification OSS-0254.00-00-4005, Design Basis Events, Rev. 7

Updated Final Safety Analysis Report (UFSAR)

Section 3.4.1.1.2, Flood Protection Measures Inside Containment
Section 7.5.2.6, Borated Water Storage Tank Level
Section 7.5.2.17, Reactor building Sump Water Level Narrow Range
Section 7.5.2.18, Reactor building Sump Water Level

Technical Specifications

3.3.8, Post Accident Monitoring (PAM) Instrumentation, Function 6, Containment Sump Water Level (Wide Range), and Function 14, Borated Water Storage Tank Water Level
3.5.4, Borated Water Storage Tank (BWST)
SLC 16.7.11, Display Instrumentation, Function 8, Reactor Building Emergency Sump Level

Miscellaneous Documents

1A HPI Motor Lubrication Data Sheet, ON1HPIMR0001PU, annual
VHTB-24 Pump Curve OM 1201-399, 5/11/70
Vendor Manual, Ingersoll-Rand NSSS Pumps, File Number OM 201.1704.001, dated 7/23/02
Vendor Manual OM-302-105, Instruction Manual and Renewal Parts for 5HK and 7.5HK Breakers
Vendor Manual OM-308-356, Instruction Manual for Motor Control Centers
Duke Power Metallurgical Analysis Report ONS 3 - Thermal Sleeve from 3B1 HPI Makeup Nozzle, dated 1/30/02
Duke Power Metallurgical Analysis Report ONS 3 - Thermal Sleeve from 3A1 HPI Makeup Nozzle, dated 1/30/02
Assessment Report SA-00-50(ON)(SRG), Review of Compliance with NSD 104 as it Relates to Seismic Interaction Concerns
Assessment Report SA-01-01(ALL)(RA), Engineering Functional Area Assessment