



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION IV
1600 E. LAMAR BLVD
ARLINGTON, TX 76011-4511

April 6, 2017

Mr. Robert S. Bement
Executive Vice President Nuclear/
Chief Nuclear Officer
Arizona Public Service Company
P.O. Box 52034, MS 7602
Phoenix, AZ 85072-2034

SUBJECT: PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 –
NRC EVALUATIONS OF CHANGES, TESTS, AND EXPERIMENTS BASELINE
INSPECTION REPORT 05000528/2017007; 05000529/2017007; AND
05000530/2017007

Dear Mr. Bement:

On March 3, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Palo Verde Nuclear Generating Station, Units 1, 2, and 3 and discussed the results of this inspection with Mr. J. Cadogan, Senior Vice President of Nuclear Operations, and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented one finding of very low safety significance (Green) in this report. This finding involved a violation of NRC requirements. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC resident inspector at the Palo Verde Nuclear Generating Station.

In accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding," of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of the

NRC's Agencywide Documents Access and Management 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/

Thomas R. Farnholtz, Chief
Engineering Branch 1
Division of Reactor Safety

Docket Nos. 50-528, 50-529, 50-530
License Nos. NPF-41, NPF-51, NPF-74

Enclosure:
Inspection Report 05000528/2017007
05000529/2017007, and 05000530/2017007
w/Attachment: Supplemental Information

cc: Electronic Distribution for Palo Verde

PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 – NRC EVALUATIONS OF CHANGES, TESTS, AND EXPERIMENTS BASELINE INSPECTION REPORT
 05000528/2017007; 05000529/2017007; AND 05000530/2017007 – April 6, 2017

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000528, 05000529; 05000530

License: NPF-41, NPF-51, NPF-74

Report: 05000528/2017007; 05000529/2017007; and 05000530/2017007

Licensee: Arizona Public Service Company

Facility: Palo Verde Nuclear Generating Station, Units 1, 2, and 3

Location: 5801 South Wintersburg Road
Tonopah, AZ 85354

Dates: February 27 through March 3, 2017

Inspectors: J. Drake, Senior Reactor Inspector Lead
J. Watkins, Reactor Inspector
C. Smith, Reactor Inspector
W. Cullum, Reactor Inspector

Approved By: Thomas R. Farnholtz
Chief, Engineering Branch 1
Division of Reactor Safety

Enclosure

SUMMARY

IR 05000528/2017007, 05000529/2017007, and 05000530/2017007; Palo Verde Nuclear Generating Station, Units 1, 2, and 3; Evaluations of Changes, Tests, and Experiments.

This report covers a one-week announced baseline inspection on evaluations of changes, tests, and experiments. The inspection was conducted by Region IV based engineering inspectors. One finding was identified by the inspectors. The finding was considered a non-cited violation of NRC regulations. The significance of most findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP). Cross-cutting aspects were determined using Inspection Manual Chapter 0310, "Aspects Within the Cross-Cutting Areas." Violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated July 9, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5, dated February 2014.

A. NRC-Identified Findings and Self-Revealed Findings

Cornerstone: Mitigating Systems

Green. The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," which states, in part, "Measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in § 50.2 and as specified in the license application, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions." Specifically, from August 11, 1982, to March 3, 2017, the licensee did not analyze dynamic pipe whip effects of a main feedwater line for a high-energy line break of a shutdown cooling line. In response to this issue, the licensee performed immediate and prompt operability evaluations and determined that the piping systems remained operable and could withstand the effects of a high-energy line break. This finding was entered into the licensee's corrective action program as Condition Report CR-17-02815.

The team determined that the failure to perform an adequate analysis for shutdown cooling and feedwater lines for high-energy line break pipe whip effects was a performance deficiency. This finding was more-than-minor because it was associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to analyze the main feedwater piping for high-energy line break effects called the operability of the piping system into question. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk significant due to seismic, flooding, or severe weather. The team determined that this finding did not have a cross-cutting aspect because the most significant contributor to the performance deficiency did

not reflect current licensee performance. Specifically, the licensee performed the calculation in 1982 and revised it in 1991; therefore, the performance deficiency occurred outside of the nominal three-year period for “present performance.” (Section 4OA2.1)

B. Licensee-Identified Violations

No findings of more-than-minor significance were identified.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

1R17 Evaluations of Changes, Tests, and Experiments (71111.17T)

.1 Evaluations of Changes, Tests, and Experiments

a. Inspection Scope

The inspectors reviewed 13 evaluations performed pursuant to Title 10, Code of Federal Regulations (CFR), Part 50, Section 59, to determine whether the evaluations were adequate and that prior NRC approval was obtained as appropriate. The inspectors also reviewed 21 screenings, where licensee personnel had determined that a 10 CFR 50.59 evaluation was not necessary. The inspectors reviewed these documents to determine if:

- the changes, tests, and experiments performed were evaluated in accordance with 10 CFR 50.59 and that sufficient documentation existed to confirm that a license amendment was not required;
- the safety issue requiring the change, tests, and experiment was resolved;
- the licensee conclusions for evaluations of changes, tests, and experiments were correct and consistent with 10 CFR 50.59; and
- the design and licensing basis documentation was updated to reflect the change.

The inspectors used, in part, Nuclear Energy Institute (NEI) 96-07, "Guidelines for 10 CFR 50.59 Implementation," Revision 1, to determine acceptability of the completed evaluations and screenings. The NEI document was endorsed by the NRC in Regulatory Guide 1.187, "Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments," dated November 2000. The list of evaluations, screenings, and/or applicability determinations reviewed by the inspectors is included as an attachment to this report.

This inspection constituted 13 samples of evaluations and 21 samples of screenings as defined in IP 71111.17-04.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

40A2 Problem Identification and Resolution

.1 Review of Corrective Action Program Documents

a. Inspection Scope

The inspectors reviewed 10 corrective action program documents that identified or were related to the 10 CFR 50.59 program. The inspectors reviewed these documents to evaluate the effectiveness of corrective actions related to permanent plant modifications and evaluations of changes, tests, and experiments. In addition, corrective action documents written on issues identified during the inspection were reviewed to verify adequate problem identification and incorporation of the problems into the corrective action system. The list of specific corrective action documents that were sampled and reviewed by the inspectors are listed in the attachment to this report.

b. Findings

Failure to analyze shutdown cooling and feedwater lines for high-energy line break pipe whip effects

Introduction. The team identified a Green non-cited violation of Title 10 of the Code of Federal Regulations Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to translate regulatory requirements and the design basis into specifications, drawings, procedures, and instructions. Specifically, the licensee failed to analyze the dynamic pipe whip effects between the main feedwater and shutdown cooling lines.

Description. The licensee's updated final safety analysis report (UFSAR) states that the design basis for high-energy line breaks complies with Branch Technical Position (BTP) 3-1. Specifically, UFSAR, Section 3.6.2.1.3.C, states, in part, "a whipping pipe is considered insufficient to rupture an impacted pipe of equal or larger nominal pipe size and equal or heavier wall thickness." BTP 3-1 states, in part, that "protection from pipe whip is not required if the internal energy level associated with the whipping pipe can be demonstrated to be insufficient to impair the safety function of any SSC to an unacceptable level....the energy level in a whipping pipe may be considered insufficient to rupture an impacted pipe of equal or larger nominal pipe size and equal or heavier wall thickness."

Calculation 13-MC-ZZ-0633 analyzes high-energy line breaks for various piping systems. Section I analyzes the effects of a high-energy line break in the 16 inch, schedule 160, stainless steel shutdown cooling line on the 24 inch, schedule 80, carbon steel main feedwater line. Section I concludes that whipping pipe protection is not needed because the main feedwater line will not be damaged or impaired by the failure of the shutdown cooling line.

The impacted main feedwater line has a larger diameter than the shutdown cooling line; however, the main feedwater line is thinner (i.e., not equal or heavier wall thickness) than the shutdown cooling line; therefore, the design method used to exclude pipe whip

protection for the main feedwater line is not in accordance with the design and licensing basis.

Analysis. The team determined that the failure to perform an adequate analysis for shutdown cooling and feedwater lines for high-energy line break pipe whip effects was a performance deficiency. This finding was more-than-minor because it was associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to analyze the main feedwater piping for high-energy line break effects called the operability of the piping system into question. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk significant due to seismic, flooding, or severe weather. The team determined that this finding did not have a cross-cutting aspect because the most significant contributor to the performance deficiency did not reflect current licensee performance. Specifically, the licensee performed the calculation in 1982 and revised it in 1991; therefore, the performance deficiency occurred outside of the nominal three-year period for "present performance."

Enforcement. The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," which states, in part, "Measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in § 50.2 and as specified in the license application, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions." Contrary to the above, from August 11, 1982, to March 3, 2017, the licensee did not establish measures to assure that applicable regulatory requirements and the design basis for a system, structure, and component to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. Specifically, the licensee did not analyze dynamic pipe whip effects of a main feedwater line for a high-energy line break of a shutdown cooling line. In response to this issue, the licensee performed immediate and prompt operability evaluations and determined that the piping systems remained operable and could withstand the effects of a high-energy line break. This finding was entered into the licensee's corrective action program as Condition Report CR-17-02815. Because this finding was of very low safety significance and was entered into the licensee's corrective action program, this violation is being treated as a non-cited violation, consistent with Section 2.3.2.a of the NRC Enforcement Policy: NCV 05000528/2017007-01; 05000529/2017007-01; 05000530/2017007-01: "Failure to Analyze Shutdown Cooling and Feedwater Lines for High-Energy Line Break Pipe Whip Effects."

4OA6 Meetings

Exit Meeting Summary

On March 3, 2017, the inspectors presented the preliminary inspection results to Mr. J. Cadogan, Senior Vice President of Nuclear Operations, and other members of the licensee's staff. The licensee acknowledged the results as presented. While some proprietary information was reviewed during this inspection, no proprietary information was included in this report.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Cadogan, Senior Vice President of Nuclear Operations
M. Lecal, Senior Vice President of Regulatory and Oversight
B. Rash, Vice President, Engineering
R. Carbonneau, Director, Nuclear Assurance
B. Berles, Director, Nuclear Fuel Management
G. Andrews, Director, Regulatory Affairs
P. Paramithar, Director, Project Engineering
M. McGhee, Department Leader, Nuclear Regulatory Affairs
M. Radspinner, Department Leader, System Engineering
B. Hansen, Department Leader, ISFSI Engineering
D. Elkinton, Section Leader, Compliance
P. Han, Senior Engineer
R. Chu, Engineer
N. Aaroncooke, Engineer
R. Doyle, Engineer

NRC Personnel

C. Peabody, Senior Resident Inspector
D. Reinert, Resident Inspector
D. You, Resident Inspector

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

Opened and Closed

- | | | |
|---------------------|-----|---|
| 05000528/2017007-01 | NCV | Failure to Analyze Shutdown Cooling and Feedwater Lines for High-Energy Line Break Pipe Whip Effects (Section 4OA2) |
| 05000529/2017007-01 | NCV | Failure to Analyze Shutdown Cooling and Feedwater Lines for High-Energy Line Break Pipe Whip Effects (Section 4OA2) |
| 05000530/2017007-01 | NCV | Failure to Analyze Shutdown Cooling and Feedwater Lines for High-Energy Line Break Pipe Whip Effects (Section 4OA2) |

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.

10 CFR 50.59 Screenings

<u>Number</u>	<u>Description or Title</u>	<u>Revision</u>
S-05-0228	Remove Blowers and Add Air Conditioning Units and Fans to Switchgear Enclosures	2
S-09-0300	DMWO 2778159 (CH-200) Rev.1, Removal of Post-Accident Sampling System (PASS) Isolation Valves	3
S-12-0004	Replace Anti-Reverse Rotation Speedswitch and Protective relays	1
S-12-0054	Procedure 40OP-9SI02 Change That Aligns the High Pressure Safety Injection (HPSI) Systems for Boration of the Cold-Leg Injection Flow Paths	
S-13-0115	DEC 00397	1
S-13-0140	Supporting Analysis for Unit 3 BMI	1
S-13-0164	Add New Isolation Control Circuits Related to the Backup Pressurizer Heaters, Air Handling Unit (AHU) M-HJB-Z03 and Valves CHB-UV-505, CHB-UV-515, SSB-UV-203, CHN-UV-501 and CHE-HV-536 These Circuits Are of the Remote Shutdown System	1
S-14-0023	Installation of Electrical Equipment Necessary to Support the Requirements of NRC Order EA-12-049	1
S-14-0044	DMWO 4498668 Replace Obsolete Analog Temperature Indicator with Digital	0
S-14-0064	Installation of Secondary 600 V Power Cables and Fiber Optic (FO) Cables Which Will Provide Power and Communications to the Emergency Equipment Storage Facility (EESF) for FLEX Equipment	1
S-14-0066	13-EC-PK-209 125V DC Protection Class 1E	0
S-14-0073	TMOD 4540569 Installs Pressure Instrumentation	0
S-14-0091	PO EDC 2014-00575	0

10 CFR 50.59 Screenings

<u>Number</u>	<u>Description or Title</u>	<u>Revision</u>
S-14-0092	Install Manual Transfer Switches In-Line With the Existing Non-Class 1E 4.16 kV Power (NB) System That Provides Offsite Power to the Class 1-E 4.16 KV Power (PB) System	3
S-14-0100	LDCR 14-F039	2
S-14-0104	Replacement Of The Athena 2000 Or 2200 Series Analog Temperature Controller(S)	1
S-14-0117	Large Normal Chiller Control Panel Replacement	3
S-15-0002	13-MC-HF-0200	0
S-15-0013	Emergency Diesel Generator Crankcase Breather Vent Piping	0
S-15-0024	Alternate source of Reactor Coolant Pump Seal Injection Water	0
S-15-0037	Provide Temporary Power to the ultrasonic Flow Indicating Transmitter (3JSINFIT0300) That Measures Flow to the Refueling Water Tank From HPSI, LPSI or CS Pumps	0
S-15-0049	Plant Multiplexer Server Upgrade	0
S-15-0065	Update Procedure for Train A HPSI Injection and Miscellaneous SI Valves - Cycle - Inservice Test	0
S-15-0075	EDC 2016-00016	1
S-15-0051	DMWO 4196876 - Change the Alarm Setpoint of 2 Ex-Core Monitoring System Startup Channels From 2000 CPS to 10,000 Cps	0
S-15-0084	Install Fuses, Relays, and Control Switch to Provide the Capability to Properly Isolate the Lube Oil and Seal Oil Emergency Pumps from a Postulated Appendix R Fire Induced Fault that Occurs in the Control Room Circuitry	0
S-15-0087	PROC 40AO-9ZZ17 R021 Charging Sequence Equipment Operations, Inadvertent PPS-ESFAS Actuations	1
S-15-0116	NA-1635 Open Phase Detection System	0
S-16-0007	Study 13-MS-A152 R0 & 15-F018 Max Design - Qual Temp Comps Fuel Bldg	0
S-16-0049	DTP_FLOW_ERROR 1MOD8 REL	1

10 CFR 50.59 Screenings

<u>Number</u>	<u>Description or Title</u>	<u>Revision</u>
S-16-0090	Upgrade Cathodic Protection (Qh) Sys With New Rectifier Remote Monitoring and Control	0

10 CFR 50.59 Evaluations

<u>Number</u>	<u>Description or Title</u>	<u>Revision</u>
E-14-0002	Replace the Inverters of the Class 1E Vital Instruments AC Power (PN) System	2
E-14-0003	Excitation Replacement Electrical	1
ENG-DMWO 3094267	Emergency Diesel Generator Crankcase Breather Vent Piping	0
E-14-0005	Calculation 13-MC-ZZ-0633 / 13-MC-ZZ- 0594 / LDCR 2014-F051	0
E-15-0001	DEC-00494 R1 accepts as-is original alloy 600 nozzle remnant BMI	0
E-15-0002	The Digital Asset Protection Systems (DAPS is a Centralized Monitoring and Cyber Security Response Architecture for Process Systems	0
E-15-0003	73TI-9CH08 Charging Pump Suction Pres Data Collect	0
E-15-0004	Calculation 13-JC-SF-0202, Procedure 40OP-9SF01	1
E-15-0005	TMWO 4712119 Disposition	0
E-16-0001	Study 13-MS-A151	0
E-16-0002	Add New 525kV Transmission Line Delaney to Palo Verde Nuclear Generating Station (PVNGS) Switchyard	0
E-16-0003	13-JC-HP-0200, Widen Containment Hydrogen Monitoring Indication Tolerances	0
E-16-0006	Engineering Study 13-MS-A154	0

Condition Reports (Issued)

17-02694	17-02717	17-02734	17-02805
17-02839	17-02815	17-02847	17-02860
17-02864	17-02926	17-02932	

Condition Reports (Reviewed)

15-00418	15-03878	15-04292	15-04400
PVAR 2988861	CRDR 4520395	16-15738	16-07160
16-19427	16-19752		

Calculations

<u>Number</u>	<u>Description or Title</u>	<u>Revision</u>
13-NC-CH-0314	Allowable Post-LOCA Back Leakage to RWT	5
13-MC-SI-0215	HPSI System Performance Evaluation and Surveillance Requirements Basis Calculation	8
13-MS-A154	Tornado-Borne Missile Impact Analyses for Unprotected Components	0
13-MS-A152	Study for the Design Temperature Validation of Components Located in the Fuel Building	0
LTR-SCC-14-010	DTP Flow Error 1MOD08	0
13-MC-HF-0200	Fuel Building Normal HVAC System	3
EDC 2016-00016	Fuel Building Transient Analysis	1
13-MC-ZZ-633	Consolidation of Jet Impingement/Pipe Whip Calculations	13

Procedures

<u>Number</u>	<u>Description or Title</u>	<u>Revision</u>
01DP-0AP12	Condition Reporting Process	23
01DP-0CC01	Design Control Process	18
81DP-0EE10	Design Change Process	42
87DP-0MC06	Material Engineering Evaluation	29
93DP-0LC07	10 CFR 50.59 and 72.48 Screenings and Evaluations	26/27
93DP-0LC07-01	10 CFR 50.59 and 72.48 Administrative Guideline	3
40OP-9CH03	Reactor Coolant Pump Seal Injection System	28
73TI-9CH08	Charging Pump Suction Pressure Data Collection	2

Procedures

<u>Number</u>	<u>Description or Title</u>	<u>Revision</u>
73ST-9XI53	Train A HPSI Injection and Miscellaneous SI Valves - Cycle Revision - Inservice Test	7
73ST-9XI54	Train B HPSI Injection and Miscellaneous SI Valves - Cycle - Inservice Test	7
40OP-9SI02	Recovery from Shutdown Cooling to Normal Operating Lineup	95
40OP-9SF01	Control Element Drive Mechanism Control System (CEDMCS) Operation	28

Drawings

<u>Number</u>	<u>Description or Title</u>	<u>Revision</u>
01-M-SIP-001	Safety Injection and Shutdown Cooling System	55
01-E-PHA-003	Single Line Diagram 480V Class 1E Power /system Motor Control Center 1E-PHA-M33	27
01-E-PBA-001	Single Line Diagram 4.16 KV Class 1E Power System Switchgear 1E-PBA-S03	12
03-P-DGF-703	Diesel Generator Building ISO	1
01-M-DGP-001	P&I Diagram Control Air Diesel Generator System Sht. 1	58
01-M-DGP-001	P&I Diagram Air Intake and Exhaust Diesel Generator System Sht. 2	58
01-M-HDP-001	P&I Diagram HVAC Diesel Generator Building	10
01-M-SIP-001	P&I Diagram Safety Injection and Shutdown Cooling System	55
01-P-ZYA-024	Refueling Water Tank Piping Plan	1
01-P-SGF-119	Containment Building Isometric Main Steam and Main Feedwater	4
01-P-SIF-105	Containment Building Isometric Safety Injection System Shutdown Cooling Lines	25

Miscellaneous

<u>Number</u>	<u>Description or Title</u>	<u>Revision / Date</u>
	Nuclear Assurance Department (NAD) Audit Plan and Report 2015-005 Design Control	December 21, 2015
	Nuclear Assurance Department (NAD) Audit Plan and Report 2016-005 Technical Specifications and Administrative Controls	July 29, /2016
SWMS SA 4598219	SSA (Simple Self-Assessment) of 1R18 Eng. Modifications	January 23, 2015
SWMS 15-06151-003	3R18 SSA of Eng. Modifications	September 30, 2015
SWMS 16-02116-002	2R19 SSA of Eng. Modifications	March 9, 2016
SWMS 16-13475-002	1R19 SSA of Eng. Modifications	August 30, 2016
	Updated Final Safety Analysis Report	18A
EE 4270732	Debris in 2B EW Heat Exchanger	
EE 4595004	Evaluate the Reliability of the Unit 2 A Charging Pump Under Reduced Suction Pressure Conditions	
EE 4679551	Evaluation of Disabling Low Pressure Suction Trip of Charging Pump 2A	
EE 4667405	Evaluation of 73TI-9CH08	
CMWO 4745019	V126 Work with New Fingerplate Instructions	
CMWO 4341442	V316 Work with Inadequate Fingerplate Instruction	
00734-1	Pentair T-Series Mid-Size Model T-53 Outdoor Air Conditioner Vendor Manual	