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

August 9, 2018

EA-18-089

Mr. Timothy S. Rausch
President and Chief Nuclear Officer
Susquehanna Nuclear, LLC
769 Salem Blvd., NUCSB3
Berwick, PA 18603

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION – INTEGRATED INSPECTION REPORT 05000387/2018002 AND 05000388/2018002

Dear Mr. Rausch:

On June 30, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Susquehanna Steam Electric Station (SSES), Units 1 and 2. On July 26, 2018, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

NRC inspectors documented three findings of very low safety significance (Green) in this report. All of these findings involved violations of NRC requirements. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the Enforcement Policy.

Separately, a violation involving a failure to set secondary containment during operations with a potential for draining the reactor vessel (OPDRVs) was identified during the Unit 1 refueling outage. Specifically, from April 2, 2018, to April 24, 2018, while all other technical specifications (TSs) were met, Susquehanna conducted several OPDRVs without establishing secondary containment operability, which was a violation of TS 3.6.4.1, “Secondary Containment.” NRC issued Enforcement Guidance Memorandum (EGM) 11- 003, “EGM on Dispositioning Boiling Water Reactor (BWR) Licensee Noncompliance with TS Containment Requirements during Operations with a Potential for Draining the Reactor Vessel,” on October 4, 2011, allowing for the exercise of enforcement discretion for such OPDRV-related TS violations, when certain criteria are met. The EGM, which was revised on January 15, 2016, also required that licensees receiving discretion must submit a license amendment request (LAR) to accept the NRC’s generic change to the standard TS that will allow a graded approach to OPDRV requirements. The LAR was required to have been submitted and accepted for review by December 20, 2017, in order to continue receiving enforcement discretion while the LAR is being reviewed. By letter dated September 20, 2017, Susquehanna submitted the required LAR (ADAMS Accession No. ML17265A434). Because the NRC has determined the licensee has met all criteria, enforcement discretion was previously authorized for the site in EA-17-089, and the violations occurred during the period while the LAR described in the EGM was under NRC review, the NRC is exercising enforcement discretion and will not issue enforcement action for these violations.

If you contest the violations or significance of these NCVs, 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 I; the Director, Office of Enforcement; and the NRC Resident Inspector at SSES. In addition, if you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U. S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC, 20555-0001; with copies to the Regional Administrator, Region I, and the NRC Resident Inspector at SSES.

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* (10 CFR), Part 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Jonathan E. Greives, Chief
Reactor Projects Branch 4
Division of Reactor Projects

Docket Numbers: 50-387 and 50-388
License Numbers: NPF-14 and NPF-22

Enclosure:
Inspection Report 05000387/2018002 and
05000388/2018002

cc w/encl: Distribution via ListServ

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION – INTEGRATED INSPECTION REPORT 05000387/2018002 AND 05000388/2018002 DATED AUGUST 9, 2018

DISTRIBUTION: (via email)
DLew, RA (R1ORAMAIL Resource)
JGiessner, DRA (R1ORAMAIL Resource)
RLorson, DRP (R1ORAMAIL Resource)
DPelton, DRP (R1DRPMAIL Resource)
JYerokun, DRS (R1DRSMAIL Resource)
BWelling, DRS (R1DRSMAIL Resource)
JGreives, DRP
SBarber, DRP
ATurilin, DRP
DBeacon, DRP
LMicewski, DRP, SRI
TDaun, DRP, RI
AGould, DRP, AA
JBowen, RI, OEDO
RidsNrrPMSusquehanna Resource
RidsNrrDorlLpl1 Resource
ROPreports Resource

DOCUMENT NAME: G:\DRP\BRANCH4\Inspection Reports\Susquehanna\2018\Q2\2018_002 final.docx
ADAMS ACCESSION NUMBER: **ML18221A500**

☑ SUNSI Review		☑ Non-Sensitive ☐ Sensitive		☑ Publicly Available ☐ Non-Publicly Available	
OFFICE	RI/DRP	RI/DRP	RI/DRP		
NAME	LMicewski via email	SBarber	JGreives		
DATE	8/9/18	8/9/18	8/9/18		

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers:	50-387 and 50-388
License Numbers:	NPF-14 and NPF-22
Report Numbers:	05000387/2018002 and 05000388/2018002
Enterprise Identifier:	I-2018-002-0063
Licensee:	Susquehanna Nuclear, LLC (Susquehanna)
Facility:	Susquehanna Steam Electric Station, Units 1 and 2
Location:	Berwick, Pennsylvania
Inspection Dates:	April 1, 2018 to June 30, 2018
Inspectors:	L. Micewski, Senior Resident Inspector T. Daun, Resident Inspector E. Burket, Reactor Inspector J. Furia, Senior Health Physicist A. Turilin, Project Engineer
Approved By:	Jonathan E. Greives, Chief Reactor Projects Branch 4 Division of Reactor Projects

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring Susquehanna's performance at Susquehanna Steam Electric Station, Units 1 and 2 by conducting the baseline inspections described in this report 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. NRC-identified and self-revealing findings, violations, and additional items are summarized in the table below.

List of Findings and Violations

Control Structure Chiller Inoperability Due to Identified Refrigerant Leaks Not Corrected			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	GREEN Finding NCV 05000387;388/2018-002-01 Closed	H.5 – Human Performance Work Management	71111.15
A Green finding and associated non-cited violation (NCV) of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action" was self-revealed when the licensee failed to promptly correct a condition adverse to quality associated with the 'B' control structure chiller which rendered the 'B' control structure chiller inoperable.			

Inadequate Procedure Adherence to Radiation Protection Requirements			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Occupational Radiation Safety	GREEN Finding NCV 05000387/2018-002-02 Closed	H.8 – Procedure Adherence	71124.01
A Green finding and associated NCV of Technical Specification (TS) 5.7, "High Radiation Area," was self-revealed when two plant workers entered a posted high radiation area, and one worker's electronic dosimeter alarmed on dose rate. The workers had not been briefed for entry into this area.			

Inadequate Justification for Deferral of Corrective Actions for certain Degraded Safety-Related Components			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	GREEN Finding NCV 05000387/2018-002-03 Closed	P.3 – Problem Identification and Resolution	71152
The inspectors identified a Green finding and associated NCV of TS 5.4.1, "Procedures," when the licensee failed to promptly correct numerous operable but nonconforming or degraded safety-related components.			

Additional Tracking Items

Type	Issue number	Title	Report Section	Status
LER	05000388;387/2017-009-00	Secondary Containment Declared Inoperable Due to Trip of Zone II Equipment Exhaust Fan	71153	Closed
LER	05000388;387/2017-009-01	Secondary Containment Declared Inoperable Due to Trip of Zone II Equipment Exhaust Fan	71153	Closed
LER	05000387/2018-001-00	Implementation of Enforcement Guidance Memorandum (EGM) 11-003, Revision 3, during Unit 1 Refueling	71153	Closed

TABLE OF CONTENTS

PLANT STATUS

Unit 1 began the inspection period shutdown in Mode 4 for a planned refueling outage, and reached Mode 5 later the same day. Following the completion of refueling and maintenance activities, operators commenced a reactor startup on April 30, 2018, and achieved full power on May 10, 2018. On May 11, 2018, operators reduced power to approximately 57 percent to perform a rod pattern adjustment. Full power was achieved again on May 14, 2018. On May 18, 2018, operators reduced power to approximately 59 percent to perform a rod pattern adjustment. On May 20, 2018, power was raised to 96 percent and held for a preconditioning hold. On May 21, 2018, operators reduced power to approximately 73 percent to perform a rod pattern adjustment. On May 22, 2018, power was raised to 98 percent and held for a preconditioning hold. Unit 1 reached 100 percent on June 4, 2018, and remained at or near 100 percent power for the remainder of the inspection period.

Unit 2 began the inspection period at 100 percent power. On May 10, 2018, operators reduced power to approximately 85 percent to perform a rod pattern adjustment and a condenser waterbox cleaning. Operators returned the unit to 100 percent on May 13, 2018, and remained at or near 100 percent power for the remainder of the inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (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 (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed plant status activities described in IMC 2515, Appendix D, "Plant Status," and conducted routine reviews using IP 71152, "Problem Identification and Resolution." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess Susquehanna's performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Summer Readiness (1 Sample)

The inspectors evaluated summer readiness of offsite and alternate AC power systems.

71111.04 - Equipment Alignment

Partial Walkdown (5 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

(1) Unit 1, division 1 residual heat removal (RHR) in service for shutdown cooling during refueling outage on April 1, 2018

(2) Unit 1, fuel pool cooling while credited for decay heat removal on April 18, 2018
(3) Unit 2, fuel pool cooling assist on April 18, 2018
(4) Unit 1, standby liquid control (SBLC) during flow surveillance on June 20, 2018
(5) Unit Common, 'A' emergency diesel generator (EDG) during 'B' EDG breaker maintenance on June 25, 2018

Complete Walkdown (1 Sample)

The inspectors evaluated system configurations during a complete walkdown of the Unit 1 SBLC system on April 24, 2018.

71111.05A/Q - Fire Protection Annual/Quarterly

Quarterly Inspection (5 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

(1) Unit 1, main steam pipeway exhaust fan room (fire zone 1-4G) on April 1, 2018
(2) Unit Common, main control room (fire zone 0-26H) and technical support center (fire zone 0-26K) on April 3, 2018
(3) Unit 1 and Unit 2, fuel pool pump and heat exchanger rooms (fire zones 1-5A-N and 2-5A-N) on April 19, 2018
(4) Unit 1, drywell (fire zone 1-4F) on April 30, 2018
(5) Unit 1, equipment room (fire zone 1-3C-N,S,W) on May 2, 2018

71111.07 - Heat Sink Performance

Heat Sink (1 Sample)

The inspectors evaluated Susquehanna's monitoring and maintenance of Unit 1 RHR heat exchanger performance.

71111.08 – Inservice Inspection Activities (1 Sample)

The inspectors evaluated non-destructive examination and welding activities at Susquehanna Unit 1 by reviewing the following activities and programs from April 9–13, 2018:

(1) Volumetric Examinations
   a) Manual Ultrasonic Testing of Reactor Vessel Head Spare Nozzles, N6A and N6B
   b) Manual Ultrasonic Testing of Reactor Vessel Head Vent and Instrumentation Nozzle, N7

(2) Surface Examinations
   a) Penetrant Testing of 'A' Recirculation Pump Integral Attachments, 1P401-HW-1(2)(3) and (4)

(3) Visual Examinations
   a) In-vessel Visual Inspection of Jet Pump Components, Top Guide, and Steam Dryer
   b) General Visual Examination of the Drywell Liner

(4) The inspectors reviewed the welding activities in completed Work Order 2000208 associated with repair activities for the 'B' reactor recirculation pump seal and cooler.

71111.11 - Licensed Operator Requalification Program and Licensed Operator Performance

Operator Requalification (1 Sample)

The inspectors observed and evaluated licensed operator simulator training on May 21, 2018, which included a loss of the high pressure coolant injection pump due to overspeed, a steam leak in the pressure averaging manifold that caused a slow rise in reactor pressure and power, a loss of all condensate pumps, a loss of coolant accident from bottom drain, and the failure of select components to automatically start as required.

Operator Performance (1 Sample)

The inspectors observed and evaluated reactor startup activities at Unit 1 on April 30, 2018.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness (3 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

(1) Unit Common, automatic transfer switch (0ATS526) cycling during transfer to alternate source on April 30, 2018
(2) Unit 1, motor operated valve issues during outage on May 28, 2018
(3) Unit 1, in-service testing failures of relief valves during the outage on May 29, 2018

71111.13 - Maintenance Risk Assessments and Emergent Work Control (7 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

(1) Unit 1, protected equipment for inventory control in accordance with Enforcement Guidance Memorandum (EGM)-11-003 from April 2, 2018 through April 24, 2018
(2) Unit 1, protected equipment for shutdown cooling using 'D' RHR pump on April 9, 2018
(3) Unit 2, yellow risk during replacement of 1X220 from April 13, 2018 through April 16, 2018
(4) Unit 1, shutdown risk on spent fuel pool for decay heat removal on April 18, 2018
(5) Unit 2, yellow risk during maintenance of 0ATS526 on April 25, 2018
(6) Unit Common, yellow risk during Loop 'A' emergency service water (ESW) system outage window on May 21, 2018
(7) Unit 2, yellow risk during reactor pressure vessel level automatic depressurization system permissive during maintenance on June 26, 2018

71111.15 - Operability Determinations and Functionality Assessments (7 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

(1) Unit 1, over thrust event on low-pressure coolant injection valve (F015A) on April 12, 2018
(2) Unit Common, 'B' control structure chiller trip on low refrigerant temp during loss of coolant accident (LOCA)/loss of offsite power (LOOP) test on April 12, 2018
(3) Unit Common, 'A' EDG did not reach rated voltage during monthly surveillance on May 1, 2018
(4) Unit Common, 'A' diesel generator overvoltage trip following LOOP/LOCA testing when synchronizing with off-site power on May 3, 2018
(5) Unit 2, primary containment penetration radiation seals have Kaowool installed on June 14, 2018
(6) Unit 1, multiple spurious alarms on containment vacuum breaker on June 22, 2018
(7) Unit Common, 'D' EDG fuel oil day tank level found below technical specification limit on June 25, 2018

71111.18 - Plant Modifications (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

(1) Unit 1, EC 2169911 to install plates to cap radiation seal in primary containment penetrations on June 15, 2018

71111.19 - Post Maintenance Testing (9 Samples)

The inspectors evaluated post maintenance testing for the following maintenance/repair activities:

(1) Unit 1, reactor core isolation coolant exhaust vacuum breaker (F063 and F064) post maintenance testing following rebuild on April 18, 2018
(2) Unit 1, HV148F006 (SBLC Outboard Isolation Valve) following motor-operated valve actuator overhaul and torque switch replacement on April 25, 2018
(3) Unit 1, low-pressure coolant injection valve F015A following internal inspection on April 29, 2018
(4) Unit 1, vessel/leak check prior to start-up on April 29, 2018
(5) Unit 1, 'D' main steam isolation valve following seat work on May 3, 2018
(6) Unit 1, drywell spray inboard isolation valve following motor replacement on May 6, 2018
(7) Unit 1, 1A reactor recirculation pump after replacement on May 22, 2018
(8) Unit Common, division 1 ESW following maintenance outage window on May 23, 2018
(9) Unit 1, 'D' RHR following pump replacement 1P202D on June 4, 2018

71111.20 - Refueling and Other Outage Activities (1 Sample)

The inspectors evaluated Unit 1 Refueling Outage 20 activities from April 1, 2018, to April 30, 2018.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Routine (5 Samples)

(1) Unit 1, 1D630 battery discharge test on April 11, 2018
(2) Unit 1, division 2 LOCA/LOOP test on April 12, 2018
(3) Unit 1, 24 month SBLC operability (B Loop) SO-153-003B on April 26, 2018
(4) Unit 1, 24-month engineered safeguard system auxiliary bus 1A 93% degraded grid voltage timer reselect test on May 22, 2018
(5) Unit 2, quarterly functional test of reactor vessel water level (low low) level 3 (automatic depressurization system permissive) on June 26, 2018

Inservice (2 Samples)

(1) Unit 1, high pressure coolant injection flow verification on May 2, 2018
(2) Unit 1, excess flow check valve testing on May 4, 2018

Containment Isolation Valve (1 Sample)

(1) Unit 1, SE-159-044 on April 16, 2018

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

Radiological Hazard Assessment (1 Sample)

The inspectors conducted independent radiation measurements during walkdowns of the facility and reviewed the radiological survey program, air sampling and analysis, continuous air monitor use, recent plant radiation surveys for radiological work activities, and any changes to plant operations since the last inspection to verify survey adequacy of any new radiological hazards for onsite workers or members of the public.

Instructions to Workers (1 Sample)

The inspectors reviewed high radiation area work permit controls and use, and observed containers of radioactive materials and assessed whether the containers were labeled and controlled in accordance with requirements.

The inspectors reviewed several occurrences where a worker's electronic personal dosimeter alarmed. The inspectors verified follow-up investigations of actual radiological conditions for unexpected radiological hazards were performed.

Radiological Hazards Control and Work Coverage (1 Sample)

The inspectors evaluated in-plant radiological conditions and performed independent radiation measurements during facility walkdowns and observation of radiological work activities. The inspectors examined the physical controls for selected high radiation areas,

locked high radiation areas, and very high radiation areas to verify conformance with the occupational performance indicator.

Contamination and Radioactive Material Control (1 Sample)

The inspectors observed the monitoring of potentially contaminated material leaving the radiological controlled area and inspected the methods and radiation monitoring instrumentation used for control, survey, and release of that material.

71124.02 - Occupational As Low As Reasonably Achievable (ALARA) Planning and Controls

Implementation of ALARA and Radiological Work Control (1 sample)

The inspectors reviewed radiological work controls and ALARA practices during the observation of in-plant work activities. The inspectors verified use of shielding, contamination controls, airborne controls, radiation work permit controls, and other work controls were consistent with ALARA plans and that work-in-progress reviews were performed in a timely manner.

Radiation Worker Performance (1 sample)

The inspectors observed radiation worker and radiation protection technician performance during radiological work to evaluate worker ALARA performance according to specified work controls and procedures. Workers were interviewed to assess their knowledge and awareness of planned and/or implemented radiological and ALARA work controls.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified Susquehanna's performance indicator submittals listed below (4 Samples)

(1) Unit 1 and Unit 2, reactor coolant system specific activity from April 1, 2017, to March 31, 2018
(2) Unit 1 and Unit 2, reactor coolant system leak rate from April 1, 2017, to March 31, 2018

71152 - Problem Identification and Resolution

Semiannual Trend Review (1 Sample)

The inspectors reviewed Susquehanna's corrective action program (CAP) for trends that might be indicative of a more significant safety issue.

Annual Follow-up of Selected Issues (1 Sample)

The inspectors reviewed the Susquehanna's implementation of its CAP related to the following issue:

(1) High and locked high radiation area control

71153 - Follow-up of Events and Notices of Enforcement Discretion

Licensee Event Reports (3 Samples)

The inspectors evaluated the following licensee event reports (LERs):

(1) LER 05000388;387/2017-009-00, Secondary Containment Declared Inoperable Due to Trip of Zone II Equipment Exhaust Fan (ADAMS Accession No. ML17319A056). The inspectors determined that it was not reasonable to foresee or correct the cause discussed in the LER, and therefore no performance deficiency was identified. The inspectors also concluded that no violation of NRC requirements occurred.

(2) LER 05000388;387/2017-009-01, Secondary Containment Declared Inoperable Due to Trip of Zone II Equipment Exhaust Fan (ADAMS Accession No. ML18046A861). The inspectors determined that it was not reasonable to foresee or correct the cause discussed in the LER, and therefore no performance deficiency was identified. The inspectors also concluded that no violation of NRC requirements occurred.

(3) LER 05000387/2018-001-00, Implementation of Enforcement Guidance Memorandum (EGM) 11-003, Revision 3, during Unit 1 Refueling (ADAMS Accession No. ML18144A818). The circumstance surrounding this LER are documented in the Inspection Results section of this report.

INSPECTION RESULTS

Control Structure Chiller Inoperability Due to Identified Refrigerant Leaks Not Corrected			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	GREEN Finding NCV 05000387;388/2018-002-01 Closed	H.5 – Human Performance Work Management	71111.15
A Green finding and associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was self-revealed when the licensee failed to promptly correct a condition adverse to quality associated with the 'B' control structure chiller, which rendered the 'B' control structure chiller inoperable.			

Description: The control structure chilled water system provides chilled water to the cooling coils located in the control room, control structure, the computer room, and the Unit 1 emergency switchgear room cooling air handling units. The control structure chillers normally transfers heat to the non-safety-related service water system, and during emergency plant operation heat is transferred to the ESW system.

On April 12, 2018, the station was performing required technical surveillance testing to verify that the appropriate loads tripped and appropriately sequenced back onto the diesel generators following a LOOP in combination with a LOCA initiation signal. During this testing, the 'B' control structure chiller is required to be operating in normal mode prior to the initiation of the test, will load shed during the initiation, and will restart in emergency mode following an appropriate time delay. When the LOOP/LOCA signal was initiated, the 'B' control structure chiller tripped as expected and restarted in emergency mode after the appropriate time delay. Seven minutes after the start of the 'B' control structure chiller, it tripped on low refrigerant

temperature. The 'A' control structure chiller automatically started and remained running in normal mode as expected for this test.

Investigation revealed that there was not a sufficient amount of refrigerant in the 'B' control structure chiller. Refrigerant was added and post maintenance testing on the 'B' control structure chiller was successfully performed on April 13, 2018.

A review of the CAP revealed that previous refrigerant leak checks had noted leaks on the chiller that had not been corrected dating back to December 2016. Repairs had been scheduled for the November 2017 work window which was subsequently cancelled. Inspectors reviewed the 24-month comprehensive flow verification for the 'B' control structure chiller which was performed in February 2018 as well as the engineering evaluation performed under AR-2018-08706 and determined that a reasonable justification existed that the 'B' control structure chiller was operable through at least March 12, 2018, and thus, was not inoperable for longer than the allowed outage time for TS 3.7.4 of 30 days.

Corrective Action: Refrigerant was added to the 'B' control structure chiller under Work Order 2168129 and repairs to fix the known leaks are scheduled for August 2018.

Corrective Action References: CR-2018-05832, CR-2018-08440, CR-2017-17906, CR-2017-07722, CR-2016-28045

Performance Assessment:

Performance Deficiency: Not promptly performing corrective actions for identified leaks associated with the 'B' control structure chiller is a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it adversely affected the Equipment Performance attribute of the Reactor Safety-Mitigating Systems Cornerstone and adversely effected the capability of systems to respond to initiating events to prevent undesirable consequences.

Significance: The inspectors assessed the significance of the finding using IMC 0609, Appendix A. The inspectors determined that this finding was a deficiency that did not represent an actual loss of function of a single train for greater than the TS allowed outage time. Therefore, the inspectors determined the finding to be of very low safety significance (Green).

Cross-Cutting Aspect: This finding has a cross-cutting aspect of Human Performance - Work Management (H.5), since the organization did not implement a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. Specifically, known leaks were identified on the 'B' control structure chiller but were not corrected in a timely manner before the operability of the chiller was challenged.

Enforcement:

Violation: 10 CFR Part 50, Appendix B, Criterion XVI requires measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

Contrary to the above, from December 2016 to present, the licensee had not taken action to repair known refrigerant leaks on the 'B' control structure chiller.

Disposition: This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy.

Inadequate Procedure Adherence to Radiation Protection Requirements			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Occupational Radiation Safety	GREEN NCV 05000387/2018-002-02 Closed	H.8 – Procedure Adherence	71124.01

A Green finding and associated NCV of TS 5.7, "High Radiation Area," was self-revealed when two plant workers entered a posted high radiation area and one worker's electronic dosimeter alarmed on dose rate. The workers had not been briefed for entry into this area.

Description: On the April 18, 2018, night shift, during the Unit 1 refueling and maintenance outage, five contract workers were tasked with demobilizing an area of the plant where replacement of the 'A' recirculation pump had taken place. Part of the area was inside the Unit 1 drywell, a posted high radiation area with dose rates in excess of 100 millirem per hour (100mR/hr) measured 30 centimeters from the source of radiation. The remaining work area was posted as a radiation area, and was located just outside the drywell equipment hatch. All workers were assigned to work under Radiation Work Permit 2018-1324. Three of the workers would be inside the drywell and were briefed for a high radiation area entry, while the other two would be located just outside the drywell equipment hatch, in the reactor building, and therefore not briefed for a high radiation area entry. These two workers were placed on Radiation Work Permit 2018-1324, Task 1, a non-high radiation area task, with set points of 15 millirem accumulated dose and 35 mR/hr dose rate.

At approximately 2200 hours, all five members of the work crew left their work area on a scheduled break. The two workers outside the drywell had previously been instructed to contact the radiation protection staff for assistance in leaving their work area, as it was not located at a normal egress point. Erroneously, these two workers joined their three co-workers by crossing the high radiation boundary and entering the drywell, then traversing the drywell to the drywell egress point. While walking through the drywell, one of the two outside workers received a dose rate alarm when he walked through a 51.6 mR/hr field.

Corrective Actions: The radiation protection staff responded to the dose rate alarm, debriefed the workers, identified the likely location and source of the radiation field that led to the dose rate alarm, and restricted the workers' access to the radiologically controlled area.

Corrective Action Reference: CR-2018-06304

Performance Assessment:

Performance Deficiency: Unit 1 TS 5.7.1.e requires that workers entering a high radiation area are knowledgeable of the dose rates in their work area. The two workers outside the equipment hatch were not briefed for work inside the drywell, a posted high radiation area.

Screening: The finding was determined to be more than minor based on similarity to Example 6.h in IMC 0612, Appendix E, and it is associated with Human Performance attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective to ensure adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation.

Significance: The inspectors assessed the significance of the finding using IMC 0609, Appendix C, "Occupational Radiation Safety SDP," dated August 19, 2008, and determined that the finding was of very low safety significance (Green) because it did not involve: (1) ALARA occupational collective exposure planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose.

Cross-Cutting Aspect: This finding has a cross-cutting aspect of Human Performance - Procedure Adherence, since the individuals did not follow processes, procedures, and work instructions (H.8). Specifically, the workers failed to follow pre-job work instructions for exiting their work area.

Enforcement:

Violation: TS 5.7.1.e requires that entry into a high radiation area be authorized only after radiological conditions in the work area have been determined and personnel are briefed on these conditions.

Contrary to the above, on April 18, 2018, two contract workers entered a high radiation area while signed in on Radiation Work Permit 2018-1324, Task 1 that did not authorize entry to a high radiation area and the workers had not been briefed on the radiological conditions in the high radiation area.

Disposition: This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy.

Inadequate Justification for Deferral of Corrective Actions for certain Degraded Safety-Related Components

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	GREEN Finding NCV 05000387/2018-002-03 Closed	P.3 – Problem Identification and Resolution	71152

The inspectors identified a Green finding and associated NCV of TS 5.4.1, "Procedures," when the licensee failed to promptly correct numerous operable but nonconforming or degraded safety-related components

Description: TS 5.4.1, "Procedures," requires that written procedures be implemented for activities listed in Regulatory Guide (RG) 1.33, "Quality Assurance Program Requirements (Operation)," Appendix A, Revision 2. RG 1.33 requires implementing procedures for the control of maintenance, repair, replacement, and modification work. Susquehanna's implementing procedure NDAP-QA-0703, "Operability Determinations and Functionality Assessments," Sections 5.5 and 5.6 state, in part, that actions to restore operable but nonconforming or operable but degraded conditions are "normally expected at the first available opportunity and within the current operating cycle, unless justified and documented otherwise."

The inspectors identified six examples of nonconforming or degraded safety-related components that Susquehanna had failed to promptly correct or provide adequate justification for their deferral beyond the operating cycle as required by NDAP-QA-0703:

1. Safety-related penetration X-56-1-40 located at the Engineered Safeguards Service Water pumphouse which was identified in August 2012 (CR-1606132) as degraded. Justification to extend beyond the current operating cycle, which ended in May 2018, was based on the assessment that piping needed to be excavated to perform the penetration repairs. No additional justification was provided.

2. Safety-related exhaust plenum concrete missile barrier for 'A', 'B', 'C', and 'D' EDGs was identified in August 2012 (CR-1604923) as having major spalling on the underside of the concrete beam. In 2015 (CR-2015-17837), a structural monitoring program inspection identified that the degradation continued to become more severe. In 2016 (CR-2016-18922), it was determined that the repair method could not be implemented as planned due to the continuous degradation of the concrete. In May 2018, inspectors questioned the justification for not correcting the degraded condition in the past operating cycle. While the station had an active adverse condition monitoring plan and had been performing structural inspections as their plan had required, the condition had not been tracked as an operable but degraded condition and thus justification was not documented for its deferral past the operating cycle (CR-2018-07884). No additional justification was provided.

3. In September 2015, an operable but degraded condition was identified associated with the dynamic qualification of four 480VAC load centers (CR-2015-24182). While the three load centers on Unit 1 were restored to their full dynamic qualification, the load center on Unit 2 was not prior to the end of the Unit 2 refueling outage in March 2017. The justification for not correcting the operable but degraded condition was that the repairs were rescheduled to align with the next divisional outage in 2019.

4. In October 2016, an operable but nonconforming condition was identified when it was discovered that a failure of the non-safety-related reactor core isolation cooling (RCIC) system barometric condenser vacuum pump, vacuum tank, and relief valve would prevent the safety-related RCIC lube oil pump from receiving its design basis cooling water flow and would adversely impact RCIC operation (CR-2016-23615). Corrective actions were developed to replace the non-Q quality relief valve with a Q quality relief valve. The due date assigned to generate the engineering change package has been extended six times from the original due date of November 2017. The justification for extending correcting the condition was that the engineering change has not been completed and the work can be done online. No additional justification was provided.

5. In August 2017, an operable but nonconforming condition was identified associated with the safety-related 'A' control structure chiller in that a non-Q quality blank flange was installed on a Q application (CR-2017-14738). The engineering change was completed in October 2017 but was not implemented. The justification for extending correcting the condition was that the work required a chiller outage and that the work can be done online. No additional justification was provided.

6. In January 2018, an operable but degraded condition was identified associated with an ASME Section III Class 2 piping support for the Unit 1 Loop 'B' RHR system (CR-2018-01164). The justification documented for not completing the repairs prior to the end of the refueling outage in April 2018 was that a design review and revision to the drawings were required to support the necessary work, and that work can be done online. Upon further questioning by the inspectors, the time frame required for the

design work was deemed reasonable based upon structural modifications that need to be completed.

Corrective Actions: CR-2018-07884, CR-2018-08933

Corrective Action References: CR-1606132, CR-1604923, CR-2015-17837, CR-2015-24182, CR-2016-18922, CR-2016-23615, CR-2018-01164

Performance Assessment:

Performance Deficiency: Not promptly performing corrective actions for operable but degraded or operable but nonconforming conditions at the first available opportunity unless justified and documented is a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. This performance deficiency is also similar to IMC 0612, Appendix E, Example 3.j in that significant programmatic deficiencies were identified with the issue that could lead to worse errors if uncorrected. Specifically inspectors identified numerous examples of inadequate justifications for extending corrective actions associated with degraded or nonconforming conditions. The inspectors determined this indicated a programmatic deficiency with how the station justified extending these actions.

Significance: The inspectors assessed the significance of the finding using IMC 0609, Appendix A. Since in all the identified examples Susquehanna was able to justify continued operability of the system, structure, or component, inspectors determined the finding did not represent an actual loss of function of any of these structures, systems, or components and therefore was of very low safety significance (Green).

Cross-Cutting Aspect: The finding has a cross-cutting aspect of Problem Identification and Resolution – Resolution (P.3) in that the organization did not take effective corrective actions to address issues in a timely manner commensurate with their safety significance. Specifically, numerous conditions adverse to quality were not corrected at the first available opportunity without appropriate justification for their extension beyond the refueling cycle.

Enforcement:

Violation: TS 5.4.1, “Procedures,” requires that written procedures be implemented for activities listed in RG 1.33, “Quality Assurance Program Requirements (Operation),” Appendix A, Revision 2. RG 1.33 requires implementing procedures for the control of maintenance, repair, replacement, and modification work. Susquehanna’s implementing procedure NDAP-QA-0703, “Operability Determinations and Functionality Assessments,” Sections 5.5 and 5.6 state, in part, that actions to restore operable but nonconforming or operable but degraded conditions are “normally expected at the first available opportunity and within the current operating cycle, unless justified and documented otherwise.”

Contrary to the above, Susquehanna did not adequately implement procedures as required to restore operable but nonconforming or operable but degraded conditions at the first available opportunity and did not appropriately justify and document their extension beyond the current operating cycle.

Disposition: This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy.

Enforcement Discretion	Enforcement Action (EA)-18-089: EGM on Dispositioning BWR Licensee Noncompliance With TS Containment Requirements During Operations With A Potential For Draining The Reactor Vessel (EGM-11-03)	71153

Description: From April 2 through April 24, 2018, Susquehanna performed OPDRVs without establishing secondary containment integrity. An OPDRV is an activity that could result in the draining or siphoning of the reactor pressure vessel water level below the top of fuel, without crediting the use of mitigating measures to terminate the uncovering of fuel. TS 3.6.4.1, "Secondary Containment," requires that secondary containment be operable, and is applicable during OPDRVs. The required action for this specification if secondary containment is inoperable in this condition of applicability is to initiate actions to suspend OPDRVs immediately. As reported in LER 05000387/2018-001, Susquehanna conducted the following OPDRVs during the period of secondary containment inoperability:

- Recirculation system maintenance and pump replacement;
- Reactor water cleanup system flushes and maintenance;
- RHR system maintenance;
- Hydraulic control unit and control rod drive system maintenance;
- Local power range monitor replacements, including Intermediate Range Monitor 1E Dry Tube replacement;
- Control rod drive mechanism replacements; and
- Core spray instrument line flush.

NRC EGM 11-03, "EGM on Dispositioning BWR Licensee Noncompliance With TS Containment Requirements During Operations With A Potential For Draining The Reactor Vessel," Revision 3, provides, in part, for the exercise of enforcement discretion only if the licensee demonstrates that it has met specific criteria during an OPDRV activity. The inspectors assessed that Susquehanna adequately implemented these criteria.

In accordance with EGM 11-003, in order to continue to receive enforcement discretion, a license amendment request (LAR) must be submitted and accepted for review within 12 months of the NRC staff's publication of the generic change, which occurred on December 20, 2016. The inspectors verified that Susquehanna submitted the required LAR on September 20, 2017 (ADAMS Accession No. ML17265A434), and that it was subsequently accepted by the NRC for review by a letter dated October 16, 2017 (ADAMS Accession No. ML17290A024).

Corrective Action: Susquehanna submitted an LAR to adopt TS Task Force Traveler 542, Reactor Pressure Vessel Water Inventory Control, on September 20, 2017.

Corrective Action Reference: AR-2015-01733

Enforcement:

Violation: TS 3.6.4.1, "Secondary Containment," requires that secondary containment be operable, and is applicable during OPDRVs. The required action for this specification if secondary containment is inoperable in this condition of applicability is to initiate actions to suspend OPDRVs immediately. Therefore, failing to maintain secondary containment operability during OPDRVs without initiating actions to suspend the operation was considered a condition prohibited by TSs as defined by 10 CFR 50.73(a)(2)(i)(B).

Contrary to the above, from April 2 through April 24, 2018, Susquehanna performed OPDRVs without establishing secondary containment integrity.

Basis for Discretion: The NRC is exercising enforcement discretion in accordance with Section 3.5, "Violations Involving Special Circumstances," of the NRC Enforcement Policy because all criteria described in EGM 11-003 were met, enforcement discretion was previously authorized by EA-2017-089, and the licensee submitted an LAR on September 20, 2017 which was subsequently accepted by the NRC for review on October 16, 2017, and, therefore, will not issue enforcement action for this violation.

The disposition of this violation closes LER 05000387/2018-001-00.

Observations	71152 Semi-Annual Trend Review

The inspectors performed a semi-annual review of site issues to identify trends that might indicate the existence of more significant safety concerns. As part of this review, the inspectors included repetitive or closely-related issues documented by Susquehanna in the CAP database, trend reports, site performance indicators, major equipment problem lists, system health reports, maintenance rule assessments, and maintenance or CAP backlogs. The inspectors also reviewed how Susquehanna's CAP evaluated and responded to individual issues identified by the NRC inspectors during routine plant walkdowns and daily condition report reviews.

Rigor of operability determinations. The inspectors noted a trend of conditions adverse to quality for which the basis for operability was inadequate. Station procedure NDAP-QA-0703, "Operability Determinations & Functionality Assessments," Attachment E, "Guidance for Operability Determinations & Functionality Assessments," contains guidance for evaluating operability in some specific situations. The inspectors noted examples of operability determinations that accepted plant structures, systems, or components as operable without considering all guidance offered in the procedure. For example:

- The basis for operability given in condition report CR-2018-01164, which documented a deformed hanger supporting piping for the residual heat removal suppression pool spray system, did not reference NDAP-QA-0703, Attachment E, Section 11, "Piping and Pipe Support Requirements." Section 11 states that specific operability criteria for pipe supports are provided in NRC Inspection and Enforcement Bulletins 79-02 and 79-14. Susquehanna did not appear to use these criteria to determine operability of the pipe hanger.

- Condition report CR-2018-02398 documented that the walls of the 'D' EDG air compressor receivers were found below minimum allowable thickness due to corrosion.

The licensee did not use NDAP-QA-0703, Attachment E, Section 8, "Flaw Evaluation," to evaluate for operability. The licensee ultimately found an alternative method of evaluation, however the inspectors noted this as another example of a failure to use procedural guidance.

The inspectors also noted examples of inadequate justifications for delays in performing corrective actions for conditions adverse to quality. These examples are documented in NCV 05000387/2018-002-03 of this report.

Housekeeping deficiencies in the plant affecting seismic qualification. The inspectors identified a trend of unrestrained items being left in locations where they could adversely impact installed plant equipment. The inspectors noted the following examples:

- On December 3, 2017, licensee staff identified that from December 1, 2017, to December 3, 2017, a 540 pound, ten foot long replacement pipe had been staged on 34 inch high stands within 34 inches of the safety-related Unit 1 'B' core spray room cooler. Based upon engineering review, the room cooler was determined to be inoperable during this timeframe since during a seismic event, the pipe could have reasonably contacted and damaged the flexible conduit for the power cable to the room cooler. The inspectors documented this as a licensee-identified NCV in Inspection Report 05000387;388/2018001, Section 71111.15.

- During a plant walkdown on March 27, 2018, the inspectors identified several items improperly staged in the Unit 1 reactor building in preparation for the refueling outage. Specifically, lead shielding blankets were stacked near sensitive monitoring equipment for the post-accident sampling system, and tool boxes were blocking access to the control rod drive skid. The licensee documented this issue in CR-2018-04587 and moved the blankets and tool boxes to an appropriate storage location.

- On April 4, 2018, licensee staff identified that two unrestrained hand trucks carrying a replacement motor generator set had been left within two inches of the Unit 1 division 1 swing bus switchgear when pre-staged in preparation for the refueling outage. The licensee documented this issue in CR-2018-04998 and moved the hand trucks and their contents to an appropriate storage location. The licensee conducted a past operability review of the condition, and the engineering evaluation determined that the unrestrained equipment was not susceptible to tipping, but was susceptible to sliding. Engineering calculations determined the equipment would have slid less than an inch in a seismic event, and therefore there was no effect on past operability of the swing bus switchgear.

- On May 7, 2018 and May 9, 2018, licensee staff identified that overhead cranes had been parked and left unattended over the Unit 1 RHR hatches, which is clearly marked as a "red zone" area with restrictions on storing transient combustibles. NDAP-QA-0440 states that overhead cranes contain combustible materials and therefore may not be parked and unattended without an approved permit. The licensee documented these occurrences in CR-2018-07606 and CR-2018-07499 and established an hourly fire watch until the cranes could be moved to the proper storage area.

- During a plant walkdown on June 18, 2018, the inspectors identified a ladder upright and leaning against the wall adjacent to the instrument rack that houses the Unit 1 division 2 RCIC turbine rupture disc high pressure switches. The licensee documented this

observation in CR-2018-09496 and moved the ladder to an approved storage rack. A past operability review is in progress.

- During a plant walkdown on June 27, 2018, the inspectors identified a large unrestrained breaker improperly staged in the Unit 1 reactor building near the alternate rod insertion division 2 panel. The licensee documented this observation in CR-2018-09955 and moved the breaker to an appropriate storage location. A past operability review is in progress.

Observations	71152 Follow-up of selected issues
During 2015 and 2016, three Green NCVs were identified involving inadequate controls over high and locked high radiation areas (05000387&388/2015002-02; 05000387&388/2016002-05; 05000387&388/2016002-06). Susquehanna performed apparent cause analyses on the three events under CR-2014-31911, CR-2015-33947, and CR-2016-11944. In all three cases the apparent cause was related back to issues with human performance and individual contributor knowledge. Corrective actions were appropriately taken by Susquehanna to address each of the specific instances that occurred through focused training or standards reinforcement to the involved individuals or groups of individuals. The inspectors reviewed the technical adequacy and depth of evaluations performed by the licensee for these issues. The inspectors also evaluated the licensee's development and implementation of corrective actions in this area.	

EXIT MEETINGS AND DEBRIEFS

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

- On July 26, 2018, the inspectors presented the quarterly resident inspector inspection results to Mr. Timothy Rausch, President and Chief Nuclear Officer, and other members of the Susquehanna staff.

THIRD PARTY REVIEWS

Inspectors reviewed Institute of Nuclear Power Operations reports that were issued during the inspection period.

DOCUMENTS REVIEWED

71111.01

Condition Reports (*initiated in response to inspection)
CR-2018-08720

Drawings
E-1, Unit 1 & 2 Single Line Diagram Station, Sheet 1, Revision 38

Miscellaneous
Certification Letter Template for Summer Readiness, May 18, 2018

71111.04

Procedures
SE-153-400, SBLC System Discharge Line Leakage Quantification Test, Revision 10
SO-153-004, Quarterly SBLC Flow Verification, Revision 45

Condition Reports (*initiated in response to inspection)
CR-2018-04334 CR-2018-06850

Work Orders
2029106

Drawings
M-148, Unit 1 P&ID Standby Liquid Control, Sheet 1, Revision 40

71111.05

Condition Reports (*initiated in response to inspection)
CR-2018-04890 CR-2018-05505 CR-2018-05780 CR-2018-07108

Work Orders
2165948

Miscellaneous
FP-113-119, Circulation Space (I-500) and adjacent rooms (I-511, 517, 514, 508, 513) Fire Zones 1-5A-N,S,W; 1-5H Elevation 749'-1", Revision 6
FP-213-254, Circulation Space (II-500) Fuel Pool Heat Exchanger Room (II-514) Chiller Room (II-512), SBLC System Area (II-513), RPS MG Set Room (II-511), Sample Station (II-508) Fire Zones 2-5A-N, 2-5 A-S, 2-5A-W, 2-5H Elevation 749'1" and 762'-10, Revision 8
FP-113-118, Main Steam Pipeway (I-411) Exhaust Fan Room (I-709), Fire Zone 1-4G, Elevation 719'0" through 816'-1", Revision 7
FP-113-100, Drywell (I-400, I-516, I-607), Fire Zone 1-4F, Elevation 704' through 807', Revision 3
FP-013-155, Control Room (C-409) & Soffits Fire Zones 0-26H, 0-26N, & 0-26P Elevation 729'-1", Revision 7
FP-013-156, TSC and Soffits (C-410, 411, 412, 413, 414, 416) Fire Zones 0-26K, 0-26L, 0-26M, 0-26R, Revision 5

FP-113-112, Equipment Area (I-202, I-204, I-205) Fire zones 1-3C-N,S,W, Elevation 683'-0", Revision 5

71111.07

Procedures
MT-116-002, RHR Heat Exchanger Cleaning, Inspection and Repair, Revision 15
MT-GM-025, Heat Exchanger-Cleaning and Inspection, Revision 22
MT-GM-031, Immersed Component/Heat Exchanger Internals Epoxy Lining/Cladding
MT-GM-078, SSES Heat Exchanger Tube Plugging, Revision 8

Condition Reports (*initiated in response to inspection)
CR-2018-05387 CR-2018-06358

Work Orders
1776759

71111.08

Procedures
NDE-VT-005, Underwater Visual Examination of RPV Internals, Revision 11
NDE-VT-003, Visual Examination VT-3, Revision 12
NDE-VT-001, Visual Examination VT-1, Revision 6
NDE-PT-001, Color Contrast Liquid Penetration Examination, Revision 6
NDE-UT-077, Vendor Originated Procedure GE: Procedure for Encoded Phased Array Ultrasonic Inspection of Small Bore Socket Welds, Revision 1
NDE-UT-027, Vendor Originated Procedure for Manual Ultrasonic Examination of Nozzle Inner Radius Bore and Selected Nozzle Vessel Regions, Revision 8

Condition Reports (*initiated in response to inspection)

CR-2016-28137	CR-2016-28141	CR-2017-01489	CR-2018-05329
CR-2018-05332	CR-2018-05422	CR-2018-05447	CR-2018-05648
CR-2018-05666	CR-2018-05746*	CR-2018-05754*	CR-2018-05758*

NDE Reports
Summary No. 1-B10.30.0001, Penetrant Test of 'A' Recirc Pump Integral Attachment, 1P401A-HW-1, dated April 21, 2018
Summary No. 1-B10.30.0002, Penetrant Test of 'A' Recirc Pump Integral Attachment, 1P401A-HW-2, dated April 21, 2018
Summary No. 1-B10.30.0003, Penetrant Test of 'A' Recirc Pump Integral Attachment, 1P401A-HW-3, dated April 21, 2018
Summary No. 1-B10.30.0004, Penetrant Test of 'A' Recirc Pump Integral Attachment, 1P401A-HW-4, dated April 21, 2018
Summary No. 1-B3.100.0047, Ultrasonic Testing of Nozzle N7 Inner Radius, dated April 20, 2018
Summary No. 1-B3.90.0025, Ultrasonic Examination of N6A, Top Head Nozzle, dated April 20, 2018
Summary No. 1-B3.90.0026, Ultrasonic Examination of N6B, Top Head Nozzle, dated April 20, 2018
Summary No. 1-B3.90.0027, Ultrasonic Examination of N7, Top Head Nozzle, dated April 21, 2018

Work Orders
2000208

Miscellaneous
SSES Fourth Ten-Year Interval Inservice Inspection and Third Ten-Year Interval Containment Inspection (IWE/IWL) Program Plan, dated June 1, 2014

71111.11

Procedures
GO-100-002, Plant Startup, Heatup and Power Operation, Revision 110

Miscellaneous
LOR Training Scenario 402, dated May 1, 2018, Revision 0

71111.12

Procedures
SUS-ISTPLN-100.0, Susquehanna Steam Electric Station Unit 1 Inservice Testing Program, Revision 8
NDAP-QA-0423, Station Pump and Valve Testing Program, Revision 35
NDAP-QA-0017, Motor Operated Valve Program, Revision 17

Condition Reports (*initiated in response to inspection)

CR-2013-03361	CR-2016-05589	CR-2018-04905	CR-2018-05065
CR-2018-05081	CR-2018-05302	CR-2018-05390	CR-2018-05552
CR-2018-05713	CR-2018-05763	CR-2018-05868	CR-2018-06043
CR-2018-06050	CR-2018-06165	CR-2018-06218	CR-2018-06320
CR-2018-06403	CR-2018-06444	CR-2018-06477	CR-2018-06699
CR-2018-07033	CR-2018-08065		

Action Requests

AR-2016-25631	AR-2018-05973

Work Orders

1121863	1121864	1121866	1121868	2168583	2168763

Miscellaneous
ASME OM CODE-2004, IST of Pressure Relief Devices in Light-Water Reactor Nuclear Power Plants
MI1498, Nuclear Engineering Specification for Field Implementation of the Motor Operated Valve Program, Revision 21
PMCR #: ACT-02-CR-2016-05589, July 5, 2016

71111.13

Procedures
SI-283-208, Quarterly Functional Test of Reactor Vessel Water Level (low low) Level 3 CADS Permissive Channels LIS-B21-2N042A&B, Revision 18

Condition Reports (*initiated in response to inspection)

CR-2018-04778	CR-2018-04780	CR-2018-05066	CR-2018-06156
CR-2018-05292	CR-2018-05868		

Action Requests
AR-2018-05973

Work Orders
2163548 2168763

Miscellaneous
Work Order 2168583 Risk Management Summary

71111.15

Procedures
OP-024-001, Diesel Generators, Revision 85
OI-AD-096, Operator Challenges, Revision 22

Condition Reports (*initiated in response to inspection)

CR-105442	CR-2015-5717	CR-2016-05815	CR-2016-19218
CR-2016-24575	CR-2017-07447	CR-2017-12392	CR-2018-05016
CR-2018-05832	CR-2018-06279	CR-2018-06287	CR-2018-06677
CR-2018-06732	CR-2018-06738	CR-2018-07932	CR-2018-08440
CR-2018-08135	CR-2018-08396		

Action Requests
AR-2018-06754

Work Orders

1088935	1598423	1947979	2001011	2024182	2034684
2044353	2062168	2165888	2172234	2172236	

Drawings
M30-204, Common Control Schematics Generator Alarms and Shutdowns Customer Control Contacts for Diesel Generator OC519A, Sheet 3, Revision 13
M30-204, Common Control Schematic Static Excitation Voltage Regulator & Voltage Controls for Diesel Generator OC519A, Sheet 10, Revision 11
M30-204, Common Control Schematic Static Excitation Voltage Regulator & Voltage Controls for Diesel Generator OC519A, Sheet 2, Revision 18
E-103, Unit 1 Schematic Diagram 4.16KV Bus 1A Incoming Feeder Breaker from ESS Trans 201, Sheet 3, Revision 25
E-103, Unit 1 Schematic Diagram 4.16KV Bus 1A Incoming Feeder Breaker from ESS Trans 101, Sheet 1, Revision 31
E-23, Unit 1 Schematic Meter and Relay Diagram 4.16KV System Engineered Safeguard, Sheet 1, Revision 28
E-23, Unit 1&2 Schematic Meter and Relay Diagram 4.16KV Diesel Generator A, Sheet 6, Revision 30

Miscellaneous
EC-059-1012, Evaluation of LOCA Generated Debris Effects on ECCS, Revision 13

EC-PIPE-0740, Determination of Nukon and RBCW Fibrous Insulation Target Locations Relative to Postulated High Energy Line Breaks, Revision 1
EC-059-0515, Effect of Fibrous Insulation LOCA Debris on ECCS Pump, Revision 1
Prompt Investigation Form, CR-2018-09219 “D” Diesel day Tank found below Tech Spec minimum, June 11, 2018
EC-1880508, Replace CVE Synchronous Verifier Relay in 1A201201 Switchgear

71111.18

Condition Reports (*initiated in response to inspection)
CR-2018-06279 CR-2018-06637

Miscellaneous
EC 2169911, Radiation Shielding in Primary Containment Penetrations, Revision 0, April 25, 2018

71111.19

Procedures
MT-GM-050B, Limitorque Type SMB-0 through SMB-4 and SB-3 Operator Maintenance, Revision 7
SO-149-017, RHR Division I Two Year RPI Checks, Revision 0
PSP-29, Post Maintenance Testing Matrix, Revision 24
SO-153-003B, 24 Monthly SBLC Operability (Loop B), Revision 5
SI-164-503, 24 Month Logic System Functional Test of Anticipated Transient without SCRAM-Recirculation Pump Trip System and Alternate Rod Insertion Trip System, Revision 14
SO-100-023, ASME CLASS I Boundary System Leakage Test, Revision 4
SO-149-201, 1035 PSIG Leak Rate Testing of LPCI/LOOP ‘A’ Injection Pressure Isolation Valves, Revision 0
TP-149-080, Initial Start and Run-In of New or Repaired RHR Pump Motor- Unit 1, Revision 6
SO-149-B02, Quarterly RHR System Flow Verification Div II, Revision 30
MT-GM-003A, Swing Check Valve Disassembly, Inspection and Reassembly, Revision 2
SUS-ISTPLN-100.0, Susquehanna Steam Electric Station Unit 1 Inservice Testing Program, Revision 8
NDAP-QA-0425, Check Valve Condition Monitoring Program, Revision 2
TP-159-031, LLRT Troubleshooting of MSIV Penetrations X-7A, B, C and D Using MSL Plugs, Revision 5
SE-159-024, LLRT of MSIV Penetration Number X-7D, Revision 19
SO-054-A03, Quarterly ESW Flow Verification Loop ‘A’, Revision 18

Condition Reports (*initiated in response to inspection)

CR-2018-02232	CR-2018-02233	CR-2018-05082	CR-2018-05211
CR-2018-05541	CR-2018-05607	CR-2018-05684	CR-2018-05690
CR-2018-05700	CR-2018-05744	CR-2018-05858	CR-2018-06015
CR-2018-06101	CR-2018-06371	CR-2018-06451	CR-2018-06759
CR-2018-06935	CR-2018-07189	CR-2018-07237	CR-2018-07248
CR-2018-08232			

Action Requests
AR-2018-05710

Work Orders

1559128	1794152	1856008	1881863	1985808	1986399
1989283	2016059	2019242	2019245	2075139	2086143
2089151	2153426	2157955	2165488	2167547	2167750
2168133	2168387	2169000			

Drawings

93-13815, 6”-300 Weld Ends Flex Wedge Carbon Steel Gate Valve with SMB-00-10 Limitorque Operator, Revision C
M-151, Unit 1 P&ID RHR, Sheet 1, Revision 72
M-1226, MOV Data Detail Drawing for HV151F007A, Sheet 1, Revision 9

Miscellaneous

HV151F015A RTPM 2167754 2018 As Left Round 2, April 27, 2018
HV151F015A, Over-Thrust and/or Over-Torque Evaluation
Calc M-VLV-224, MOV Data Detail, Limit Switch Settings and Torque Switch Setting for HV151F007A
Design Standard No. MDS-01, Sizing, Selection and Determination of Diagnostic Test Acceptance Criteria for Limitorque Actuator on Rising System Valves, Revision 14
ASME ON Code-2004, Subsection ISTC
Unit 1- 20RIO LLRT

71111.20

Condition Reports (*initiated in response to inspection)

CR-2018-05458	CR-2018-06860*	CR-2018-06873	CR-2018-07035
CR-2018-07050*	CR-2018-07051*	CR-2018-07281*	CR-2018-07297

Miscellaneous

LDCN 5355, Unit 1 Cycle 21 COLR Revision 0- Initial Core Loading, Revision 0

71111.22

Procedures

SO-124-217, Unit 1 Division 2 EDG LOCA LOOP Test, Revision 2
SO-153-003B, 24 Monthly SBLC Operability (LOOP B), Revision 5
SO-152-002, Quarterly HPCI Flow Verification, Revision 72
SM-102-C04, 48 Month Channel C 1D630-125 VDC Battery Discharge Modified Performance Test and Battery Charger Capability Test, Revision 27
SI-199-237, 24 Month Functional Test of Excess Flow Check Valve XV142F059G for Reactor Jet Pump Flows (Rack 1C009), Revision 8
SO-100-023, ASME Class I Boundary System Leakage Test, Revision 4
SI-199-238, Functional Test of Excess Flow Check Valves XV143F009C&D and XV143F010C&D for Reactor Recirculation LOOP Flows, Revision 4
SI-199-248, Functional Test of Excess Flow Check Valve XV143F009A for Reactor Recirculation LOOP Flows, Revision 6
SO-104-A02, 24 Month ESS Auxiliary Bus 1A (1A201) 93% Degraded Grid Voltage Timer Reselect Test, Revision 0
SE-159-044, LLRT of RHR Containment Spray Penetration Number X-39A (SCBL), Revision 17
SE-159-047, LLRT of SBLC Penetration Number X-42 and Check Valve Operability Tests, Revision 17

SI-283-208, Quarterly Functional Test of Reactor Vessel Water Level (Low Low) Level 3 (ADS Permissive Channels LIS-B21-2N042A&B, Revision 18

Condition Reports (*initiated in response to inspection)
CR-2018-05295 CR-2018-06872

Work Orders
1676821 1993857 2022406 2025116

Drawings
M-244, Unit 1 Reactor Building Equipment Location Plan of Elevation 749'-1", Sheet 1, Revision 30

Miscellaneous
IEEE Std 450-2010, IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications

71151

Procedures
TI-CH-106, Preparation of Monthly NRC PI- Reactor Coolant Specific Activity, Revision 8
SO-100-06, Drywell Leakage Calculation Worksheet, Revision 111-114
SO-200-006, Drywell Leakage Calculation Worksheet, Revision 83-88

Action Requests

AR-2017-09567	AR-2017-11142	AR-2017-12847	AR-2017-14173
AR-2017-15895	AR-2017-15897	AR-2017-17274	AR-2017-18874
AR-2017-20588	AR-2018-02680	AR-2018-02682	AR-2018-03849

71152

Condition Reports (*initiated in response to inspection)

CR-2016-25721	CR-2017-10852	CR-2017-13888	CR-2017-20227
CR-2018-02398	CR-2018-00102	CR-2018-01164	CR-2018-01328
CR-2018-01533	CR-2018-01870	CR-2018-02120*	CR-2018-02244*
CR-2018-02398	CR-2018-03717	CR-2018-03732	CR-2018-03900
CR-2018-04053	CR-2018-04587*	CR-2018-04641	CR-2018-04901
CR-2018-04911	CR-2018-04998	CR-2018-05137	CR-2018-05303
CR-2018-05312	CR-2018-05321	CR-2018-05434	CR-2018-05754
CR-2018-05820	CR-2018-05857	CR-2018-05893	CR-2018-06475
CR-2018-06776	CR-2018-06860	CR-2018-06907*	CR-2018-07281*
CR-2018-07442	CR-2018-07484	CR-2018-07499	CR-2018-08902
CR-2018-09294*	CR-2018-09496*	CR-2018-09623	

Action Requests
AR-2018-03876 AR-2018-07606 AR-2018-09212