



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PA 19406-2713

July 30, 2018

Mr. Peter P. Sena, III
President and Chief Nuclear Officer
PSEG Nuclear LLC - N09
P. O. Box 236
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION UNIT 1 – DESIGN BASES
ASSURANCE INSPECTION (TEAMS) REPORT 05000354/2018010

Dear Mr. Sena:

On June 22, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Hope Creek Generating Station (HCGS). The NRC inspectors discussed the results of this inspection with John Garecht, Hope Creek Maintenance Director, and other members of your staff. The final results of the inspection were presented via telephone on July 6, 2018, to David Mannai, Senior Director Regulatory Operations, and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspectors did not identify any findings or more-than-minor violations.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* (CFR), Part 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Mel Gray, Chief
Engineering Branch 1
Division of Reactor Safety

Docket No.: 50-354
License No.: NPF-57

Enclosure:
Inspection Report 05000354/2018010

cc w/encl: Distribution via ListServ

SUBJECT: HOPE CREEK GENERATING STATION UNIT 1 – DESIGN BASES
 ASSURANCE INSPECTION (TEAMS) REPORT 05000354/2018010 DATED
 JULY 30, 2018

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Number: 50-354

License Number: NPF-57

Report Number: 05000354/2018010

Enterprise Identifier: I-2018-010-0035

Licensee: PSEG Nuclear LLC (PSEG)

Facility: Hope Creek Generating Station (HCGS)

Location: Hancocks Bridge, NJ 08038

Inspection Dates: April 16 to May 4, 2018

Inspectors: A. Patel, Senior Reactor Inspector (Team Lead), Division of
Reactor Safety (DRS)
K. Mangan, Senior Reactor Inspector, DRS
N. Floyd, Senior Reactor Inspector, DRS
J. Brand, Reactor Inspector, DRS
M. Yeminy, NRC Contractor
N. Della Greca, NRC Contractor

Approved By: Mel Gray, Chief
Engineering Branch 1
Division of Reactor Safety

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring PSEG's performance at Hope Creek Generating Station by conducting a team design bases assurance inspection in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

No findings or more-than-minor violations were identified.

INSPECTION SCOPES

This inspection was conducted using the appropriate portions of the inspection procedure (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.21M - Design Bases Assurance Inspection (Teams)

The inspectors evaluated the following components, permanent modifications, and operating experience during the weeks of June 4 and June 18, 2018.

For the components, the team reviewed the attributes listed in IP 71111.21M, Appendix A, *Component Review Attributes*, such as those listed below. Specifically, the team evaluated these attributes as per 71111.21M, Appendix B, *Component Design Review Considerations* and 71111.21M, Appendix C, *Component Walkdown Considerations*. Specific documents reviewed are listed in the Documents reviewed section.

Components (5 Samples)

- Station Auxiliary Cooling System to Residual Heat Removal Heat Exchanger Return Isolation Valve, EG-HV-2512A.
 - Material condition and installed configuration (e.g., visual inspection during a walkdown)
 - Normal, abnormal, and emergency operating procedures
 - Consistency between documentation (e.g., procedures)
 - Component/system health reports, corrective maintenance effectiveness and records, and corrective action history
 - Design calculations
 - Surveillance testing and recent test results

The team used Appendix B guidance for *Valves, Instrumentation, and Electrical Loads*.

- Reactor Core Isolation Cooling Turbine.
 - Material condition and installed configuration (e.g., visual inspection during a walkdown)
 - Normal, abnormal, and emergency operating procedures
 - Consistency between documentation (e.g., procedures)
 - Component/system health reports, corrective maintenance effectiveness and records, and corrective action history
 - Design calculations

- Surveillance testing and recent test results

The team used Appendix B guidance for *Valves, Instrumentation, and Pumps (as applicable to turbine operation)*.

- 'A' Emergency Diesel Generator mechanical components.
 - Material condition and installed configuration (e.g., visual inspection during a walkdown)
 - Normal, abnormal, and emergency operating procedures
 - Consistency between documentation (e.g., procedures)
 - Component/system health reports, corrective maintenance effectiveness and records, and corrective action history
 - Design calculations
 - Surveillance testing and recent test results

The team used Appendix B guidance for *Electric Loads*.

- 'B' Emergency Diesel Generator electrical components.
 - Material condition and installed configuration (e.g., visual inspection during a walkdown)
 - Normal, abnormal, and emergency operating procedures
 - Consistency between documentation (e.g., procedures)
 - Component/system health reports, corrective maintenance effectiveness and records, and corrective action history
 - Design calculations
 - Surveillance testing and recent test results

The team used Appendix B guidance for *Electric Loads*.

- 'A' Residual Heat Removal Pump.
 - Material condition and installed configuration (e.g., visual inspection during a walkdown)
 - Normal, abnormal, and emergency operating procedures
 - Consistency between documentation (e.g., procedures)
 - Component/system health reports, corrective maintenance effectiveness and records, and corrective action history
 - Design calculations
 - Surveillance testing and recent test results

The team used Appendix B guidance for *Pumps, Valves, and Instrumentation*.

Component, Large Early Release Frequency (1 Sample)

- RCIC Exhaust Check Valve, H1FC-1-FC-V003.
 - Material condition and installed configuration (e.g., visual inspection during a walkdown)
 - Normal, abnormal, and emergency operating procedures

- Consistency between documentation (e.g., procedures)
- Component/system health reports, corrective maintenance effectiveness and records, and corrective action history
- Design calculations
- Surveillance testing and recent test results

The team used Appendix B guidance for *Valves*.

Permanent Modifications (4 Samples)

- 'C' Emergency Diesel Generator intercooler pump flexible hose support modification
- Revise emergency operating procedure calculation, H-1-ZZ-MDC-4019, to reflect reactor fuel changes
- Motor Control Center compartment replacements
- High Pressure Coolant Injection system battery analysis

Operating Experience (3 Samples)

- NRC IN 2016-05, Operating Experience Regarding Complications from Loss of Instrument Air, dated April, 27 2016
- NRC Regulatory Issue Summary 2011-12, Adequacy of Station Electric Distribution System Voltages, Revision 1
- NRC IN 2009-09 – Improper Flow Controller Settings Renders Injection Systems Inoperable and Surveillance Did Not Identify, dated June, 19 2009

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On June 22, 2018, the team debriefed the Design Bases Assurance Inspection (Teams) preliminary results to Mr. John Garecht, Hope Creek Maintenance Director, and other members of PSEG staff.
- On July 6, 2018, the team conducted a phone exit presenting the final results of the inspection with Mr. David Mannai, Senior Director Regulatory Operations, and other members of PSEG staff.

DOCUMENTS REVIEWED**71111.21M - DESIGN BASES ASSURANCE INSPECTION (TEAMS)**Calculations

1-P-KJ-624-C010, Design Calculation for Emergency Diesel Generator (EDG) Surge/Vent Anchors, Rev. 0
 BC-0002(Q), NPSH for RHR Pumps with Suction from the Suppression Pool, Rev. 5
 BC-0023(Q), RHR Min Flow Orifice E/1-D001, Rev. 3
 BC-11(Q), RHR Minimum Flow Bypass Line Size, Rev. 2
 BC-3(Q), NPSH for RHR Pumps in Shutdown Cooling Mode, Rev. 3
 BD-0001, NPSH for RCIC System Pump, Rev. 4
 BD-0003, RCIC Hydraulic Analysis, Rev. 6
 C-1991, EDG Intercooler Pump Surge Piping, Rev. 0
 C-1992, EDG Intercooler Pump Vent Piping, Rev. 0
 DEH-09-0141, HPCI Steam Exhaust Piping Water Hammer Analysis, Dated 10/8/09
 E-1.3 (Q), Hope Creek Generating Station Short Circuit Study of 480FV Systems, Rev. 3
 E-1.4 (Q), HC Class 1E 125 & 250 VDC Systems Short Circuit and Voltage Drop Studies, Rev. 7
 E-15.1 (Q), Hope Creek Load Flow and Degraded Voltage Analysis, Rev. 7 & Rev. 11
 E-18, Selection of Overload Heaters for AC MOVs and Continuous Duty Motors, Rev. 2
 E-26 (Q), Breaker to Fuse & Fuse to Fuse Coordination for Appendix R, Rev. 4B
 E-5.1 (Q), HC Class 1E 250 VDC Station Battery and Charger Sizing, Rev. 9
 E-5.19 (Q), 250 VDC HPCI System Battery Analysis, Rev. 0
 E-7.12 (Q), HC AVR Limits and Protection Coordination, Rev. 0
 E-7.13 (Q), Penetration Assembly Protection, Rev. 4B
 E-7.4 (Q), E-7.4(Q) Class 1E 4.16 KV System Protection Relay Settings, Rev. 6
 E-7.7 (Q), Class 1E 480 V System Protecting Relaying, Rev. 7C
 E-9 (Q), Standby Class 1E Diesel Generator Sizing, Revs. 9, 9A, & 9B
 GM-0027, Diesel Generator Area HVAC Analysis, Rev. 1
 H-1-EG-MDC-0938, MOV Capability Assessment for 1EG-HV-2512A, Rev. 1
 Hope Creek Load Flow and Degraded Voltage Analysis, Rev. 11
 MIDAS 2015.226, MIDACALC Results 1BD-HV-F046 DC Motor Operated Valve, Rev. 5
 NAI-1484-01, Loads on Turbine Exhaust Pipes due to Post LOCA Turbine Trip, Rev. 1
 SC-JE-0059, Diesel Fuel Oil Day Tank Level, Rev. 4

Corrective Action Documents (*initiated in response to inspection)

20411602	20663859	20738711	20769459	20791142
20466535	20665454	20746795	20771585	20791715
20519905	20667174	20747160	20772476	20796656
20529533	20686017	20750168	20772476	20796705*
20594384	20686398	20751715	20780884	20796837*
20595967	20689441	20754048	20784381	20796838*
20601216	20696918	20754048	20784382	20796847*
20602340	20698578	20754162	20786607	20796862*
20613232	20701108	20760634	20786624	20796875*
20613929	20721062	20761521	20787622	20796917*
20628456	20723443	20764634	20790172	20796918*
20629808	20725078	20767192	20791131	20796929*
20633331	20736860	20769250	20791132	20796941*
20633802	20738706	20769250	20791133	20796985*

20797040*	20798770*	20798816	20798985*	20799124*
20797126*	20798781*	20798816	20798986*	20799129*
20797498*	20798784*	20798937*	20799011*	20799131*
20798740	20798786*	20798940*	20798816*	20799402*

Design and Licensing Basis

Docket No, 50-354, Hope Creek Generating Station, Amendment to Facility Operating License,
Amendment No. 144

Drawings

1-P-FC-003, Fab Isometric RCIC Turbine Supply and Exhaust Reactor Building, Rev. 13
1-P-FC-01, System Isometric Reactor Building RCIC Turbine Supply and Exhaust, Rev. 19
10855-J200 (Q)-595, Logic Diagram, 4.16 KV Sys., Diesel Generator Circuit Breaker
(I) 52-40207, Rev. 15
10855-J200 (Q)-949, Logic Diagram, 862 Sys., Diesel Generator (I) DG800 Control (1 of 3),
Rev. 7
10855-M (Q) 366 (1), Sh. 1 of 30, Elect. Schematic, Engine Control, Rev. 17
10855-M (Q) 366 (2), Sh. 2 of 30, Elect. Schematic, Engine Control, Rev. 12
10855-P-0570, Sh. 15, Welding and Non Destructive Testing Requirements for Field Erected
Piping, Rev. 7
AM 88-1, Sht. 1, PID Auxiliary Building Diesel Area Control Diagram, Rev. 15
E-0001-0 (Q), Single Line Diagram, Station, Rev. 24
E-0006-1 (Q), Sh. 1 of 2, Single Line Meter & Relay Diagram, 4.16 KV Class 1E Power System,
Rev. 13
E-0006-1 (Q), Sh. 2 of 2, Single Line Meter & Relay Diagram, 4.16 KV Class 1E Power System,
Rev. 11
E-0008-1 (Q), Sh. 2 of 2, Single Line Meter & Relay Diagram, Diesel Generators, Rev. 4
E-0009-1 (Q), Sh. 1, Single Line Meter & Relay Diagram, 125 VDC System, Channels A & C,
Rev. 26
E-0009-1 (Q), Sh. 2, Single Line Meter & Relay Diagram, 125 VDC System, Channels B & D,
Rev. 30
E-0009-1 (Q), Sh. 4, Single Line Meter & Relay Diagram, 125 VDC System, Channels C & D,
Rev. 13
E-0018-1 (Q), Sh. 1 of 3, Single Line Meter & Relay Diagram, 480 Volt Class 1E Unit Substation
10B410, 10B420, 10B430, 10B440, 10B450, 10B460, 10B470, 10B480, Rev. 36
E-0018-1 (Q), Sh. 2, Single Line Meter & Relay Diagram, 480 Volt Class 1E Unit Substation
10B410, 10B420, 10B430, 10B440, 10B450, 10B460, 10B470, 10B480, Rev. 40
E-0019-1 (Q), 480 Volt MCC Tabulation Class 1E – Aux. Bldg. – D/G Area 10B411, 10B421,
10B431, 10B441, Rev. 13
E-0019-1 (Q), Sh. 2, 480 Volt MCC Tabulation Class 1E – Aux. Bldg. – D/G Area 10B411,
10B421, 10B431, 10B441, Rev. 15
E-0020-1 (Q), Sh. 1 of 2, 480 Volt MCC Tabulation Class 1E – Aux. Bldg. – D/G Area 10B451,
10B461, 10B471, 10B481, Rev. 17
E-0020-1 (Q), Sh. 2, 480 Volt MCC Tabulation Class 1E – Aux. Bldg. – D/G Area 10B451,
10B461, 10B471, 10B481, Rev. 13
E-0021-1 (Q), Sh. 1 of 6, 480 Volt MCC Tabulation, Class 1E MCC – Reactor Area 10B212,
10B222, 10B232 & 10B242, Rev. 55
E-0046-1 (Q), Schematic Meter & Relay Diagram, 4.16 KV Class 1E Station Power System,
Switchgears 10A401 & 10A403, Rev. 8
E-0047-1 (Q), Schematic Meter & Relay Diagram, 4.16 KV Class 1E Station Power System,
Switchgears 10A401 & 10A403, Rev. 7

E-0070-0 (Q), Electrical Schematic Diagram, Class 1E 4.16 KV Sta. Pwr. Sys. Swgr., Main Circuit Breaker (I) 52-40201, Rev. 8
 E-0071-0 (Q), Electrical Schematic Diagram, Class 1E 4.16 KV Sta. Pwr. Sys. Swgr., Main Circuit Breaker (I) 52-40208, Rev. 8
 E-0081-0 (Q), Electrical Schematic Diagram, Class 1E – 4.16 KV Unit Substa. Xfmr. Feeder, Circuit Breaker (I) 52-40203, Rev. 5
 E-0085-0 (Q), Electrical Schematic Diagram, Class 1E – 4.16 KV Sta. Pwr. Sys. Swgr., Diesel Gen. Circuit Brkr. (I) 52-40207, Rev. 11
 E-0208-0 (Q), Sh. 2, Electrical Schematic Diagram, Class 1E – 4.16 KV Circuit Breaker Control Station Service Water Pump, Rev. 12
 E-0223-0, Sh. 1, RHR HX Outlet Valve 1-HV-2512A Scheme No. 1C0318, Rev. 5
 E-3060-0 (Q), Logic Diagram, Class 1E Station Pwr. Swgr. – 4.16 KV System, Main Circuit Breaker, Rev. 16
 E-3061-0 (Q), Logic Diagram, Class 1E Station Pwr. Swgr. – 4.16 KV System Unit Substa. Xfmr. Feeder Circuit Breaker, Rev. 66
 E-3080-0 (Q), Sh. 1 of 2, Logic Diagram, Class 1E Sta. Pwr. Swgr. – 4.16 KV System, Diesel Generator Circuit Breaker, Rev. 12
 E-3080-0 (Q), Sh. 2 of 2, Logic Diagram, Class 1E Sta. Pwr. Swgr. – 4.16 KV System, Diesel Generator Circuit Breaker, Rev. 8
 E-3081-0 (Q), Sh. 1 of 2, Logic Diagram, Diesel Generator Control, Rev. 7
 E-3081-0 (Q), Sh. 2 of 2, Logic Diagram, Diesel Generator Control, Rev. 10
 FSK-P-1-KJ-622, Small Piping/Aux Building Diesel Generator C from CG-400 to Tank C-407, Rev. 13
 FSK-P-1-KJ-624, Small Piping/Aux Building Diesel Generator C from Tank CT-407 to CG-400, Rev. 17
 J-10-0 (Q), Sh. 4, Logic Diagram, Station Service Water System, SSWS Pumps BP502 & DP502 Start, Rev. 15
 J-10-0 (Q), Sh. 5, Logic Diagram, Station Service Water System, SSWS Pumps BP502 & DP502 Stop, Rev. 12
 J-51-0, Sht. 16, Logic Diagram Residual Heat Removal, Rev. 7
 J-107-0 (Q), Sh. 4, Logic Diagram, Emergency Load Sequencer, Rev. 3
 J-4049-0, Sh. 2, Reactor Core Isolation Cooling RCIC Pump Turbine Control, Rev. 7
 M-0910-0, Sh. 1, Process Flow Diagram Safety & Turbine Auxiliaries Cooling, Rev. 2
 M-11-1, Sh. 1, Safety Auxiliaries Cooling Reactor Building, Rev. 32
 M-30-1, Sh. 2, Diesel Generator Auxiliary Systems Intercooler and Injector Cooling, Jacket Water, Crankcase Vacuum Air Intake, Exhaust and Vibration Monitoring Systems, Rev. 27
 M-49-1, Reactor Core Isolation Cooling, Rev. 30
 M-50-1, RCIC Pump Turbine, Rev. 33
 M-51-1, Sht. 1, Residual Heat Removal, Rev. 51
 M-51-1, Sht. 2, Residual Heat Removal, Rev. 45
 M-85-1, Sht. 1, Auxiliary Building Diesel Area Air Flow Diagram, Rev. 19
 N-749, RHR Pump Head Capacity Curve, Rev. 0
 N-1223, SACS Pump Curve, Rev. 0

Functional, Surveillance and Modification Acceptance Testing

30280950, 24M PM Calibration 1KJSS-421B: "B" EDG Speed Switch, Performed on 2/14/17
 50003496, Emergency Diesel Generator Interdependence Verification Test – 10 Year, Performed on 4/21/09
 50065569, 60M ST / 10-D-421, Class 1E, Channel A, 250 Volt Battery Performance Test, Performed on 4/19/09

50123056, 60M ST / 10-D-421, Class 1E, Channel A, 250 Volt Battery Performance Test, Performed on 10/24/13

50162739, Integrated Emergency Diesel Generator 1BG400 Test – 18 Months, Performed on 4/24/15

50175271, EDG1BG400 – 24 Hour Operability Run and Hot Restart Test, Performed on 9/9/16

50175692, NUST 18M ST 52-40208, 4KV Swgr. Degraded Voltage Instrumentation Channel Calibration & Functional Test, Performed on 11/2/16

50175732, NUST 18M ST 52-40201, 4KV Swgr. Degraded Voltage Instrumentation Channel Calibration & Functional Test, Performed on 10/31/16

50175793, 4.16 KV Bus 10A402 Undervoltage Test and Return to Service - B Channel, Performed on 4/18/18

50176377, NUST ST 18M Test, 10-D-421 Class 1E, Channel A, 250V Battery Service Test, Performed 10/31/16

50188845, EDG1BG400 – 24 Hour Operability Run and Hot Restart Test, Performed on 3/13/18

50190557, NUST Perform IC-FT.PE-0006 on Load Sequencer Div-2, Performed on 4/15/18

50190581, NUST ST 18M Test, 10-D-421 Class 1E, Channel A, 250V Battery Service Test, Performed on 5/3/18

50199618, ST / 10-D-421, 250 Volt Battery Quarterly Surveillance, Performed on 2/25/18

50199857, NUST 3M ST 10-A-402-01 / 4.16 KV Swgr Degraded Voltage, Performed on 2/17/18

50199858, NUST 3M ST 10-A-402-08 / 4.16 KV Swgr Degraded Voltage, Performed on 2/17/18

50202110, NUST ST / 10-D-421, 250 Volt Battery Quarterly Surveillance, Performed on 4/1/18

50202136, Emergency Diesel Generator 1BG400 Operability Test – Monthly, Performed on 4/30/18

50203057, Emergency Diesel Generator 1BG400 Operability Test – Monthly, Performed on 5/16/18

50203499, NUST 31D ST 10-D-421 Class 1E, Channel A, 250V Battery Test, Performed on 5/27/18

50203541, Perform IC-FT.PE-0002 on Load Sequencer Div-2, Performed on 5/14/18

HC.MD-PM.FC-0001, Reactor Core Isolation Cooling Steam Turbine Inspection and PM, performed 5/16/18

HC.MD-PM.FC-0003(Q), Reactor Core Isolation Cooling Turbine Exhaust Check Valve Inspection & PM, performed 12/14/12

HC.OP-FT.KJ-0001 (Q), Emergency Diesel Generator 1AG400-Functional Test, performed 4/3/18

HC.OP-IS.BC-0001(Q), AP202 A Residual Heat Removal Pump In-Service Test, Rev. 50 – Performed 4/9/18

HC.OP-IS.BD-0001, Reactor Core Isolation Cooling Pump-OP203-Inservice Test, performed 2/23/18

HC.OP-IS.BD-0101(Q), Reactor Core Isolation Cooling System Valves – Inservice Test, performed 3/6/17

HC.OP-IS.BD-0101(Q), Reactor Core Isolation Cooling System Valves – Inservice Test, performed 3/20/18

HC.OP-IS.EG-0101, Safety Auxiliaries Cooling System - Subsystem A Valves - Inservice Test, Performed 01/05/18

HC.OP-IS.EG-0102 (Q), Safety Auxiliary Cooling System-Subsystem B Valves-IST, performed 1/27/14

HC.OP-ST.BD-0003, RCIC Functional Verification-18 Months, performed 2/28/17

HC.OP-ST.EG-0001, SACS Flow Path Verification - Monthly, Performed 04/30/18

HC.OP-ST.KJ-0001 (Q), Emergency Diesel Generator 1AG400-Operability Test-Monthly, performed 5/8/18

Miscellaneous

10866-J610-65-1, Self-Acting Pressure Regulator, dated 5/2/83
 160607BP-01, Machinery Analysis Report for C EDG Jacket Water Piping, dated 06/07/16
 70105083, Technical Evaluation for Hope Creek 4.16kV 1E Undervoltage Relay Scheme, dated 12/23/09
 70183330, Apparent Cause Evaluation for C EDG Jacket Water Braided Hose Leak, Rev. 3
 BWROG-TP-14-018, Beyond Design Basis RCIC Elevated Temperature Functionality Assessment, Rev. 0
 Instrument Calibration Data Report, RCIC Flow Control H1FC-FC-4158, dated 6/8/18
 Program Health Report for Inservice Testing (IST), Q4 - 2017
 Program Health Report for Motor Operated Valves (MOV), Q2 - 2017
 System Health Report for Diesel Generator, Q2 - 2018
 System Health Report for SACS & TACS, Q2 - 2018

Modifications and Design Changes

DCP 80090368, Modify EG-HV-2512A logic to allow valve to be throttled, Rev. 1
 DCP 80095620, Motor Control Center (MCC) Compartment Replacements, Rev. 4
 DCP 80114476, "C" Emergency Diesel Generator Governor Control System Replacement, Rev. 0
 DCP 80117790, Revise EOP Calculation H-1-ZZ-MDC-4019, Rev. 0
 DCP 80119727, Emergency Diesel Generator Vibrations Piping and Support Adjustments, Rev. 0
 DCP 80120892, 250 VDC HPCI System Battery Analysis, Rev. 0
 DCP 80121930, VAVF-0032, Diaphragm Valve Replacement, Rev. 0

Procedures

EP-HC-111-223, HCGS ECG – EAL Technical Basis, Rev. 2
 EP-HC-111-222, HCGS ECG – EAL Technical Basis, Rev. 0
 ER-AA-302-1007, MOV Limitorque Actuator Capability Determination Methodology, Rev. 7
 HC.IC-DB.BD-0002, EG-M Control Box and Ramp Generator Signal Converter (RCIC), Rev. 1
 HC.IC-DC.ZZ-0358(Q), Dynalco Controls Universal Speed Switch & Speed Transmitter SST-2000 Series, Rev 0
 HC.IC-FT.PE-0002(Q), Emergency Load Sequencer System, Diesel Generator B, 1BC428, Rev. 9
 HC.IC-FT.PE-0006(Q), Time Interval Test. Emergency Load Sequencer System, Diesel Generator B, 1BC428, Rev.10
 HC.IC-LC.FC-001, RCIC Turbine Speed Control System, Rev. 11
 HC.MD-GP.ZZ-0015(Q), Battery Equalizing Charge, Rev 21, Rev. 22 and Rev. 23
 HC.MD-ST.KJ-0001, Diesel Generator Technical Specification Surveillance and Preventative Maintenance, Rev. 46
 HC.MD-ST.PB-0003(Q), Class 1E 4.16 KV Degraded Voltage Monthly Instrumentation Channel Functional Test, Rev. 28
 HC.MD-ST.PB-0016(Q), Class 1E 4.16 KV Feeder Degraded Voltage 18 Month Instrumentation Channel Calibration & Functional Test 10-A-40201, Rev. 6
 HC.MD-ST.PB-0017(Q), Class 1E 4.16 KV Feeder Degraded Voltage 18 Month Instrumentation Channel Calibration & Functional Test 10-A-40208, Rev. 7
 HC.MD-ST.PJ-0001(Q), 250 Volt Weekly Battery Surveillance, Rev. 24
 HC.MD-ST.PJ-0002(Q), 250 Volt Quarterly Battery Surveillance , Rev. 34 & Rev. 35
 HC.MD-ST.PJ-0007(Q), 250 Volt Station Batteries Performance Discharge Test Using BCT-2000 with Windows Software and Associated Surveillance Testing, Rev. 0 & Rev. 3

HC.MD-ST.PJ-0008(Q), 250 Volt Station Batteries 18 Month Service Test Using BCT-2000 with Windows Software and Associated Surveillance Testing, Rev. 5
 HC.MD-ST.ZZ-0009, Motor Operated Valve Thermal Overload Protection Surveillance, Rev. 21
 HC.OP-AB.COOL-0002, Safety/Turbine Auxiliaries Cooling System, Rev. 9
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30081231	30250278	30304683	50123216	50200694
30083447	30252044	30309933	50136863	50200704
30118628	30252044	30309933	50176495	50200930
30130913	30256212	30312618	50179558	50201143
30130913	30256212	30312618	50180978	50201416
30212868	30263676	30315344	50183935	50201469
30212868	30263676	30315344	50185321	50201806
30227753	30274497	30317617	50189380	50201953
30227753	30274497	30317617	50190087	60077115
30228946	30283608	30317971	50199683	60132106
30229391	30283608	30318678	50200078	60134059
30229391	30285865	40001389	50200337	70148911
30250278	30303955	40018980	50200343	70187504
30250278	30303955	50003496	50200349	80115269