October 8, 2004

Mr. Lew W. Myers
Chief Operating Officer
FirstEnergy Nuclear Operating Company
Perry Nuclear Power Plant
P. O. Box 97, A290
10 Center Road
Perry, OH 44081

SUBJECT: PERRY NUCLEAR POWER PLANT, UNIT 1
NRC COMBINED BIENNIAL ENGINEERING INSPECTIONS
INSPECTION REPORT 05000440/2004010(DRS)

Dear Mr. Myers:

On August 27, 2004, the U.S. Nuclear Regulatory Commission (NRC) completed combined biennial engineering inspections at your Perry Nuclear Power Plant, Unit 1. The enclosed report documents the inspection findings, which were discussed on August 27, 2004, with you and other members of your staff.

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

The combined inspections focused on the: (1) evaluations of changes, tests or experiments; (2) permanent plant modifications; and (3) safety system design and performance capability (SSDPC) of selected systems. Specifically, the SSDPC portion of the inspection focused on the design and performance capability of the emergency diesel generators and the high pressure core spray system to ensure that they were capable of performing their required safety-related functions.

Based on the results of this inspection, no findings of significance were identified. However, a licensee-identified violation which was determined to be of very low safety significance is listed in Section 4OA7 of this report.

In accordance with 10 CFR Part 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made 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/

Julio F. Lara, Chief
Electrical Engineering Branch
Division of Reactor Safety

Docket No. 50-440
License No. NPF-58

Enclosure: Inspection Report 05000440/2004010(DRS)
w/Attachment: SUPPLEMENTAL INFORMATION

See Attached Distribution

cc w/encl: G. Leidich, President - FENOC
J. Hagan, Senior Vice President Engineering
and Services, FENOC
W. O'Malley, Director, Maintenance Department
V. Higaki, Manager, Regulatory Affairs
J. Messina, Director, Nuclear
Services Department
T. Lentz, Director, Nuclear
Engineering Department
F. von Ahn, Plant Manager,
Nuclear Power Plant Department
M. O'Reilly, Attorney, FirstEnergy
Public Utilities Commission of Ohio
Ohio State Liaison Officer
R. Owen, Ohio Department of Health

In accordance with 10 CFR Part 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made 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/

Julio F. Lara, Chief
Electrical Engineering Branch
Division of Reactor Safety

Docket No. 50-440
License No. NPF-58

Enclosure: Inspection Report 05000440/2004010(DRS)
w/Attachment: Supplemental Information

See Attached Distribution

DOCUMENT NAME: C:\ORPCheckout\FileNET\ML042820605.wpd
To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	RIII	E	RIII		RIII			
NAME	JLara for GHausman:tr		PPelke for MRing		JLara			
DATE	10/06/04		10/06/04		10/06/04			

OFFICIAL RECORD COPY

cc w/encl: G. Leidich, President - FENOC
J. Hagan, Senior Vice President Engineering
and Services, FENOC
W. O'Malley, Director, Maintenance Department
V. Higaki, Manager, Regulatory Affairs
J. Messina, Director, Nuclear
Services Department
T. Lentz, Director, Nuclear
Engineering Department
F. von Ahn, Plant Manager,
Nuclear Power Plant Department
M. O'Reilly, Attorney, FirstEnergy
Public Utilities Commission of Ohio
Ohio State Liaison Officer
R. Owen, Ohio Department of Health

ADAMS Distribution:
AJM
DFT
SPS1
RidsNrrDipmIipb
GEG
HBC
RJP
CAA1
C. Pederson, DRS (hard copy - IR's only)
DRPIII
DRSIII
PLB1
JRK1
ROPreports@nrc.gov

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-440
License No:	NPF-58
Report No:	05000440/2004010(DRS)
Licensee:	FirstEnergy Nuclear Operating Company (FENOC)
Facility:	Perry Nuclear Power Plant, Unit 1
Location:	P. O. Box 97, A210 10 Center Road Perry, OH 44081
Dates:	August 9, 2004 through August 27, 2004
Inspectors:	R. Daley, Senior Reactor Inspector G. Hausman, Senior Reactor Inspector, Lead M. Herlihy, Mechanical Engineering Contractor B. Jose, Reactor Inspector G. O'Dwyer, Reactor Inspector R. Oft, Mechanical Engineering Contractor S. Sheldon, Reactor Inspector
Approved by:	J. Lara, Chief Electrical Engineering Branch Division of Reactor Safety

Enclosure

TABLE OF CONTENTS

SUMMARY OF FINDINGS

IR 05000440/2004010(DRS); 08/09/2004 - 08/27/2004; Perry Nuclear Power Plant, Unit 1; Combined Biennial Engineering Inspections of Routine Evaluations of Changes, Tests, or Experiments and Routine Permanent Plant Modifications concurrent with the Safety System Design and Performance Capability (SSDPC) Inspection.

This report covers announced combined biennial engineering inspections of evaluation of changes, tests, or experiments and permanent plant modifications concurrent with the SSDPC inspection. The inspection was conducted by five Region III inspectors and two mechanical engineering contractors. The inspection focused on the design and performance capability of the emergency diesel generators and the high pressure core spray system to ensure that they were capable of performing their required safety-related functions.

A. Inspector-Identified and Self-Revealed Findings

Cornerstone: Initiating Events

No findings of significance were identified.

Cornerstone: Mitigating Systems

No findings of significance were identified.

Cornerstone: Barrier Integrity

No findings of significance were identified.

B. Licensee-Identified Violations

A violation of very low safety significance, which was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and the licensee's corrective action tracking number is listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

The plant operated at or near full power throughout the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R02 Evaluations of Changes, Tests, or Experiments (71111.02)

.1 Review of 50.59 Evaluations and Screenings

a. Inspection Scope

The inspectors reviewed five evaluations performed pursuant to 10 CFR Part 50.59. The evaluations related to permanent plant modifications, setpoint changes, procedure changes, conditions adverse to quality, and changes to the updated final safety analysis report. The inspectors confirmed that the evaluations were thorough and that prior NRC approval was obtained as appropriate. The inspectors also reviewed 10 screenings where the licensee had determined that a 10 CFR Part 50.59 evaluation was not necessary. In regard to the changes reviewed where no 10 CFR Part 50.59 evaluation was performed, the inspectors verified that the changes did not meet the threshold to require a 10 CFR Part 50.59 evaluation. These evaluations and screenings were chosen based on risk significance of samples from the different cornerstones.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

.1 Review of Recent Modifications

a. Inspection Scope

The inspectors reviewed five permanent plant modifications that had been installed within the last two years. The modifications were chosen based upon their affecting systems that had high probabilistic risk analysis (PRA) significance in the licensee's Individual Plant Evaluation (IPE) or high maintenance rule safety significance. The inspectors reviewed the modifications to verify that the completed design changes were in accordance with the specified design requirements and the licensing bases and to confirm that the changes did not affect any systems safety function. Design and post-modification testing aspects were verified to ensure the functionality of the modification, its associated system, and any support systems. The inspectors also

verified that the modifications performed did not place the plant in an increased risk configuration.

b. Findings

No findings of significance were identified.

1R21 Safety System Design and Performance Capability (71111.21)

Introduction: Inspection of safety system design and performance capability (SSDPC) verifies the initial design and subsequent modifications and provides monitoring of the capability of the selected systems to perform design basis functions. As plants age, the design bases may be lost and important design features may be altered or disabled. The plants risk assessment model was based on the capability of the as-built safety system to perform the intended safety functions successfully. This inspectable area verifies aspects of the mitigating systems cornerstone for which there are no indicators to measure performance.

The objective of the SSDPC inspection was to assess the adequacy of calculations, analyses, other engineering documents, and operational and testing practices that were used to support the performance of the selected systems during normal, abnormal, and accident conditions.

The systems and components selected were the emergency diesel generators (EDGs) and the high pressure core spray (HPCS) system. These systems were selected for review based upon:

- having a high probabilistic risk analysis ranking;
- having had recent significant issues;
- not having received recent NRC review; and
- being interacting systems.

The criteria used to determine the acceptability of the systems performance was found in documents such as:

- applicable technical specifications (TS);
- applicable updated safety analysis report (USAR) sections; and
- the systems' design documents.

The following system and component attributes were reviewed in detail:

System Requirements

Process Medium - water, air, electrical signal;
Energy Source - electrical power, steam, air;
Control Systems - initiation, control, and shutdown actions;
Operator Actions - initiation, monitoring, control, and shutdown; and
Heat Removal - cooling water and ventilation.

System Condition and Capability

Installed Configuration - elevation and flow path operation;
Operation - system alignments and operator actions;
Design - calculations and procedures; and
Testing - level, flow rate, pressure, temperature, voltage, and current.

Component Level

Equipment/Environmental Qualification - temperature and radiation; and
Equipment Protection - fire, flood, missile, high energy line breaks (HELBs), freezing, heating, ventilation, and air conditioning.

.1 System Requirements

a. Inspection Scope

The inspectors reviewed the USAR, TS, system descriptions, drawings and available design basis information to determine the performance requirements of the EDGs and the HPCS system. The reviewed system attributes included process medium, energy sources, control systems, operator actions and heat removal. The rationale for reviewing each of the attributes was:

Process Medium: This attribute required review to ensure that the selected systems flow paths would be available and unimpeded during and following design basis events. To achieve this function, the inspectors verified that the systems would be aligned and maintained in an operable condition as described in the plant's USAR, TS and design bases.

Energy Sources: This attribute required review to ensure that the selected systems motive and/or electrical source would be available and/or adequate and unimpeded during and following design basis events, that appropriate valves and system control functions would have sufficient power to change state when required. To achieve this function, the inspectors verified that the interactions between the systems and their support systems were appropriate such that all components would operate properly when required.

Controls: This attribute required review to ensure that the automatic controls for operating the systems and associated systems were properly established and maintained. Additionally, review of alarms and indicators was necessary to ensure that operator actions would be accomplished in accordance with design requirements.

Operations: This attribute was reviewed because the operators perform a number of actions during normal, abnormal and emergency operating conditions that have the potential to affect the selected systems operation. In addition, the emergency operating procedures (EOPs) require the operators to manually realign the systems flow paths during and following design basis events. Therefore, operator actions play an important role in the ability of the selected systems to achieve their safety-related functions.

Heat Removal: This attribute was reviewed to ensure that there was adequate and sufficient heat removal capability for the selected systems.

b. Findings

No findings of significance were identified.

.2 System Condition and Capability

a. Inspection Scope

The inspectors reviewed design basis documents and plant drawings, abnormal and emergency operating procedures, requirements, and commitments identified in the USAR and TS. The inspectors compared the information in these documents to applicable electrical, instrumentation and control, and mechanical calculations, setpoint changes and plant modifications. The inspectors also reviewed operational procedures to verify that instructions to operators were consistent with design assumptions.

The inspectors reviewed information to verify that the actual system condition and tested capability was consistent with the identified design bases. Specifically, the inspectors reviewed the installed configuration, the system operation, the detailed design, and the system testing, as described below.

Installed Configuration: The inspectors confirmed that the installed configuration of the EDG and HPCS systems met the design basis by performing detailed system walkdowns. The walkdowns focused on the installation and configuration of piping, components, and instruments; the placement of protective barriers and systems; the susceptibility to flooding, fire, or other environmental concerns; physical separation; provisions for seismic and other pressure transient concerns; and the conformance of the currently installed configuration of the systems with the design and licensing bases.

Operation: The inspectors performed procedure walk-throughs of selected manual operator actions to confirm that the operators had the knowledge and tools necessary to accomplish actions credited in the design basis.

Design: The inspectors reviewed the mechanical, electrical and instrumentation design of the EDG and HPCS systems to verify that the systems and subsystems would function as required under accident conditions. The review included a review of the design basis, design changes, design assumptions, calculations, boundary conditions, and models as well as a review of selected modification packages. Instrumentation was reviewed to verify appropriateness of applications and set-points based on the required equipment function. Additionally, the inspectors performed limited analyses in several areas to verify the appropriateness of the design values.

Testing: The inspectors reviewed records of selected periodic testing and calibration procedures and results to verify that the design requirements of calculations, drawings, and procedures were incorporated in the system and were adequately demonstrated by

test results. Test results were also reviewed to ensure automatic initiations occurred within required times and that testing was consistent with design basis information.

b. Findings

No findings of significance were identified.

.3 Components

a. Inspection Scope

The inspectors examined the EDG and HPCS systems associated pumps, motor operated valves, heat exchangers and instrumentation to ensure that component level attributes were satisfied.

Equipment/Environmental Qualification: This attribute verifies that the equipment was qualified to operate under the environment in which it was expected to be subjected to under normal and accident conditions. The inspectors reviewed design information, specifications, and documentation to ensure that the EDG and HPCS systems were qualified to operate within the temperatures and radiation fields specified in the environmental qualification documentation.

Equipment Protection: This attribute verifies that the EDG and HPCS systems were adequately protected from natural phenomenon and other hazards, such as HELBs, floods or missiles. The inspectors reviewed design information, specifications, and documentation to ensure that the systems were adequately protected from those hazards identified in the USAR, which could impact the systems ability to perform their safety function.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA2 Identification and Resolution of Problems

.1 Review of Condition Reports

a. Inspection Scope

The inspectors reviewed a sample of problems associated with the EDG and HPCS systems that were identified and entered into the corrective action program by the licensee. The inspectors reviewed these issues to verify an appropriate threshold for identifying issues and to evaluate the effectiveness of corrective actions related to design issues. In addition, condition reports written on issues identified during the inspection were reviewed to verify adequate problem identification and incorporation of the problem into the corrective action system. The specific corrective action documents

that were sampled and reviewed by the inspection team are listed in the attachment to this report.

b. Findings

No findings of significance were identified.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. Myers and other members of licensee management at the conclusion of the inspection on August 27, 2004. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

No interim exits were conducted.

4OA7 Licensee-Identified Violations

The following violation of very low significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a Non-Cited Violation.

Cornerstone: Mitigating Systems

.1 Calculation Post-It-Notes

The licensee's program for the control of calculations was described in Nuclear Operating Administrative Procedure NOP-CC-3002, "Calculations," Revision 1. The procedure allowed the use of a Post-It-Note (PIN), which was defined in Sections 3.15 and 4.3, as a request or reminder that some minor change should be incorporated into the next revision of the calculation. The PIN was to make administrative only changes to a calculation and was not to have an impact upon the technical content or results/conclusions of the calculation. The use of a PIN was a FENOC-wide practice and required no independent reviewer and/or management approval to issue.

The inspection team identified numerous examples where the PIN process was inappropriately used to flag/indicate changes to calculations. These examples were not administrative only changes, but involved technical issues potentially impacting the calculations technical content or results/conclusions. The licensee also identified the PIN as a problem area in their self-assessment titled Interim Report FENOC-SA-04-01, "Assessment of Engineering Programs Effectiveness Perry, Beaver Valley, and Davis-Besse Plants," dated August 5, 2004, but the extent of the inappropriate use of the PIN was not initially recognized.

Condition Report 04-04405, “Engineering Focused Self-Assessment FENOC-SA-04-01, Review Engineering Programs,” dated August 26, 2004, identified the PIN process as not being correctly implemented and had the potential for changing plant design without appropriate reviews. The CR was initially categorized as a condition report not adverse to quality. However, as a result of subsequent discussions with the inspection team, the licensee revised the CR’s category. In CR 04-04405, CA Numbers 1 and 2 dated August 29, 2004, the licensee revised the corrective action category to a condition adverse to quality and issued Memorandum DES/04-0041 dated August 26, 2004, which stated that “the use of PINs per NOP-CC-3002, Section 4.3 shall only be used if authorized, reviewed, and approved by a PNED DES Unit Supervisor or above.” This memorandum was issued to all PNED personnel and design consultants. In CA Number 2, the licensee initiated a review of all PINs for compliance with NOP-CC-3002.

Title 10 CFR Part 50, Appendix B, Criterion 3, “Design Control,” states, in part, that design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews. As described in CR 04-04405 and CR 04-03848, “Inappropriate Use of Post-It-Note (PIN) for Calculations,” dated July 24, 2004, the licensee identified examples where the PIN process was inappropriately used and potentially impacted the calculations technical content or results/conclusions. As a result, the licensee failed to provide adequate design control measures for verifying or checking the adequacy of design, such as by the performance of design reviews to ensure that the plant’s design basis was maintained.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee
M. Carpenter, Design Engineering
P. Chatterjee, Design Engineering
V. Higoki, Regulatory Affairs
T. Hilston, Design Engineering
C. Kuester, Design Engineering
T. Lentz, Engineering Director
J. Maloney, Design Engineering
J. Morehouse, Plant Systems Engineering
L. Myers, Chief Operating Officer
W. O'Malley, Maintenance Director
H. Reppert, Design Engineering
K. Russell, Regulatory Affairs
R. Stadel, Procurement Engineering
A. Watkins, Design Engineering
J. Zarea, Design Engineering

Ohio Department of Public Safety
J. Wills, Radiation Analyst

Nuclear Regulatory Commission
R. Powell, Senior Resident Inspector
J. Ellegood, Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None.

Closed

None.

Discussed

None.

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety but rather that selected sections of portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

50.59 EVALUATIONS

Number	Title or Description	Date or Revision
02-00111	DCP 01-5030 Replace P48 Biocide System and Delete Associated Setpoints	0
02-00414	Changing Uncertainties for Some Parameters of Meteorological Monitoring System	1
03-00160	Temp Mod Turbine Thrust Bearing Wear Detector Circuitry	0
03-01917	Reinstallation Div 3 DG Exhaust Blowoff Hatch	1
04-00301	Installation of a Digital FW Control System	0

50.59 SCREENS

Number	Title or Description	Date or Revision
01-00384	ORM PDB-R001 Admin Requirements Section 7.5.5.5 DG Maint Program Procedure Change	1
02-00222	HPCS DG High Ambient Room Temp	2
02-00868	ITE Ckt Bkr Model 362-GA-50-30C Control Ckt Mod	0
02-01219	ERE for Square Root Extractors	0
03-00071	Installation of Replacement Capacitors	0
03-00254	Replace Bailey Type 745/744 Alarm Units, 721 Controller Units and 724 Logic Units Electronic Ckt Cards with ERE Ckt Cards	0
03-01195	Temp Mod Leak Sealant Device for B21F0015	0
03-01660	Equivalent Motor for Stock Code 18046175	0
04-00056	MRN 37 to Vendor Manual G120	0
04-00545	ESW Pump Shaft Traceability Not Maintained	0
04-00579	Replace Bailey Type 720, Utility and M/A Stations w/NUS UTS 2000-720-07 and 01 Electronic Ckt Cards	0
04-00722	Use-As-Is Disposition of CR 04-02862 ESW Pump B Shaft Scored	June 1, 2004
04-00878	Dedicated Emergency Power Sources	0

CALCULATIONS

Number	Title or Description	Date or Revision
6531-—06	Control Complex Flooding Analysis Elev 620' - 6"	1
B21-C10	Reactor Vessel High Level 8 RCIC/HPCS Trip	2
CL-SBO-007	Loss of Heat Tracing CST/HPCS Instrument Line	0
DIDR-041	Penetration Seal Review for Flooding of ECCS & RCIC Rooms	9
E22-C05	Setpoint Calculation for E22N0651	0
E22-C08	HPCS DG Time Delay Relays 1E22Q7019, Q7032, Q7033, Q7047	0
E22-001	NPSH Calculations for HPCS System	0
E22-004	Determine Pump Runout Flow Conditions for Flow Path from Suppression Pool Through HPCS Pump and Back to Pool	0
E22-007	Waterleg Pump C003 Design Calculation	0
E22-011	Show GE Criteria Met Sys Design Spec 22A3131/R5: Sufficient H_2O Volume in Seismic I, Quality Grp B, Structures/Pipe Upstream of Valve 1E22F0001 to Permit XFR to Suppression Pool Suction w/o NPSH Loss	0
E22-019	Justification for Elimination of HPCS Pump Motor over Frequency Relay	3
E22-020	Resizing of Orifice D0004 and Evaluation for CST-CST Test Mode Components	0
E22-029	HPCS Pump Performance Test Acceptance Criteria	6
E22-035	Determine Min Available NPSH for HPCS Pump While 2000 gpm Is Being Diverted from HPCS Pump Suction Piping to Suppression Pool Cleanup System	0
ECA-002	Environmental Conditions Analysis (DG-1)	2
ECA-011	Environmental Conditions Analysis	2
ECA-064	HPCS Pump Room Cooler Load for Specific Steady-State Pump Room Temps	0
FNOCP013-CALC-001	PSA - RCIC Room Heat-Up During SBO	0
JL-125	ECCS Pump Room H_2O Depth Due to Gross Failure of Suction Penetration	0
JL-126	RHRC/RCIC Room Penetrations Flood Failure per CR-93-082	0
M43-000	DG Building Vent System	2
M43-001	Min Outside Air Temp for Div 1 and 2 Diesel - HVAC Temporary Condition	1
M43-002	When Diesel Is in STBY Condition Keep Warm Systems Add Considerable Cooling Load to Normally Unventilated Diesel Room	0

CALCULATIONS

Number	Title or Description	Date or Revision
M43-003	HPCS EDG Room Auxiliary Exhaust Fan Equipment Sizing	0
MOVC-0042	AC Gate/Globe MOV Degraded Voltage Capability Calculation Utilizing Limitorque Method	5
MOVC-0043	Required Thrust for Gate MOVs	4
MOVC-0072	Max Allowable Handwheel Torque for Gate and Globe MOVs	1
MOVC-0073	AC MOV Actuator Degraded Voltage Torque Capability Utilizing Commonwealth Edison Method	6
P11- 3	Recirculation Heater Sizing for Freeze Protection	1
P11-11	Min Temp of Condensate in Storage Tank	0
P11-16	Volume of CST Inventory Available for HPCS and RCIC with CST Intact & Lost	0
PRDC-0012	Load Evaluation & EOC Voltage Determination of Div 1 and 2 Batteries During a SBO Situation	1
PRMV-0014	Div 3 HPCS DG (1E22S001)/EH1301 Protective Relaying Setpoint	3
PRMV-0020	Degraded Voltage and LOOP UV Relaying for Div 1, 2 and 3	2
PRMV-0048	Reactor Recirculation MG Set Generator Protection (32764-87-23)	1
PRMV-0061	Div 1, 2, 3 DG Voltage Controlled Overcurrent and Load Test Overload Protection	0
PRMV-0062	4.16kV Degraded Voltage Instrumentation Loop Tolerance Calculation	1
PSTG-0014	Div 1, 2, and 3 DGs Electrical Load Determination	6
R43-C02	R43 DG Time Delay Relay Tolerance Calculation	2
R43-051	Improved EDG Tech Spec Verification	2
R44-006	Establish Correlation Between EDG Starting Air Properties at 250 psig and at Atmospheric Press	1
R44-007	Identify Acceptable Leakage Criterion for Testing of Emergency DGs Starting Air System	1
R44-T04	STBY DGs Starting Air Start/Stop Control and Alarms	4
R45-003	Diesel Fuel Oil Pumps	1
R45-007	Emergency DG Fuel Oil Day Tank Level/Volume	2
R45-008	R45 System Operating Temps	2
R45-009	STBY and HPCS DG 7-Day Event Fuel Consumption	5
R45-010	Correlation of Tank Level to Volume for Diesel Fuel Oil Storage Tanks	4

CALCULATIONS

Number	Title or Description	Date or Revision
R45-011	EDG Fuel Oil XFR Pump Performance Requirements	0
R45-012	HPCS & Div 1 and 2 Diesel Fuel Oil Day Tank	2
R45-013	HPCS DG Fuel Oil Storage and Tank Oil Volume	0
R45-014	Assessment of Fuel Oil XFR from Fuel Oil Storage Tank to Day Tank	0
R46-005	Jacket H_2O Heat Exchanger Turbulence	0
R46-006	Design Limiting "U" for the Div 1 and 2 EDG JW Heat Exchangers	1
R46-007	Overall Heat XFR Coefficient for the STBY DG Jacket H_2O HX (Clean)	0
R46-012	Evaluation of Heat XFR Coefficient and Min Required Wall Thickness	1
R46-013	Reduced ESW Flow to Jacket H_2O Heat Exchanger	1
R46-017	Div 1 EDG JW Heat Exchanger Test Results - 1997	0
R46-018	Design Basis Heat Load & Required ESW Flow for the Div 1 and 2 DG HX`s	2
R48-008	EDG Exhaust Vent Valve Size	1
R48-013	Setpoint Calculation for Div 1 - 3 DG Testable Rupture Discs	2
R48-015	Press/Temp Ratings for STBY and HPCS DG Exhaust Piping	0
R48-018	Div 1 and 2 Exhaust Vent Valve Max Back Press	1
R48-022	Effects of Increased Exhaust Back Press on Div 3 DG Engine Performance	1
R48-023	Div 1 & 2 TRD Design and Setpoints	0
R48-024	Div 3 TRD Design and Setpoints	2
SM-007	System Notebook - HPCS	1
SMRF 98-5023	Gear Change of 1E22F0012	0
T21-7	Suppression Pool Heat Capacity Change Due to Installation of New ECCS Strainer	0

COMPONENT/PART EQUIVALENCE REVIEW (CERFs)

Number	Title or Description	Date or Revision
1516	Material Changes for ESW Pumps	0, 1 & 2
1543	Rev 1 Deletes Applicability of this CERF to ESW Pump A	February 4, 2004
1582	Rev 1 Deletes Applicability of this CERF to ESW Pump A	February 4, 2004
1709	Refurbishment of GE/Lambda Power Supplies Stock Code 97096845 by Pentas Controls	1

COMPONENT/PART EQUIVALENCE REVIEW (CERFs)

Number	Title or Description	Date or Revision
1851	Replacement of Bailey Type 720 Utility with NUS UTS-2000-720 Modules	0
1817	Replacement of All Bailey 721 Controller Modules in the FW Control System with a Re-Engineered NUSBLC2000-721-01	0

CORRECTIVE ACTION PROGRAM DOCUMENTS ISSUED DURING INSPECTION

Number	Title or Description	Date or Revision
04-04124	Misleading Statement in 50.59 Screen for Use-As-Is CR 04-02862	August 10, 2004
04-04137	NRC SSDPC Inspection Issue - SR Spare Light Bulbs Found in Hear Here Booths	August 11, 2004
04-04142	Jacket H_2O Leakage from Div 1 DG	August 11, 2004
04-04155	Corrective Action Closed Without Required Action Being Completed	August 12, 2004
04-04159	PCR ONI-R10 Deficiency	August 12, 2004
04-04160	Minor SVI Discrepancy	August 12, 2004
04-04189	Incorrect Statement in 10 CFR 50.59 Evaluation	August 13, 2004
04-04196	Calculation R48-023 R/0 for the Div 1 and 2 TRD's Requires Clarification	August 13, 2004
04-04240	Additional NPSH Information Is Needed from the HPCS Pump Vendor	August 12, 2004
04-04331	Deficiency Tags Hanging with No Notification or Order	August 21, 2004
04-04346	RFA - NRC SSDPC Inspector Observation on PNPP Temp Alts	August 23, 2004
04-04366	Concern with Calculation E22-001	August 25, 2004
04-04396	DG Loading Calculation PSTG-0014	August 25, 2004
04-04398	Inadequate 50.59 Review for TS SR 3.8.1.6 Bases Change	August 25, 2004
04-04401	RFA - Loading of Stub Bus XH11 & XH12 During a LOOP/LOCA	August 25, 2004
04-04405	Engineering Focused Self-Assessment FENOC-SA-04-01 Review Engineering Programs	August 26, 2004
04-04407	Deficiency Identified in ECCS Pump Room Flooding Calculations	August 26, 2004
04-04410	RFA: 50.59 Mentoring Review Committee Business Practice Scope	August 26, 2004
04-04414	Calculation Deficiency - Freezing of CST Level Instruments During SBO	August 26, 2004
04-04418	Div 3 EDG Exhaust Back Press Calculations Require Clarification	August 26, 2004
04-04430	Licensing Basis for EDG (Div 1 and 2) Fuel Oil Storage Capacity Post-LOOP	August 26, 2004

CORRECTIVE ACTION PROGRAM DOCUMENTS ISSUED PRIOR TO INSPECTION

Number	Title or Description	Date or Revision
93-00082	Leak Tightness/Flooding Requirements of the ECCS Rooms	April 6, 1993
99-01569	While Performing GMI-0156 the First Lift of the HPCS EDG Exhaust	June 8, 1999
02-00205	HPCS Pump Testing	January 22, 2002
02-00474	Div 3 DG Exhaust Piping Analysis Credited Struct Support from Non-Safety Component	February 13, 2002
02-00726	Unable to Obtain Proper Press During SVI-E22-T2004	March 12, 2002
02-00767	Div 3 DG Wrong Control Switch Positioned	March 15, 2002
02-00769	Fill & Vent of HPCS System Procedure Is Not Adequate to Protect the Pump Seals	March 15, 2002
02-00772	Maintenance Rule Availability for HPCS During SVI-E22-2001	March 16, 2002
02-00773	During Performance of SVI-E22-T2001 Valve 1E22F039 Failed to Open	March 16, 2002
02-00890	Div 1 and 2 Diesel Fuel Oil Consumption Calculation	March 20, 2002
02-00968	Diesel Fuel Oil XFR System D/P Indicators	April 1, 2002
02-01110	Div 3 DG Rupture Disk Concrete Inspection	April 15, 2002
02-01115	Foreign Material in Div 3 DG Turbocharger Lube Oil Filter Housing	April 15, 2002
02-01132	Div 3 DG Fuel Oil System Check Valves	April 16, 2002
02-01161	HPCS Diesel Fuel Oil Tubing Damaged	April 17, 2002
02-01166	HPCS DG and HPCS Pump Wiring Discrepancies	April 18, 2002
02-01181	HPCS Diesel LO Circ Pump Replacement	April 16, 2002
02-01200	HPCS Diesel Lash Adjuster Required Replacement	April 18, 2002
02-01250	New Calculations Show DG Fuel Oil XFR Pumps Min and Max Design Temps Would Be Exceeded	April 25, 2002
02-01483	DG Temp Relay Repair Has Not Been Timely	May 14, 2002
02-01531	Hardened Black Deposits in Fuel Oil Day Tank Level XMTR Piping	May 20, 2002
02-01565	Div 1 Fuel Oil XFR Pump Did Not Auto Start When Running the DG	May 21, 2002
02-01903	HPCS Flow Instrument Reading Incorrectly	June 16, 2002
02-01938	Environmental Zone DG-1, AB-3, and AB-7 High Temps	November 3, 1998
02-02257	Div 1 DG Jacket H_2O Heater Did Not Turn off Prior to High Alarm	July 19, 2002
02-02409	NRC Info Notice 2002-22 Degraded Bearing Surfaces in GM/EMD DGs	July 22, 2002

CORRECTIVE ACTION PROGRAM DOCUMENTS ISSUED PRIOR TO INSPECTION

Number	Title or Description	Date or Revision
02-02572	HPCS Pump Flow Indication Trending up with HPCS Not Running with SPCU In-Service	August 2, 2002
02-02780	RFA - Clarify ECCS Min Flow Requirement	August 15, 2002
02-03019	Air in Sensing Line	August 29, 2002
02-03339	Div 2 DG Winding Temp Relay Problems	September 19, 2002
02-03361	Div 2 Diesel Load Swings	September 20, 2002
02-03706	Failure of a New Relief Valve after Installation	October 7, 2002
02-03972	HPCS Pump Failed to Start	October 23, 2002
03-00739	NRC 2003 Inspection - DG Rupture Disc	February 13, 2002
03-01569	Submergence Depth Used to Prevent Vortexing Is Inadequate	May 3, 2003
03-02973	Trip Annunciators Do Not Energize	May 6, 2003
03-02983	RFA - HPCS Pump Rotation During Fill and Vent and Pump Voiding Situations	May 6, 2003
03-03172	TS Requirement Not Met During SVI-R43-T1338	May 12, 2003
03-04168	Voltage Restrained Overcurrent Relay Protecting LFMG Set	July 7, 2003
03-04328	HPCS out of Service Alarms Still Coming In	July 21, 2003
03-04374	Div 2 DG Unplanned Inoperability and Unavailability	July 23, 2003
03-04447	DG 64F Relay Flag Found Tripped	July 28, 2003
03-04965	Nonsafety-Related Coating Applied to Diesel Fuel Oil Storage Tank Internals	August 6, 2003
03-05745	SRV's Lifted (2) During The Performance of SVI-B21-T0369B	February 19, 2004
03-06256	Div 3 FOST Level Transmitter Loop Calculations	November 19, 2003
03-06302	OE 17219 HPCS Injection Attributed to Human Performance Error	November 21, 2003
03-06691	Inconsistent Weight of EDG Div 1 and 2 TRD	December 18, 2003
04-00322	Div 1 and 2 Testable Rupture Disc Qualification	January 23, 2004
04-01574	Requirements for Items Issued from Warehouse Not Adequately Addressed	March 31, 2004
04-01631	Div 2 DG Starting Air Compressor 1R44C0001B Continues to Trip Thermal Overloads	April 1, 2004
04-01844	HPCS Unavailability Approaching NRC Green - White Unavailability Threshold	April 9, 2004
04-01862	1M43C0003C Running Currents are High	April 11, 2004
04-02744	Div 1 DG Field Ground Relay Flag Displayed	May 26, 2004
04-02862	ESW Pump B Shaft Scored	May 31, 2004
04-02891	Repair Directed in CR04-02862 Had to Be Revised	June 2, 2004
04-03185	Div 1 and 2 DGs	June 17, 2004
04-03187	Latent Issues Review - Increased Back Press Effect on Diesel Fuel Oil Consumption	June 17, 2004

CORRECTIVE ACTION PROGRAM DOCUMENTS ISSUED PRIOR TO INSPECTION

Number	Title or Description	Date or Revision
04-03234	Latent Issues Review - SOI-R43 Diesel Loading Differs from Design Basis Loading	June 23, 2004
04-03298	Latent Issues Review - Diesel Fuel Oil Consumption Calculation Design Basis Loading	June 24, 2004
04-03379	Latent Issues Review - Issues Remain on OD for CR's 04-3234 and 04-03298	June 30, 2004
04-03848	Inappropriate Use of Post-It-Note (PIN) for Calculations	July 22, 2004
04-03915	Received Spurious HPCS Out of Service Alarm	July 26, 2004
04-04053	Calculation Revisions	August 5, 2004
04-04075	Div 1 and Div 2 Diesel Fuel Oil Pipe Wear Due to Fretting at Supports	August 6, 2004
04-04176	Div 2 Diesel Fuel Oil Pipe Wear Due to Fretting at Support	August 12, 2004

DRAWINGS

Number	Title or Description	Date or Revision
022-0002-00000	Environmental Conditions for Auxiliary Building	J
061-0560-07890	Shutdown Pneumatic Logic Board Assembly	
206-0010-00000	Main One Line Diagram 13.8kV and 4.16kV	Z
206-0021-00000	Class 1E 480V Bus EF1A	DDDD
206-0025-00000	Class 1E 480V Bus EF1C	WWW
206-0029-00000	Class 1E 480V Bus EF1E	KK
208-065 A01	HPCS System Notes References and Tabulations	K
208-065 A02	HPCS System Switch Developments	R
208-065 A03	HPCS System Relay Logic	P
208-065 A04	HPCS System Testability	P
208-065 A05	HPCS System Process Instrumentation	P
208-065 A06	HPCS System Status Lights	J
208-065 A10	HPCS System MOV F015	P
208-065 A11	HPCS System MOV F023	R
208-065 A14	HPCS System MOV F004	N
208-0065-00008	HPCS System MOV F011	M
208-0065-00009	HPCS System MOV F012	M
208-0065-00012	HPCS System MOV F001	R
208-0065-00015	HPCS System MOV F010	M
208-0206-00027	4.16kV Bus EH11 Preferred Supply Bkr EH1114	Z
208-0206-00033	4.16kV Bus EH12 Preferred Supply Bkr EH1212	X
208-0206-00039	4.16kV Bus EH13 Preferred Supply Bkr EH1303	AA
208-0206-00046	Bus EH11 Under-Voltage and Potential Ckts	X
208-0206-00047	Bus EH12 Under-Voltage and Potential Ckts	FF
208-0206-00049	Bus EH13 Under-Voltage and Potential Ckts	FF

DRAWINGS

Number	Title or Description	Date or Revision
208-0216-00024	Switch Developments - Div 1 - 1R43-S001A	E
208-0216-00025	Switch Developments - Div 2 - 1R43-S001B	F
208-0222-00275	Control Room Annunciator	M
302-0346-00000	STBY Diesel Engine Mounted Piping	B
302-0347-00000	STBY Diesel - Engine Control Panel	D
302-0701-00000	HPCS System	EE
302-0351-00000	STBY DG Starting Air	Z
302-0352-00000	STBY DG Fuel Oil System	FF
302-0353-00000	STBY DG Lube Oil	R
302-0354-00000	STBY DG Jacket H_2O	R
302-0358-00000	Diesel Starting Air/Air Dryer Diagram	E
302-0359-00000	Div 3 Diesel Lube Oil System	E
302-0360-00000	Div 3 Diesel Jacket H_2O Cooling System	D
302-0701-00000	HPCS System	EE
302-0791-00000	ESW System	LL
302-0792-00000	ESW System	HH
912-0619-00000	DG Building Ventilation System	S
D-076-093	Condensate Storage Tank	6
D-206-018	Class 1E 4.16kV Bus EH13	Z
D-517-021	DG Building Monorails	C
B-208-173 Sht 26	ECCS Fuel Pool Heat Exchanger Normal Supply MOV F440	D
SS-803-065 Sht 3	HPCS Main Pump Discharge Press 1E22-N051	E
SS-803-065 Sht 9	HPCS Main Pump Suction Press 1E22-N052	D
SS-803-070 Sht 34	Leak Detection System HPCS Line Break Leak Detector	E

ENGINEERING ACTION REQUESTS

Number	Title or Description	Date or Revision
02-0201	Replace Barksdale Temp Model MT1H-H251 with Model MT1H-M251	October 9, 2002

MODIFICATIONS

Number	Title or Description	Date or Revision
85-0006	Add an ac Motor Driven Turbo Oil Pump to the HPCS DG System	0
98-5060	Div 2 EDG Control Logic to Maintain Bypass of Non-Essential Engine Trips after LOCA Start Signal	0
99-5042	Topaz Inverter 1E51K0603 Upgrade to NLI ABSOPULE Supply (Power Supply to RCIC I&C)	2
03-0013	HPCS Pump Motor Bkr Mod	0

MODIFICATIONS

Number	Title or Description	Date or Revision
03-0175	Replace ASCO Solenoid Valve WJ831-6C24 with Equivalent ASCO Solenoid Valve 8316G24	May 12, 2003
03-0334	Revise Setpoints for B33 (Reactor Recirculation) Motor Generator Overcurrent Relays.	0
03-0425	Replace Existing SRV Trip Unit Cards with EMI Hardened Trip Unit Cards	0
ECP 99-5036	HPCS DG Room Auxiliary Exhaust Fan	7
ECP 02-0294	Replace 1P45 System Press Indicators with Higher Accuracy Devices to Reduce M&TE Install/Remove Man-Hours Expended to Support the Performance of 1P45 Flow and d/p PTI's	January 27, 2003
SLB-051103-1	1E22F0015 Torque Switch Setpoint Change	May 11, 2003

OPERABILITY DETERMINATIONS

Number	Title or Description	Date or Revision
02-00726	Unable To Obtain Proper Press During SVI-E22-T2004	0
02-00773	During Performance Of SVI-E22-T2001 Valve 1E22F039 Failed To Open	0
02-01938	Environmental Zone DG-1, AB-3, and AB-7 High Temps	0
03-00269	Torque Wrench Not Documented	0
03-00547	Div 2 DG 1R43C0001B Wires That Go to the Brushes Inside the Generator Are Strapped to the Armature and at One Place the Rubber Insulation under the Strap Has Moved Allowing the Wire to Rub Against the Strap	0
03-01569	Submergence Depth Used to Prevent Vortexing Is Inadequate	0
03-05316	Incorrect Material for Lube Oil Tubing	0
03-06691	Inconsistent Weight of EDG Div 1 and 2 TRD	0
04-00322	Div 1 and Div 2 Testable Rupture Disc Qualification	0
04-03185	Div 1 and 2 DGs	0
04-03187	Latent Issues Review - Increased Back Press Effect on Diesel Fuel Oil Consumption	0
04-03234	Latent Issues Review - SOI-R43 Diesel Loading Differs from Design Basis Loading	0
04-03298	Latent Issues Review - Diesel Fuel Oil Consumption Calculation Design Basis Loading	0
04-03379	Latent Issues Review - Issues Remain on OD for CR's 04-3234 and 04-03298	0
04-03470	Latent Issues Review - Max Room Temp Not Considered in Min Starting Air Press	1

OPERABILITY DETERMINATIONS

Number	Title or Description	Date or Revision
04-04075	Div 1 and 2 Diesel Fuel Oil Pipe Wear Due to Fretting at Supports	0
04-04176	Div 2 Diesel Fuel Oil Pipe Wear Due to Fretting at Support	1

PROCEDURES

Number	Title or Description	Date or Revision
GCI 0016	Scaffolding Erection, Modification or Dismantling Guidelines	4
IMI-E2-42	Filling & Venting Suppression Pool Level Instrument Lines	5
MAI-0505	Control of Plant Instrument Charts & Recorders	2
NOP-CC-2003	Engineering Changes	3
NOP-CC-3002	Calculations	1
OAI-0201	Operations General Instructions and Operating Practices	3
ONI-R10	Loss of AC Power	7
PAP-0204	Housekeeping/Cleanliness Control Program	12
PAP-0909	Scaffolding Erection/Teardown Requests and Scaffold Tracking Program	3
PAP-1402	Temporary Modification Control	12
PEI-B13	Plant Emergency Instruction Reactor Press Vessel Control	7
PTI-R43-P0006-A	Div 1 DG Pneumatic Logic Board Functional Check	3
PTI-R44-P0001A	Div 1 STBY DG Starting Air System	8
PTI-P45-P0001	ESW System Loop A Flow and D/P Test	11
PTI-P45-P0002	ESW System Loop B Flow and D/P Test	13
PYBP-SITE-0013	Site-Wide Priority Management Policy	0
PYBP-SITE-0021	Curator Navigation	0
SOI-E22A	HPCS System Fill and Vent	11
SOI-R43	Div 1 and 2 DG System	15
SVI-R43-T1317	Div 1 DG Start and Load	11

REFERENCES

Number	Title or Description	Date or Revision
21A1913AJ	GE HPCS Pump Purchase Specification Data Sheet	5
22A3131	HPCS GE Design Specification	5
22A3131AS	HPCS GE Design Specification Data Sheet	4
22A3759AL	GE Containment and NSSS Interface Data Book	2
E22B	Div 3 DG System Health Report	2004-1 Quarter
ANSI N195	Fuel Oil Systems for STBY DGs	1976

REFERENCES

Number	Title or Description	Date or Revision
DES/04-0041	Memorandum To: All PNED Personnel Scientech ENERCON From: Ray V. Tanney	August 26, 2004
FENOC-SA-04-01	Assessment of Engineering Programs Effectiveness Perry, Beaver Valley, and Davis-Besse Plants Interim Report	August 5, 2004
IEEE Std 387	IEEE Standard Criteria for DG Units Applied as STBY Power Supplies for Nuclear Power Generating Stations	1977
LER 2002-002	Failure of the HPCS Pump to Start	1
LER 2003-003	Unrecognized DG Inoperability During Mode Changes	0
NUMARC 87-00	Guidelines and Technical Bases for NUMARC Initiatives Addressing SBO at Light H_2O Reactors	1
P45	ESW System Health Report	2004-1 Quarter
PIN 1	Post-It-Note to Calculation N71-035; Revision 0	December 3, 2001
PIN 1	Post-It-Note to Calculation F42-001; Revision 0	January 28, 2002
PIN 1	Post-It-Note to Calculation R46-021; Revision 0	February 27, 2002
PIN 1	Post-It-Note to Calculation 3:27.005.004; Revision 2	May 7, 2002
PIN 1	Post-It-Note to Calculation P47-C02; Revision 2	February 27, 2003
PIN 1	Post-It-Note to Calculation 1E22G02A; Revision 5	May 14, 2003
PIN 1	Post-It-Note to Calculation P43-025; Revision 2	September 26, 2003
PIN 1	Post-It-Note to Calculation X0471; Revision 1	November 3, 2003
PIN 1	Post-It-Note to Calculation P22-004; Revision 1	November 3, 2003
PIN 1	Post-It-Note to Calculation MOV-3; Revision 5	January 8, 2004
PIN 2	Post-It-Note to Calculation N71-026; Revision 0	February 11, 2002
PIN 2	Post-It-Note to Calculation ECA-011; Revision 2	October 3, 2002
PIN 3	Post-It-Note to Calculation SQ-0043; Revision 2	January 15, 2003
PIN 3	Post-It-Note to Calculation MISC-0009; Revision 0	July 31, 2002
PY-CEI/NRR-0995L	Response to SBO Rule Using HPCS Div 3 as Alternate AC Power	April 17, 1989
PY-CEI/NRR-1329L	Supplemental Response on SBO	March 15, 1991
PY-CEI/NRR-1497L	Response to NRC Safety Evaluation on SBO	May 28, 1992
PY-CEI/NRR-2319L	License Amendment Request: Extension of EDG Completion Time and Performance of the 24-hour Surveillance Requirement in Modes 1 and 2	September 3, 1998
R43	Div 1 and 2 DG System Health Report	2004-1 Quarter
RG 1.137	Fuel Oil Systems for STBY DGs	1
Safety Guide 9	Selection of DG Set Capacity for STBY Power Supplies	March 10, 1971
SDM E22A	HPCS System	7

REFERENCES

Number	Title or Description	Date or Revision
SDM E22B	HPCS DG System	8
SDM M43	DG Building Ventilation System	5
SDM P45	ESW System	9
SDM R43	STBY DG System	11
SDM R44	STBY DG Starting Air System	6
SDM R45	STBY DG Fuel Oil System	5
SDM R46	STBY DG Jacket H_2O Cooling System	4
SDM R47	STBY DG Lube Oil System	4
SDM R48	STBY DG Exhaust and Intake System	
SER	Amendment 74 to Facility Operating License NPF-58 - PNPP, Unit 1 (TAC No. M92190)	November 16, 1995
SER	Amendment 99 to Facility Operating License NPF-58 - PNPP, Unit 1 (TAC No. MA3537)	February 24, 1999
SP-2200	Installation Std Spec Instrumentation Installation Safety/Nonsafety-Related	4
TAF81661	Div 1 and 2 Max Diesel Engine Exhaust Back Press	0
USAR Section 6.3.4.2.1	HPCS Testing	12

SURVEILLANCES

Number	Title or Description	Date or Revision
200032650	PY-SVI-E22T0196G HPCS Supr PL High Level Channel G Calibration for 1E22-N055G	August 4, 2003
200032984	PY-SVI-R22T5074 Div 3 4kV EH13 Undervoltage/Degraded Voltage Channel Calibration and Functional Test	April 5, 2004
200044512	PY-SVI-B21T0187C ECCS/HPCS RPV H_2O Level 2 and Level 8 Channel C Functional	April 8, 2004
01-004180-000	SVI-E22T1199 HPCS Pump Discharge Press High Channel Calibration	April 19, 2002
01-013904-000	SVI-E22-T1329 Div 3 DG Functional Test	May 5, 2003
01-014618-000	SVI-R43T1327 Div 1 STBY DG Functional Test	May 5, 2003
01-014619-000	SVI-R43T1328 Div 2 STBY DG Functional Test	April 23, 2003
03-004454-000	Generator, Emergency - Diesel Driven (*Diesel Engine*)	May 8, 2003
03-004512-000	SVI-R43T1327 Div 1 STBY DG Functional Test	May 6, 2003
03-004585-000	SVI-R43T1327 Div 1 STBY DG Functional Test	May 7, 2003
200044513	PY-SVI-B21T0187G ECCS/HPCS RPV H_2O Level 2 and Level 8 Channel G Functional	April 8, 2004
200044516	PY-SVI-B21T0189C ECCS/HPCS Drywell Press High Channel Functional for 1B21	April 10, 2004
200044763	PY-SVI-E22T0196G HPCS Supr PL High Level Channel G Calibration for 1E22-N055G	January 16, 2004

SURVEILLANCES

Number	Title or Description	Date or Revision
200058716	PY-SVI-E22T1200 HPCS Pump D/P - High (Bypass) Channel Functional	June 29, 2004
200058992	PY-SVI-B21T0187C ECCS/HPCS RPV H_2O Level 2 and Level 8 Channel C Functional	June 28, 2004
200058995	PY-SVI-B21T0187G ECCS/HPCS RPV H_2O Level 2 and Level 8 Channel G Functional	June 30, 2004
200092719	PY-SVI-R22T5071 Div 3 4.16 kV Bus EH13 Degraded Voltage Channel Functional	July 30, 2004
SVI-E22-2001	HPCS Pump and Valve Operability Test	16
SVI-E22-2004	HPCS Pump Suction Check Valves Operability Test	7
SVI-R43-T1317	DG Start and Load Div 1	11

TEMPORARY MODIFICATIONS

Number	Title or Description	Date or Revision
03-003	Alter N32 Wiring to Restore Turbine Bearing Thrust Detector Trip Circuitry until Repairs Can Be Made	0

VENDOR DOCUMENTS

Number	Title or Description	Date or Revision
37680	H_2O Leg Pump Curve	March 18, 1980
MAN 4471-2	Rosemount Model 710DU Trip/Calibration System	October 1987
00809-0100-4302	Model 1153 Series B Alphaline Nuclear Press Transmitter	AB
T-37225	Byron Jackson HPCS Pump Curve	April 19, 1978

WORK DOCUMENTS

Number	Title or Description	Date or Revision
200001042	Dresser Coupling Replacement	July 31, 2002
02-004156-000	Troubleshoot and Rework Temp Alarm Loop on 1H51P0054B	September 12, 2003
WO-01-014618	SVI-R43-T1327 - Div 1 STBY DG Functional Test	May 5, 2003
WO-01-014621	SVI-R43-T1338 - Div 2 STBY DG LOOP	May 13, 2003
WO-01-014623	SVI-R43-T5367 - Div 2 Performance Test LOOP/LOCA	May 23, 2003

LIST OF ACRONYMS USED

°	degrees
AC or ac	Alternating Current
ADAMS	Agency-Wide Document Access and Management System
Bkr	Breaker
CFR	Code of Federal Regulations
Ckt	Circuit
CR	Condition Report
CST	Condensate Storage Tank
DCP	Design Change Package
DES	Design Engineering Section
DG	Diesel Generator
DRS	Division of Reactor Safety
ECCS	Emergency Closed Cooling System
EDG	Emergency Diesel Generator
EOC	End of Cycle
EOP	Emergency Operating Procedure
ERE	Equivalent Replacement Evaluation
ESW	Emergency Service Water
FENOC	FirstEnergy Nuclear Operating Company
F	Fahrenheit
FW	Feedwater
GCI	Generic Civil Instruction
gov	Goverment
HELB	High Energy Line Break
HPCS	High Pressure Core Spray
html	Hypertext Markup Language
http	Hypertext Transfer Protocol
I&C	Instrumentation & Control
HVAC	Heating, Ventilation, Air Conditioning
IMC	Inspection Manual Chapter
IPE	Individual Plant Evaluation
IR	Inspection Report
ITE	Inverse Time Element
k	kilo
LOOP	Loss of Offsite Power
M/A	Manual/Auto
MAI	Maintenance Administrative Instruction
MOV	Motor Operated Valve
NPF	Nuclear Power Facility
NRC	U. S. Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
NUREG	NRC Technical Report Designation
OD	Operability Determination
ONI	Off-Normal Instruction
OA	Other Activities

LIST OF ACRONYMS USED

PAP	Plant Administrative Procedure
PARS	Publically Available Records System
PCR	Procedure Change Request
PIN	Post-It-Note
PNED	Perry Nuclear Engineering Department
PNPP	Perry Nuclear Power Plant
PRA	Probabilistic Risk Analysis
PTI	Periodic Test Instruction
RFA	Request for Assistance
RG	Regulatory Guide
SBO	Station Blackout
SDM	System Description
SDP	Significance Determination Process
SER	Safety Evaluation Report
SOI	System Operating Instruction
SR	Safety-Related or Surveillance Requirement
SRV	Safety Relief Valve
SSDPC	Safe System Design and Performance Capability
STBY	Standby
SVI	System Operating Instruction
TAF	Technical Assignment File
TRD	Testable Rupture Disc
TS	Technical Specifications
URI	Unresolved Item
USAR	Updated Safety Analysis Report
UV	Undervoltage
V	Volt
wpd	WordPerfect Document
www	World Wide Web
XFR	Transfer