December 10, 2003

Mr. John L. Skolds, President
and Chief Nuclear Officer
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CLINTON POWER STATION
NRC SAFETY SYSTEM DESIGN AND PERFORMANCE CAPABILITY
INSPECTION REPORT 05000461/2003007(DRS)

Dear Mr. Skolds:

On November 7, 2003, the U.S. Nuclear Regulatory Commission (NRC) completed a biennial baseline engineering inspection at the Clinton Power Station. The enclosed report documents the inspection findings which were discussed on November 7, 2003, with Mr. Bement and other members of your staff.

The inspection examined activities conducted under your license as they related to safety and 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 inspection focused on the safety system design and performance capability of the Shutdown Service Water and the 4160V electrical systems to assure that the selected systems were capable of performing required safety related functions.

Based on 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 made 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).

Sincerely,

/RA/

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

See Attached Distribution

Mr. John L. Skolds, President
and Chief Nuclear Officer
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

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Docket No. 50-461
License No. NPF-62

Enclosure: Inspection Report 05000461/2003007(DRS)
w/Attachment: Supplemental Information

cc w/encl: Site Vice President - Clinton Power Station
Clinton Power Station Plant Manager
Regulatory Assurance Manager - Clinton
Chief Operating Officer
Senior Vice President - Nuclear Services
Vice President - Operations Support
Vice President - Licensing and Regulatory Affairs
Manager Licensing - Clinton and LaSalle
Senior Counsel, Nuclear, Mid-West Regional Operating Group
Document Control Desk - Licensing

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REGION III

Docket No:	50-461
License No:	NPF-62
Report No:	05000461/2003007(DRS)
Licensee:	Exelon Generation Company, LLC
Facility:	Clinton Power Station
Location:	Route 54 West Clinton, IL 61727
Dates:	October 20 through November 7, 2003
Inspectors:	H. Walker, Lead Inspector S. Sheldon, Engineering Inspector N. Valos, Engineering Inspector H. Anderson, Contract Inspector, Mechanical G. Skinner, Contract Inspector, Electrical
Observer	B. Jose, Engineering Inspector
Approved by:	Julio F. Lara, Chief Electrical Engineering Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000461/2003007(DRS); 10/20/03 - 11/07/03; Clinton Power Station; Safety Systems Design and Performance Capability.

This report covered a three week period of an engineering inspection by regional engineering specialists with both electrical and mechanical consultant assistance. The inspection focused on the safety system design and performance capability of selected important systems. The inspection was performed in accordance with NRC baseline inspection procedure 71111.21, "Safety System Design and Performance Capability."

The significance of most findings are indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (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," Revision 3, dated July 2000.

A. Inspector-Identified and Self-Revealed Findings

Cornerstone: Mitigating Systems

No findings of significance were identified.

B. Licensee-Identified Violations

No findings of significance were identified.

REPORT DETAILS

Summary of Plant Status

Clinton was at or near full power throughout the inspection period.

1. REACTOR SAFETY

Cornerstone: Mitigating Systems

1R21 Safety System Design and Performance Capability (71111.21)

Introduction: Inspection of safety system design and performance capability verifies the initial design and subsequent modifications and provides monitoring of the ability of the selected systems to perform design bases functions. As plants age, the design bases may be lost and important design features may be altered or disabled. The plant's 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 safety system design and performance capability inspection is 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 for the inspection were the Shutdown Service Water (SSW) system and the 4160V electrical 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 system's performance was found in documents such as:

- applicable technical specifications;
- 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;
Equipment Protection - fire, flood, missile, high energy line breaks, freezing, heating, ventilation and air conditioning.

.1 System Requirements

a. Inspection Scope

The inspectors reviewed the USAR, technical specifications, system descriptions, drawings and available design basis information to determine the performance requirements of the SSW and the 4160V electrical systems. 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/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, technical specifications and design bases.

Energy Sources: This attribute required review to ensure that the selected systems motive/electrical source would be available/adequate and unimpeded during/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

Improperly Secured 4160V Equipment Doors

Introduction: The inspectors identified an unresolved item having potential safety significance greater than minor. The finding resulted from the licensee's failure to properly close the 4160V equipment doors and maintain the safety related 4160V system components in their analyzed configuration.

Description: During a field walkdown of the safety related 4160V system, the inspectors observed that the Bus 1C1 Reserve Feed Potential Transformer (PT) drawer was misaligned and not fully closed. The inspectors also observed that the panel doors for the Division 1 Diesel Generator CT/PT cabinet (1DG01JA) were fully closed and were not latched at the bottom.

During an examination of the Bus 1C1 Reserve Feed PT drawer licensee personnel determined that the latch rod for the cubicle drawer was resting on top of the latching mechanism instead of being behind the angle latching mechanism. As a result, this configuration could cause the drawer to become displaced during a seismic event. Opening the drawer would disable the voltage sensors for the Division 3 feed from the Emergency Reserve Auxiliary Transformer (ERAT), which would in turn disconnect the ERAT source from Bus 1C1 if it was connected, or would prevent transfer to the ERAT source in the event of loss of the Reserve Auxiliary Transformer (RAT) source. In addition, displacement of the drawer could adversely affect the seismic qualification of the entire Division 3 switchgear. The Division 3 switchgear supplies power to the High Pressure Core Spray (HPCS) components. Failure of the switchgear would make the HPCS system inoperable.

Licensee personnel initiated condition report (CR) 00182734 to document this issue and to evaluate the past operability of the Division 3 switchgear. Work Order No. 629059 was written on the problem and the drawer was promptly closed and properly latched.

Examination of the Division 1 Diesel Generator CT/PT cabinet by licensee personnel revealed that the finger bolts on two panel doors were not tight. The bolts on one door were subsequently tightened by hand, but station personnel were not able to fully tighten the bolts on the other door, due to apparent damage to either the bolts or the door. Opening of the doors during a seismic event could affect the seismic qualification of the panel but a preliminary evaluation by licensee personnel concluded that it was unlikely that opening of the doors would have adverse consequences. Work Order No. 628564 was issued for the repair of the panel and CR 00182327 was written for a more thorough evaluation of the past operability of the Division 1 Diesel Generator.

Analysis: The inspectors determined that the failure to maintain 4160V equipment panels in a qualified configuration was a performance deficiency warranting a significance evaluation in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening," issued on June 20, 2003. The inspectors determined that the finding was greater than minor because it affected the mitigating systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Bus 1C1 Reserve PT drawer configuration could result in inoperable Division 3 switchgear. However, since licensee personnel had not completed their evaluation of past operability of the affected components, the significance determination of this issue could not be completed. As a result, this item will tracked as Unresolved Item (05000461/2003007-01), "Improperly Secured 4160V Equipment Doors," pending further evaluation by licensee personnel and the NRC.

Enforcement: Although the equipment problem was promptly corrected and does not present an immediate safety concern, the failure to maintain safety related 4160V system components in their design and analyzed configuration is a violation of 10 CFR Part 50 Appendix B, Criterion III, Design Control. A thorough evaluation of the past operability of the Division 1 Diesel Generator is to be completed and enforcement actions to be taken as a result of this issue (if any) will be determined after review of the above evaluation results.

.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 technical specifications. Information in these documents was compared 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.

Information was reviewed 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 SSW and the 4160V electrical 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 a procedure walk through 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 SSW and the 4160V electrical 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.

4. OTHER ACTIVITIES (OA)

4OA2 Identification and Resolution of Problems (71152)

Routine Review of Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed a sample of problems associated with the SSW and the 4160V electrical systems that were identified and entered into the corrective action program by licensee personnel. 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, CRs 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 team are listed in the attachment to this report.

b. Findings

No findings of significance were identified.

4OA6 Meetings

.1 Exit Meeting

An exit meeting was conducted for:

- Safety Systems Design and Performance Capability, to Mr. R. Bement and other members of licensee management at the conclusion of the inspection on November 7, 2003. One document supplied to the inspectors was identified as being proprietary and was returned. The inspectors asked licensee personnel to identify any additional proprietary information discussed during the exit meeting. No additional proprietary information was identified.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee
R. Bement, Site Vice President
M. Baetz, Operations Support/Services Manager
K. Baker, Senior Manager Design Engineering
R. Chear, Auxiliary Power Systems Engineer
T. Danley, NSED - Design
R. Frantz, Regulatory Assurance
D. Lillyman, Shutdown Service Water Systems Engineer
J. Madden, Nuclear Oversight Manager
R. Peak, Senior Manager Plant Engineering
M. Stickney, NSED Design
J. Williams, Site Engineering Director

Nuclear Regulatory Commission
B. Dickson, Senior Resident Inspector
C. Brown, Resident Inspector
J. Lara, Chief, Electrical Engineering Branch

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-461/03007-01 URI Improperly Secured 4160V Equipment Doors (Section 1R21.1b.)

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.

1R21 Safety System Design and Performance Capability

10 CFR 50.59 Screenings

1005.06F001; Modification AP-048 – Revise High Voltage Tap Change for ERST LTC Fixed Tap and No-load Tap per ECN 31435; dated March 5, 1999

Applicability Review 343286; Extend the Periodicity of Testing for the Safety Related Coolers/HX/Chillers That are Cooled by SX (Standby Service Water for GL 89-13); Revision 0

CL-2001-S-0082; Installation of Blind Couplings at SX Containment Penetrations 1MC-048 and 1MC-208 on Lines 1SX88BA-3 and 1SX93DA-3 per to Seal Primary Containment Penetrations 1MC-048 and 1MC-208 per EC 331444 and Resultant Changes; dated June 22, 2001

CL-2002-S-0081; Installation of Blind Couplings at SX Containment Penetrations 1MC-204 and 1MC-205 on Lines 1SX93DB-3 and 1SX88BB-3 per EC 333971 and Resultant Changes; dated July 18, 2002

CL-2002-S-112; DCP 339985 (RHR 1E12B001B - Increasing Tube Plugging Allowance); Revision 0

CL-2003-S-0034; Change in the Boron Enrichment in the Standby Liquid Control Tank; dated April 15, 2003.

CL-2003-S-044; DCP 341491 (Change Orifice 1SX12MB to Correct Flow Discrepancies); Revision 0

CL-2003-S-045; Install Test Flange for RT Return Check Valves (1G33-F051, F052A and F051B) to Save Dose and Time; dated April 7, 2003.

CL-2003-S-120; Replacement Relief Valve for Starting Air Receiver Tank 1B1 (1DG05TA); dated September 22, 2003.

ECN 31292; Removing Orifices in the 1SX16MA and 1SX17MA Lines for Division 1 DG SX Coolers; dated January 8, 1999

ECN 31303; Replacement of the Division 1 SX Pump Motor Lube Oil Cooler; dated March 29, 2001

10 CFR 50.59 Evaluations

96-15; Replacement of Second Level Undervoltage Relays and MCC Distribution Transformers; Revision 0

98-074; ECN 30860; Revise SX/RHR Heat Exchanger Orifice to Increase Flow to 5800 gpm; Revision 0

98-109; ECN 30855, and USAR Change Package 8-182 Shutdown Service Water (SX) Vacuum Breaker Installation; Revision 0

98-127; ECN 31102; Flow Restriction Device in the Backwash Line 1SX29BB-3 for Strainer 1SX01FB - Division 2 SX; Revision 0

98-140; ECN 31092; Flow Restriction Device in the Backwash Line 1SX29BB-3 for Strainer 1SX01FB - Division 2 SX; Revision 0

99-037; ECN 31405; SX Valve Control Circuit Changes; Revision 1

Calculations

1SX20; Pressure Setpoints for Automatic Initiation of SSW Pumps 1SX01PA, B, & C; Revision 0

01FC25; Revise the 01FC25 Calculation to Reflect the New FC HX FF and SX Inlet Temperature of 95 Degrees Fahrenheit; Revision 2B

19-AJ-70; Class 1E MCC Control Circuit Voltage and Fuse Adequacy Analysis; Revision 2, Volume B

19-AJ-70; Class 1E MCC Control Circuit Voltage and Fuse Adequacy; Revision 2b

19-AK-8; Electrical Load Monitoring System (ELMS) page 219 RAT Cable Ampacity; Revision 2

19-AK-8; Electrical Load Monitoring System (ELMS) page 230 ERAT Cable Ampacity; Revision 2

19-AN-2; Calc. for 4160V ESS Bus Main, Reserve Feed and Medium Voltage Bus U.V. Relay Settings

19-AN-8; 4160V ESF Swgr. Buses 1A1 &1B1 Motor Relay Settings; Revision 3

19-AN-9; 4160V Div. 3 ESF Bus

19-AN-14; Division 1 and 2 Diesel Generator Relay Settings; Revision 10

19-AN-17; Diesel Generator Relay Settings – Division 3; Revision 6, Volume E

19-AN-19; Calcs for Functional Requirements for 1st and 2nd Level Undervoltage Relays at 4kV Buses 1A1, 1B1, & 1C1; Revision 2, Volume F

19-T-2; Diesel Gen. 1A and 1B Neutral Grounding Resistance

65-019; Specification No. MPR-065-019/ MPR-1920 RHR Heat Exchanger Test; Revision 2

065-017-KMM-03; Revised Acceptance Criteria for Heat Exchangers in the GL-89-13 Program Tested by the Hydraulic Resistance Method; Revision 1

065-019-TGL-01; Acceptance Criteria for RHR Heat Exchanger Performance Tests; Revision 1

065-022-KMM-01; Allowable Fouling Factors for the RHR Heat Exchangers; Revision 0

4536-EAD-2; Ampacity of Cables from ERAT to ESF Buses; Revision 1, Volume B

CI-CPS-026; 1PY-SX028 Setpoint; Revision 3

EAD-DG-1; Starting KVA During Loop Coincident with LOCA for Diesel Generators 1A and 1B; Revision 2, Volume B

IP-C-035; Provide Measurement Tolerance When Operating near High Voltage Values of 4300 VAC on Buses 1A1, 1B1, and 1C1; Revision 0

IP-E-024; SVC Redundant Protection System Settings; Revision 0, Volume D

IP-M-0076; Bounding Differential Pressure for Selected SX MOVs; Revision 0

IP-M-0129; RHR Loop A and B Differential Pressure Calculations for GL 89-10; Revision 4

IP-M-0240; Differential Pressure Calculation for Selected SX System Butterfly MOV's; Revision 0

IP-M-0397; Differential Pressure Calculation for Select CC System Butterfly MOVs; Revision 0

IP-M-0399; Differential Pressure Calculation for Select SX System Butterfly MOVs; Revision 0

IP-M-0457; Water hammer Potential of SX System Division 3; Revision 0

IP-M-0470; Evaluation of SX Flow to SX Pump Motor Bearing Cooler; Revision 1

IP-M-0486; Shutdown Service Water (SX) System Hydraulic Network Analysis Model and Flow Balance Acceptance Criteria; Revision 0

IP-M-0497; Size Orifices 1SX23M and 1SX24M for the Strainer Backwash Lines 1SX29BA-3 and 1SX29BB-3; Revision 0

IP-M-0563; Determination of Allowable Leak Rates and Loss of UHS Volume from Shutdown Service Water (SX) Boundary Valves; Revision 2

IP-M-0605; Flow Velocities in Unit 1 SX Pump Bay; Revision 0

IP-O-032; Tech Spec Indicator Loop Uncertainty Evaluation for Distribution Bus Status-Voltage SR 3.8.9.1, 3.8.10.1; Revision 0

IP-S-0132; Acceptance Criteria for Allowable Sediment Depth (Siltation) in the Circulating Water Screen House; Revision 2

MAD 85-364; Clinton Unit 1 UHS Minimum Cooling Capacity; Revision 2

VC-86; Evaluation of Control Room Chillers for SX Acceptance Criteria; Revision 1

VG-16; Standby Gas Treatment System Cooling Load; Revision 4

VG-17; Hydrogen Recombiner Cooling Load; Revision 4

VH-28; Shutdown Service Water Pump Rooms A, B, and C Low Temperature Evaluation During Normal Plant Operation; Revision 0

VH-31; Performance Evaluation of SSW Pump Rooms A, B, and C Cooling Coils Under SX Flow Acceptance Limits; Revision 2

VX-01; Switchgear Heat Removal System Cooling Loads; Revision 1

VY-45; Performance Evaluation of VY System Cooling Coils under SX Flow Acceptance Limits; Revision 4

VZ-38; Performance Evaluation of HVAC System Cooling Coils Served by Shutdown Service Water (SX) - Div. III; Revision 2

VZ-43; Maximum Flow for Cooling Coils and Refrigeration Condensers Served by WS System; Revision 1

WR-CL-UH-1; Area Capacity for Ultimate Heat Sink; Revision 1

Completed Surveillance Tests

CPS 2700.12; Division 1 SX System Flow Balance Verification; performed March 13, 2002

CPS 2700.12; Division 2 SX System Flow Balance Verification; performed May 3, 2003

CPS 2700.13D001; SX System Flow Verification Data Sheet - Division 2; dated February 22, 2002

CPS 2700.13D001; SX System Flow Verification Data Sheet - Division 2; dated May 3, 2003

CPS 2700.14; Division 3 SX System Flow Balance Verification; performed February 25, 2002

CPS 9053.04C002; RHR Loop B Operability; dated September 24, 2003

CPS 9061.04; Containment/Drywell Isolation Auto Actuation; dated May 2, 2002

CPS 9061.06C008; Div 1 Fuel Pool Makeup Isol Valve Operability (SX in Service) Checklist; dated April 21, 2002

CPS 9061.10; Fuel Pool Cooling Valve Operability; dated August 19, 2003

CPS 9061.10; Fuel Pool Cooling Valve Operability; dated September 8, 2003

CPS 9069.01; Shutdown Service Water Operability Test; performed:
Division 1 - October 10, 2003
Division 1 - July 10, 2003
Division 1 - April 8, 2003
Division 3 - September 3, 2003
Division 3 - July 1, 2003
Division 3 - April 3, 2003
Division 3 - October 4, 1995

CPS 9069.01D001; SX System Operability Data Sheet; dated September 30, 2003

CPS 9861.09D002; Leakage Test on Valve 1SX014B; dated April 8, 2002

CPS 9861.09D008; Leakage Test on Valve 1SX014A; dated April 25, 2002

CPS 9861.09D011; Leakage Test on Valve 1SX014C; dated April 24, 2002

Condition Reports (CRs)

1-97-02-122; MWR D70336 Mixed Incompatible Lubricants on Aux Contacts; dated February 13, 1997

1-97-05-246; OAP05E Operability; dated May 21, 1997

1-97-11-368; GL 89-13 Heat Exchanger Test Program Deficiency; Revision 0

1-98-04-047; SX has no Surveillance to Simulate Overall Flow Capabilities of Components for LOOP or LOCA; Revision 0

1-98-08-219; High Percentage of Contactors Failing Minimum Voltage Pull in Test; dated August 19, 1998

1-98-09-201; Division 1 SX Flow Balance Low Flows to Safety related Components fed by SX; Revision 0

1-98-10-232; SX Pipe Wall Thinning; Revision 0

1-98-12-275; Motor and Gear Assembly Coming Loose From Valve; Revision 0

1-99-03-214; SX Pump Rooms Require Operator Action to Control Temperature, Revision 0

1-99-04-080; Contactors Did Not Meet Acceptance Criteria of 8410.04; dated April 7, 1999

1-99-05-191; Cooling Water Flow to RCIC Lube Oil Cooler Below Design Requirements; Revision 0

2-00-02-101; SX System Piping Interties Not in Accordance with USAR; Revision 0

2-01-04-045-0; Switchyard Transient Causes Trip of RAT; dated November 1, 2001

73116; No PM Exist to Flush SX to Spent Fuel Pool; dated August 24, 2001

75038; Unexpected ERAT SVC freeze signal; dated September 12, 2001

80546; RT and UT Results Identify SX Pipe Wall Reduction & Blockage; dated October 26, 2001

92116; 1SX023B Failed to Close During 9069.02; dated January 23, 2002

94513; SX Manually Stroked Resulting in Inoperability; dated February 8, 2002

95040; SVC Breaker 52-2 Tripped Unexpectedly; dated February 13, 2002

99549; ERAT SVC Trip; dated March 16, 2002

100725; 1SX097B Found Out of Position; dated March 23, 2002

102625; 1SX14C WS to SX 1C Header Isol Valve Failed LLRT; dated April 5, 2002

102744; 1SX062B Stroke Time Exceeded Acceptance Criteria; dated April 8, 2002

105439; Breaker Would Not Rack-in, Breaker Parts Found on Floor; dated April 26, 2002

109836; Inadequate Procedure Causes Loss of 4.16kV 1C1; dated May 29, 2002

118419; 1E12-F068A Unseating Thrust; dated August 6, 2002

119592; ERAT SVC Tripped; dated August 16, 2002

123025; SX Piping Degradation (1SX12AA, AB 2.5"); dated September 16, 2002

127385; Battery Charger Alarm Brought in ERAT SVC Trouble; dated October 15, 2002

135762; ERAT SVC Trouble alarm; dated December 13, 2002

136743; Higher than Expected Ferrous Wear Products in the Oil Sample; dated December 19, 2002 [OD 152005, 136743; Operability Evaluation for CR 152005, 136743; Revision 5; dated April 7, 2003]

143529; ERAT SVC Charger Circuit Card Configured Incorrectly; dated February 7, 2003

146162; During SX Flow Testing Two Loads Were Found to be Low; dated February 23, 2002

150338; ERAT SVC Trouble Due to Thyristor Cooling Trouble; dated March 23, 2003

152725; Unexpected Alarm 5011-8F and ERAT SVC Coolant Leak; dated April 7, 2003

157111; Lower Than Allowable Flows for 1FC01AB When Feed From SX; dated April 3, 2003

157115; Lower than Allowable Flows through MSIV Room Cooler; dated May 3, 2003 [Operability Evaluation 157115; Operability Evaluation for CR 157115 - Lower than Allowable SX Flow Readings during SX Flow Test; Revision 1; dated July 18, 2003]

157361; Water Bubbling out of SX Division 1 Carrier Water Guard Pipe; dated May 5, 2003 [OD 157361; Operability Evaluation for CR 157361; dated May 8, 2003]

160302; EDG Flushing SX Piping Developed Leak; dated May 23, 2003 [OD 160302; Operability Evaluation for CR 160302 - Division 1 SX piping leak for line 1SX04AA; Revision 2; dated June 13, 2003]

168341; Lightning Strike on ERAT SVC Building; dated July 21, 2003

169812; Division 3 Diesel Generator Relief Valve (1SX169C) is Leaking by its Seat; dated July 31, 2003 [OD 169812; Operability Evaluation for CR 169812; Revision 0; dated August 6, 2003]

176007; Missing Some Condition Reports in Downloaded MRule Data; dated September 16, 2003

176960; Several Relief Valves on Division 2 SX Lifted on September 22, 2003; dated September 23, 2003 [OD 176960-08; Operability Evaluation for CR 176960; Revision 0; dated September 26, 2003

178997; Inadequate Condition Report Resolution on 9080.20; dated October 2, 2003

181967; SX Vacuum Breakers; dated October 20, 2003

183694; AP System Exceeded Maintenance Rule Unavailability Criteria; dated October 29, 2003

183696; AP SHIP Color Turned Yellow Due to Maintenance Rule at Risk; dated October 29, 2003

Condition Reports Written as a Result of the Inspection

182242; "Wet Paint" Sign in Division III DG Room near Air Inlet Screen; dated October 21, 2003

182246; Oil Soak Cloth Laying on Div 3 SX Pump; dated October 22, 2003

182250; Overhead Light Suspended by a Strap; dated October 22, 2003

182253; Insulation Pieces Removed in Div 3 SX Pump Rooms; dated October 22, 2003

182255; Loose Piece of Metallic Insulation; dated October 22, 2003

182259; Disorderly Routing of Tygon Drain Hoses; dated October 22, 2003

182262; Div 2 SX Strainer Local Pressure Gauge Discrepancy; dated October 22, 2003

182263; Poor Condition of SX Pump Room Floor Paint; dated October 22, 2003

182327; Division 1 DG CT/PT Panel Doors Not Snug Closed; dated October 22, 2003

182364; Service Caps on DC Battery have cracked and chipped; dated October 22, 2003

182372; Securing Ladders in SX Bays; dated October 22, 2003

182406; ERAT Not Declared Inoperable When SVC was Frozen; dated October 22, 2003

182414; Fire Extinguisher Support Brackets/Hangers Bent; dated October 22, 2003

182557; Cable Tray Cover Not Defined on the Tray Drawing; dated October 23, 2003

182635; Inconsistencies in SX Procedure on Expected System Pressure; dated October 23, 2003

182734; 4160V Bus 1C1 Reserve Feed PT Cubicle Door is Misaligned; dated October 24, 2003

182744; Enhancement for Calc 19-AN-19; dated October 24, 2003

183098; Variations in NDE Measurements of Pipe Wall; dated October 27, 2003

183102; Evidence of Corrosion on Cell Posts for Div II Batteries; dated October 27, 2003

183114; Caution Sign Covering up Another Caution Sign; dated October 27, 2003

183131; ERAT auto tap changer, described in UFSAR but not in service; dated October 27, 2003

183638; IST Stroke Time Acceptance Criteria Not Updated Correctly; dated October 29, 2003

183679; Conflicting Results in Calculations; dated October 29, 2003

183916; No PM to Periodically Check the RAT and ERAT Ground Resistor; dated October 30, 2003

184267; Revise Method of Stroke Testing 1SX016A and 1SX016B; dated November 1, 2003

184482; Unsupported Acceptance Criteria Included in 19-AK-13; dated November 3, 2003

184648; Division 3 SX Pump Runout; dated November 4, 2003

184693; Limiting Flow Ratio for SX Maximum Flow; November 4, 2003

184736; Conflicting Ampacity Values Listed on E02-1AP03; dated November 4, 2003

184763; Legacy Documents in Vendor Manual; November 4, 2003

184867; Nonconservative SX Boundary Vlv Leak Test; dated November 5, 2003

184946; Insufficient NDE of Pipe Section; dated November 5, 2003

185059; Frazil Ice/Cold Weather Operations Procedure; dated November 6, 2003

185104; DG Ground Fault Annunciator Procedure Needs More Guidance; dated November 6, 2003

185107; TDR 2-SX1PA Tolerance Entered Incorrectly in CPS 8501.26; dated November 6, 2003

185143; Suspected Precondition of 1SX016A and 1SX016B; dated November 6, 2003

185197; Enhancement of Calculation No. IP-S-0132 Revision 2; dated November 6, 2003

186557; Lack of a Sense of Urgency to Address Operability Issue; dated November 13, 2003

Drawings

Bingham Pump Company Drawing FD-IA278; Ser. No. IA278, Shutdown Service Water Pump 8x14A VCM 2 Stage; Revision 8

Bingham-Williamette Company Curve No. 35961; 8x14A VCM 2 Stage Pump, Pump SN1A278; Revision 1; dated August 15, 1980

Byron Jackson Drawing T-38302-1; Byron Jackson Test - Pump 37 KXL 2 Stage VCT, Factory No. 761-C-0092; dated March 17, 1980

Byron Jackson Drawing T-38302-2; Byron Jackson Pump Division - Pump Test Data - Factory No. 761-C-0092; dated March 17, 1980

Byron Jackson Drawing T-38303-1; Byron Jackson Test - Pump 37 KXL 2 Stage VCT, Factory No. 761-C-0091; dated March 19, 1980

Byron Jackson Drawing T-38303-2; Byron Jackson Pump Division - Pump Test Data - Factory No. 761-C-0091; dated March 19, 1980

Design Detail 101; 12-inch SF-20 Silicone Foam Pipe/Sleeve Thru Barrier; Revision 5

E02-1AP01 Sh 1; Single Line Diagram Part 1, Revision T

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E02-1AP04 Sh 3; 480V and 4160V Relay Settings; Revision D

E02-1AP04 Sh 14; 4160V ESF Bus 1A1, 1B1 & 1C1 Relay Settings; Revision J

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E02-1AP12 Sh 8; Relaying and Metering Diagram Reserve Aux Transf.; Revision T

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E02-1AP12 Sh 13; Relaying and Metering Diagram 4160V Bus 1B1 Part 1; Revision Y

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E02-1AP12, Sh 015; Relay and Metering Diagram 4160V Bus 1C1, Part 1; Revision W

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E02-1AP43; Key Diagram 4160V Bus 1B; Revision E

E02-1AP44; Key Diagram 4160V Bus 1A1; Revision F

E02-1AP45; Key Diagram 4160V Bus 1B1; Revision F

E02-1AP99 Sh 9; Schematic Diagram Auxiliary Power System 4160V Bus 1A1 Main Feed Bkr. 251-201A1; Revision P

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E02-1AP99 Sh 11; Schematic Diagram Auxiliary Power System 4160V Bus 1B1 Main Feed Bkr. 252-201B1; Revision P

E02-1AP99 Sh 12; Schematic Diagram Auxiliary Power System 4160V Bus 1B1 Reserve Feed Bkr. 252-221B1; Revision V

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E02-1AP99 Sh 15; Schematic Diagram Res. Aux. Transf 1, Emer. Res. Aux Transf. Buses1RT4 &1ET4 Protective Relays (System F); Revision M

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E02-1AP99 Sh 17; Schematic Diagram Res. Aux. Transf 1, Emer. Res. Aux Transf. Buses1RT4,1ET4, & 1RT6 Protective Relays (System S); Revision L

E02-1AP99 Sh 38; Schematic Diagram Auxiliary Power System 4160V Bus 1A1 DC Failure & AC Undervoltage; Revision Y

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E02-1HP99, Sh 102; Schematic Diagram High Pressure Core Spray System (HP) HPCS Power Supply System; Revision L

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E02-1SX99, Sh 001; Schematic Diagram Shutdown Service Water System (SX) Shutdown Service Water Pump 1A; Revision AD

E02-1SX99, Sh 002; Schematic Diagram Shutdown Service Water System (SX) Shutdown Service Water Pump 1B; Revision AA

E02-1SX99, Sh 003; Schematic Diagram Shutdown Service Water System (SX) Shutdown Service Water Pump 1C; Revision W

E02-1SX99, Sh 004; Schematic Diagram Shutdown Service Water System (SX) SSW Strainer 1A Basket Motor 1A; Revision AD

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E02-1SX99, Sh 006; Schematic Diagram Shutdown Service Water System (SX) SSW Strainer 1C Basket Motor 1C; Revision M

E02-1SX99, Sh 007; Schematic Diagram Shutdown Service Water System (SX) SSW Strainer 1A Inlet Valve 1SX003A & Outlet Valve 1SX004A; Revision M

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E02-1SX99, Sh 013; Schematic Diagram Shutdown Service Water System (SX) SSW CNMT. Inboard Isolation Valve 1SX089A, DG 1A Heat Exchanger Outlet Valve 1SX063A; Revision Z

E02-1SX99, Sh 014; Schematic Diagram Shutdown Service Water System (SX) SSW CNMT. Inboard Isolation Valve 1SX089B, DG 1B Heat Exchanger Outlet Valve 1SX063B; Revision P

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E02-1SX99, Sh 016; Schematic Diagram Shutdown Service Water System (SX) SSW System 1A Isolation Valve 1SX014A SSW Containment Isolation Valve 1SX097A; Revision U

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E02-1SX99, Sh 018; Schematic Diagram Shutdown Service Water System (SX) SSW System 1C Isolation Valve 1SX014C; Revision F

E02-1SX99, Sh 028; Schematic Diagram Shutdown Service Water System (SX) Div 1 MOV Overload Indications & Bypass Relays; Revision U

M01-1116-001; General Arrangement Circulating Water Screen House; Revision F

M01-1116-002; General Arrangement Main Circulating Water Screen House Main Floor Plan "A-A"; Revision E

M01-1116-004; General Arrangement Circulating Water Screen House Base Mat Plan; Revision D

M01-1116-005; General Arrangement Circulating Water Screen House Section "C-C"; Revision B

M01-1116-006; General Arrangement Circulating Water Screen House Section "D-D"; Revision C

M01-1116-007; General Arrangement Circulating Water Screen House Section "G-G"; Revision B

M05-1032, Sh 2; P&ID Component Cooling Water (CC); Revision R

M05-1052, Sh 1; P&ID Shutdown Service Water (SX); Revision AS

M05-1052, Sh 2; P&ID Shutdown Service Water (SX); Revision AL

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M05-1052, Sh 5; P&ID Shutdown Service Water (SX); Revision AD

M05-1056, Sh 1; P&ID Plant Service Water (WS); Revision AJ

M05-1064, Sh 3; P&ID Process Radiation Monitoring; Revision F

M05-1075, Sh 4; P&ID Residual Heat Removal (RH); Revision AC

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M-1052, Sh 3; P&ID Shutdown Service Water (SX); Revision AH

M-1052, Sh 4; P&ID Shutdown Service Water (SX); Revision S

M-1052, Sh 5; P&ID Shutdown Service Water (SX); Revision AD

M-1056, Sh 2; P&ID Plant Service Water (WS); Revision AG

PS-K024, Sh 8; Circulating Water Screen House Plans, Sections and Details; Revision L

Engineering Evaluations

1-97-07-341; Residual Heat Removal Heat Exchangers - Division I Data and Performance Evaluation 1E12-B001A; dated April 28, 1998

1-97-09-341; Residual Heat Removal Heat Exchangers - Division II Data and Performance Evaluation 1E12-B001B; dated February 11, 1998

EC 333768; Wall Thinning and Line Blockage Evaluation for SX Lines 1SX12AA and 1SX12AB; Revision 0

EC 338313; Evaluation of MOV 1E12-F068A for the As-Found Open Stem Thrust; Revision 0

EC 339805; Fire Door Acceptance Criteria; undated

EC 340874; Residual Heat Removal Heat Exchanger - Division II Data and Performance Evaluation 1E12-B001B January 5, 2002; Revision 2

EC 340918; Residual Heat Removal Heat Exchangers - Division I Data and Performance Evaluation 1E12-B001A; dated March 25, 2003; Revision 0

EC 340951; Division 1 Diesel Generator Jacket Water Cooler Data And Performance Evaluation 1DG12AA 16 Cylinder; dated March 27, 2003

EC 340981; Division 1 Diesel Generator Jacket Water Cooler Data And Performance Evaluation 1DG11AA 12 Cylinder; dated December 27, 2003

EE-00-007; Residual Heat Removal Heat Exchanger - Division II Data and Performance Evaluation 1E12-B001B; Revision 0; dated January 21, 2000

EE-00-018; Residual Heat Removal Heat Exchangers - Division I Data and Performance Evaluation 1E12-B001A; Revision 0; dated March 17, 2000

Miscellaneous

1SX01PA; TD-5 Relay Calibration Data Sheet; dated December 6, 2000

1SX01PB; TD-5 Relay Calibration Data Sheet; dated December 6, 2000

First Revised Interconnection Agreement by and Among Amergen Energy Company, L.L.C. and Illinois Power Company for the Clinton Power Station; dated February 15, 2002

K-2961; Reserve Auxiliary Transformers, Clinton Power Station Units 1 and 3; dated May 31, 1979

K-10047; Clinton Power Station SVC Design Report; Revision 0

Letter, Q.L. Ruwe, Illinois Power to G. Winnans C&D Power Systems; Deformation of the Lead Inserted Bushing Assembly at the Cell Post Base Area – Class 1E Batteries; dated June 28, 1985

LP52120; Lesson Plan, Maintain SVC Controls and Protection System; dated January 10, 2002

LP85277; Shutdown Service Water System; Revision 5

LP85571; Auxiliary Power; Revision 5

Monthly SHIP System Report AP-Auxiliary Power; dated June 2003

Monthly SHIP System Report AP-Auxiliary Power; dated September 2003

MPR-065-019-1; Specification for RHR Heat Exchanger Test; Revision 2

MPR-065-019-2; Specification for Diesel Generator Heat Exchanger Test; Revision 1

OP-CL-101-302-1003, Preconditioning; Revision 0

OP-CL-108-101-1001; General Equipment Operating Requirements; Revision 1

Operational Requirements Manual; Attachment 1-2; Remote Shutdown Instruments and Controls; Revision 36

Operational Requirements Manual; Attachment 1-3; Remote Shutdown Instruments and Controls; Revision 23

Policy Statement #49; Switchyard and Interconnect Agreement; Revision 0

System Description for AC Electrical Distribution System (AP); Revision 3

System Description for Component Cooling Water System; Revision 4

System Description for Fuel Pool Cooling and Cleanup System; Revision 4

System Description for Residual Heat Removal System; Revision 5

System Description for Shutdown Service Water System; Revision 4

System Notebook AC Distribution System; dated September 30, 2003

System Notebook Shutdown Service Water System; dated September 22, 2003

Technical Specification 3.3.3.2; Remote Shutdown System; Amendment No. 95

Technical Specifications 3.3.8.1; Loss of Power Instrumentation; Amendment No. 122

Technical Specification 3.7.1; Division 1 and 2 Shutdown Service Water (SX) Subsystems and Ultimate Heat Sink (UHS); Amendment No. 95

Technical Specification Bases B3.7.1; Division 1 and 2 Shutdown Service Water (SX) Subsystem and Ultimate Heat Sink (UHS); Amendment No. 1-1

Technical Specification 3.7.2; Division 3 Shutdown Service Water (SX) Subsystem; Amendment No. 95

Technical Specification Bases B3.7.2; Division 3 Shutdown Service Water (SX) Subsystem; Amendment No. 1-1

Technical Specifications Section 3.8; Electrical Power Systems; Amendment No. 142

Technical Specification 5.5.2; Primary Coolant Sources Outside Containment; Amendment No. 155

USAR Table 6.3-1; Operational Sequence of Emergency Core Cooling Systems for Design-Basis Accident (Large Break)

USAR Chapter 8; Electric Power; Revision 10

USAR Section 9.1.3; Spent Fuel Pool Cooling and Cleanup System; Revision 10

USAR Section 9.2; Water Systems; Revision 10

USAR Section 9.4.5.3; ECCS Equipment Area Cooling System; Revision 10

Modifications

AP-038; Install ERAT SVC; Revision 0

AP-038, Sup. 2; Make Final Terminations to Tie the ERAT SVC to the Plant; Revision 0

EC 27799; Design and Licensing Documents Affected by 95 deg F SX Temperature; Revision 0

EC 164745; Correct Valve Position Indication; date February 19, 1997

EC 166836; Remove Freeze Signal from the RAT (ERAT) SVC; dated February 7, 2001

EC 166837; Remove Freeze Signal from the RAT (ERAT) SVC; dated July 28, 2000

EC 166838; Remove Freeze Signal from the RAT (ERAT) SVC; dated July 28, 2000

EC 339019; Modify DC Power to RAT SVC Output Breakers Trip Scheme; Revision 0

EC 325572; Modification to SX System to Address IEIN 92-18; Revision 0

EC 339049; Modify DC Power to ERAT SVC Output Breakers Trip Scheme; Revision 0

EC 339985; Increase Plugging Allowance for RHR “B” Heat Exchanger (1E12B001B); Revision 1

EC 341491; Change Orifice 1SX12MB to Correct Flow Balance Discrepancies; Revision 1

EC 343286; Extend the Periodicity of Testing for the Safety Related Coolers / HX / Chillers That Are Cooled by SX (Standby Service Water for GL 89-13); datedd August 5, 2003

ECN 27398; Provide Instructions for the Installation of Self Lubricated Bronze Bushings in SX Division III Pump 1SX01PC; dated June 27, 1992

ECN 31092; Install a Flange Set and New Flow Restriction Orifice 1SX23M in the Backwash Line 1SX29BA-3 for Strainer 1SX01FA - Division 1 Shutdown Service Water System; Revision 0

ECN 31303; Division 1 SX Motor Lube Oil Cooler Replacement; dated November 22, 2002

ECN 31405; Reconfigure SX System Control Logic and Valve Positions in Order to Establish an Alternate SSW Pump 1SX01PA Minimum Flow Path; Revision 0

Field Alteration SXF009; Vacuum Breakers on SX Lines; Revision 0

Operability Evaluations

160302; Small Leak in the Discharge Piping 1SX04AA from the Division 1 Emergency DG Heat Exchanger in the Division 1 Diesel Oil Tank Room; Revision 2

169812; SX Relief Valve for the Division 3 DG Heat Exchanger is Leaking Approximately 0.5 g.p.m. Past its Seat; Revision 0

176960-08; Several Relief Valves in Division 2 SX Had Lifted; Revision 0

Procedures

CC-AA-309; Control of Design Analyses; Revision 3

CC-AA-309-1001; Guidelines for Preparation and Processing Design Analyses; Revision 0

CC-MW-103-1001; Configuration Change Control Guidance; Revision 1

CPS 1003.10; Clinton Power Station (CPS) Program for NRC Generic Letter 89-13 (Service Water Problems Affecting Safety-Related Equipment); Revision 4

CPS 1860.01; Cold Weather Operations; Revision 4d

CPS 1860.01-C001; Cold Weather Preparations Checklist; Revision 3c

CPS 1860.01-C002; Cold Weather Restoration Checklist; Revision 3b

CPS 2400.01; Circulating Water Screen house (CWSH) Intake Structure Inspection; Revision 8

CPS 2400.01C001; WS Bay Inspection Checklist; Revision 6

CPS 2400.01C002; Unit 1 SX Pump Bay; Revision 6

CPS 2602.01; Heat Exchanger Performance of Shutdown Service Water Coolers Covered By NRC Generic Letter 89-13; Revision 15

CPS 2602.01D006; Acceptance Criteria for Periodic Testing of SX Heat Exchangers; Revision 8

CPS 2700.12; Division 1 SX System Flow Balance Verification; Revision 4b

CPS 2700.12-D001; SX System Flow Verification Data Sheet - Division 1; Revision 3

CPS 2700.13; Division 2 SX System Flow Balance Verification; Revision 5a

CPS 2700.13-D001; SX System Flow Verification Data Sheet - Division 2; Revision 4

CPS 2700.14; Division 3 SX System Flow Balance Verification; Revision 2a

CPS 2700.14-D001; SX System Flow Verification Data Sheet - Division 3; Revision 1

CPS 2700.15; Division 1 Diesel Generator (12 Cylinder) Jacket Water Cooler (1DG11AA) Heat Exchanger Performance Covered By NRC Generic Letter 89-13; Revision 5

CPS 2700.16; Division 1 Diesel Generator (16 Cylinder) Jacket Water Cooler (1DG12AA) Heat Exchanger Performance Covered By NRC Generic Letter 89-13; Revision 5

CPS 2700.22; Cooling Coil Air Side Performance Monitoring for Generic Letter 89-13; Revision 2

CPS 3203.01; Component Cooling Water (CC); Revision 26c

CPS 3211.01; Shutdown Service Water (SX); Revision 23

CPS 3211.01C001; Division I SX System Flush Checklist; Revision 8

CPS 3211.01C002; Division II SX System Flush Checklist; Revision 8

CPS 3211.01C003; Division III SX System Flush Checklist; Revision 6C

CPS 3312.01; Residual Heat Removal (RH), Revision 35c

CPS 3317.01; Fuel Pool Cooling and Cleanup (FC), Revision 21e

CPS 3501.01; High Voltage Auxiliary Power System; Revision 25a

CPS 3501.01D001; Monitoring Safety Related 4.16KV Bus Voltage Data Sheet; Revision 3

CPS 3501.01E001; High Voltage Auxiliary Power System Electrical Lineup; Revision 13

CPS 3505.01; 345 and 138kV Switchyard (SY); Revision 11b

CPS 3505.03; RAT and ERAT Static VAR Compensator (SVC); Revision 4a

CPS 3506.01; Diesel Generator and Support Systems; Revision 30c

CPS 3514.01C005; 4160V Bus 1A1 (1AP07E) Outage; Revision 4a

CPS 3514.01E005; 4160V Bus 1A1 Outage Restoration Electrical Lineup; Revision 2

CPS 4003.01; Remote Shutdown (RS); Revision 13a

CPS 4003.01C005; RSP-Div 1 SX Operation; Revision 0

CPS 4003.01C008; RSP-Div 1 Shutdown Cooling Operation; Revision 1

CPS 4003.01C010; RSP-Div 2 SX Operation; Revision 0a

CPS 4003.01C012; RSP-Div 2 Suppression Pool Cooling Operation; Revision 1

CPS 4003.01C013; RSP-Div 2 Shutdown Cooling Operation; Revision 1a

CPS 4011.02; Spent Fuel Pool Abnormal Water Level Decrease; Revision 5b

CPS 4200.01; Loss of AC Power; Revision 15a

CPS 4303.02; Abnormal Lake Level; Revision 7a

CPS 4411.03; Injection / Flooding Sources; Revision 6A

CPS 5007.05; Alarm Panel 5007 Annunciators – Row 5, Revision 30a

CPS 5011.07; Alarm Panel 5011 Annunciators – Row 7; Revision 28

CPS 5011.08; Alarm Panel 5011 Annunciators – Row 8; Revision 28

CPS 5060.08; Diesel Generator 1A Trouble; Revision 30a

CPS 5284; Alarm Panel 5284 Annunciators at 1PL12JA; Revision 25a

CPS 8410.04; Molded Case Circuit Breaker/Bucket Component Functional Testing and Maintenance; Revision 18d

CPS 8410.04; Molded Case Circuit Breaker/Bucket Component Functional Testing and Maintenance; Revision 15

CPS 8501.26; TD-5 Relay Inspection, Calibration with Doble F2000 Test Equipment and Functional Test; Revision 1b

CPS 8501.26D001;TD-5 Relay Calibration Data Sheet; Revision 2a

CPS 9027.01; Remote Shutdown Panel Operability Check; Revision 30a

CPS 9027.01C001; RSP Operability - RHR A Checklist; Revision 5

CPS 9027.01C007; RSP Operability - SX Checklist; Revision 5a

CPS 9027.01C009; RSP Operability - Division 26Checklist; Revision 5

CPS 9061.06; Containment Drywell Isolation Valve Cold Shutdown 18 Month Operability; Revision 37a

CPS 9061.06C008; Div 1 Fuel Pool Makeup Isol Valve Operability (SX in Service) Checklist; Revision 35

CPS 9061.06C008; Div 1 Fuel Pool Makeup Isol Valve Operability (SX in Service) Checklist; Revision 36

CPS 9061.06C013; Div 2 Fuel Pool Makeup Isol Valve Operability (SX in Service) Checklist; Revision 35

CPS 9061.06C013; Div 2 Fuel Pool Makeup Isol Valve Operability (SX in Service) Checklist; Revision 36a

CPS 9069.01; Shutdown Service Water Operability Test; Revision 42c

CPS 9069.01-D001; SX System Operability Data Sheet; Revision 41b

CPS 9080.20; DG 1C Overcurrent Trip Test and Trip Bypass Operability; dated March 26, 2002

CPS 9080.20; DG 1C Overcurrent Trip Test and Trip Bypass Operability; Revision 0 Temp Change 0a

CPS 9082.01; Offsite Source Power Verification; Revision 36e

CPS 9082.02; Electrical Distribution Verification; Revision 34d

CPS 9382.01; 125VDC Battery Pilot Cell Check; Revision 32a

CPS 9601.06; Fire Door and Secondary Containment Doors Inspections; Revision 28b

CPS 9861.09; Shutdown Service Water Boundary Valve Leak Testing; Revision 0c

ERA-AA-2002; System Health Indicator Program; Revision 3

MA-AA-1000; Conduct of Maintenance Manual; Revision 2

OP-AA-108-07; Switchyard Control; Revision 1

OP-CL-108-107-1001; Degraded Grid Voltage Actions; Revision 1

OP-MW-108-107-1001; Station Response to Grid Capacity Conditions; Revision 0

Vendor Manuals

GEK-83438; Residual Heat Removal System Heat Exchangers (E12-B001); September 1983

K2828-A-0001; Byron Jackson Pump Division Vertical Circulator Shutdown Service Water Pumps/37 KXL 2-Stage, Serial No. 761-C-0091/2; Revision 18

K2828-B-0003; Sulzer Bingham Pump/S/N 1A278, 8x14A VCM; Revision 11

K2880-0001; Division 3 - R. P. Adams and Company, Inc. Dual Backwash Automatic Poro-Edge Strainers HDWS & VDWS/8-inch VWS-7NS Strainers (1SX01FC); Revision 9

K2880-0002; Divisions 1 & 2 - R. P. Adams and Company, Inc. Dual Backwash Automatic Poro-Edge Strainers HDWS and VDWS/30-inch HDWS-80 Strainers (1SX01FA, 1SX01FB); Revision 9

Westinghouse I.L. 41-579.1L; Type TD-5 Time Delay Relay; dated June 1974

Westinghouse I.L. 41-102E; Type COM Overcurrent Relay; dated June 1979

Work Orders

330-00-030; Remote Shutdown Service Water Pump Discharge Pressure C61-N503 Channel Calibration; dated February 10, 2000

330-01-061; Remote Shutdown Service Water Pump Discharge Pressure C61-N503 Channel Calibration; dated June 15, 2001

2787; Replace Piping Downstream of MOV 1SX013D Which Has Shown Pipe Wall Thinning; dated September 12, 2002

3202; Replace Defective Sections of Line 1SX20AB-8-inch; dated November 15, 2001

3963; Valve 1SX017A Leaks By 2-3 Gallons Per Minute, Replace Valve with New Pre-Tested Valve; dated January 7, 2002

4577; Replace Piping 1SX20AA-8-inch Downstream of 1SX019A; dated April 27, 2002

4716; Reconfigure the 'SX' Inlet / Outlet Piping in accordance with ECN 31302 to Install New Motor / Coil; dated September 12, 2002

23474-01; 8751.05B20 Ver SX Strainer 1B High DP Verification; dated August 22, 2002

23481; SX Low Pressure 1PT-SX032 Calibration and Functional Test; dated November 26, 2002

23482-01; SX Low Pressure 1PT-SX030 Calibration and Functional Test; dated April 24, 2001

23483; SX Low Pressure 1PT-SX028 Calibration and Functional Test; dated September 11, 2002

117073; Panel Doors not Tight Against the Door; dated October 23, 2003

117105; 4160V Bus 1C1 Reserve Feed PT Cubicle Door is Misaligned; dated October 22, 2003

117109; BOP Battery 1F Needs New Service Caps; dated October 24, 2003

117111; BOP Battery 1E Needs New Service Caps; dated October 24, 2003

117114; Div III Battery Needs Service Caps Replaced; dated October 24, 2003

117135; Div 2 Battery Cells #53 & 54 need to have post seals cleaned; dated October 24, 2003

323128; SX Low Pressure 1PT-SX030 Calibration and Functional Test; dated October 22, 2002

333740; Remote Shutdown Service Water Pump Discharge Pressure C61-N503 Channel Calibration; dated December 18, 2002

357520; Perform Radiography of 1SX12AB; dated September 18, 2001

357522; Perform Radiography of 1SX12AA; dated September 18, 2001

426175-01; 9437.30R20 CC Remote S/D Div 2 SX Strainer Outlet Pres; dated September 2, 2003

457011; Perform Radiography of 1SX12AB; dated September 3, 2001

518364; SX Low Pressure 1PT-SX032 Calibration and Functional Test; dated October 1, 2003

629059; 4160V Bus 1C1 Reserve Feed PT Cubicle Door is Misaligned; dated October 27, 2003

C010125003; Ultrasonic Test Exams Should Be Performed to Determine Actual Condition of Piping Upstream of Valve 1SX019B; dated February 15, 2001

LIST OF ACRONYMS USED

ADAMS	Agency-wide Documents Access and Management System
CFR	Code of Federal Regulations
CPS	Clinton Power Station
CR	Condition Report
DRS	Division of Reactor Safety
EOP	Emergency Operating Procedure
ERAT	Emergency Reserve Auxiliary Transformer
HPCS	High Pressure Core Spray
IMC	Inspection Manual Chapter
LOCA	Loss of Coolant Accident
MOV	Motor Operated Valve
NRC	United States Nuclear Regulatory Commission
PAR	Publically Available Records
PT	Potential Transformer
RAT	Reserve Auxiliary Transformer
SDP	Significance Determination Process
SSW	Shutdown Service Water
TBD	To Be Determined
UFSAR	Updated Final Safety Analysis Report
USAR	Updated Safety Analysis Report
URI	Unresolved Item