



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE N.E., SUITE 1200
ATLANTA, GEORGIA 30303-1200

November 13, 2018

Michael Yox
Regulatory Affairs Director
Southern Nuclear Operating Company
7835 River Road, Bldg. 140, Vogtle 3 & 4
Waynesboro, GA 30830

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 – NRC
INTEGRATED INSPECTION REPORTS 05200025/2018003,
05200026/2018003

Dear Mr. Yox:

On September 30, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Vogtle Electric Generating Plant, Units 3 and 4. The enclosed inspection report documents the inspection results, which the inspectors discussed on October 12, 2018 with Mr. J. Klecha and other members of his staff.

The inspection examined a sample of construction activities conducted under your Combined License (COL) as it relates to safety and compliance with the Commission's rules and regulations and with the conditions of these documents. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

The NRC inspectors did not identify any finding or violation of more than minor significance.

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 at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

M. Yox

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Should you have any questions concerning this letter, please contact us.

Sincerely,

/RA/

Nicole Covert, Chief (Acting)
Construction Inspection Branch 1
Division of Construction Oversight

Docket Nos.: 5200025, 5200026

License Nos: NPF-91, NPF-92

Enclosure: NRC Inspection Report (IR) 05200025/2018003, 05200026/2018003
w/attachment: Supplemental Information

cc:

Office of the Attorney General
40 Capitol Square, SW
Atlanta, GA 30334

Resident Manager
Oglethorpe Power Corporation
Alvin W. Vogtle Nuclear Plant
7821 River Road
Waynesboro, GA 30830

Southern Nuclear Operating Company, Inc.
Document Control Coordinator Bin N-226-EC
3535 Colonnade Parkway
Birmingham, AL 35243

Anne F. Appleby
Oglethorpe Power Corporation
2100 East Exchange Place
Tucker, GA 30084

County Commissioner
Office of the County Commissioner
Burke County Commission
Waynesboro, GA 30830

Mr. Wayne Guilfoyle
Commissioner District 8
Augusta-Richmond County Commission
4940 Windsor Spring Rd
Hephzibah, GA 30815

Gwendolyn Jackson
Burke County Library
130 Highway 24 South
Waynesboro, GA 30830

Mr. Reece McAlister
Executive Secretary
Georgia Public Service Commission
Atlanta, GA 303

Resident Inspector
Vogtle Plant Units 3 & 4
8805 River Road
Waynesboro, GA 30830

Mr. Barty Simonton
Team Leader
Environmental Radiation Program
Air Protection Branch
Environmental Protection Division
4244 International Parkway, Suite 120
Atlanta, GA 30354-3906

George B. Taylor, Jr.
2100 East Exchange Pl
Atlanta, GA 30084-5336

Brian H. Whitley
3535 Colonnade Parkway, Bin N-226-EC
42 Inverness Center Parkway, BIN B237
Birmingham, AL 35243

Mr. Michael Yox
Site Regulatory Affairs Director
Vogtle Units 3 & 4
7825 River Road, Bin 63031
Waynesboro, GA 30830

Email

acchambe@southernco.com (Amy Chamberlian)
agaughtm@southernco.com (Amy Aughtman)
ALPUGH@southernco.com (Amanda Pugh)
awc@nei.org (Anne W. Cottingham)
becky@georgiawand.org (Becky Rafter)
bhwhitley@southernco.com (Brian Whitley)
Bill.Jacobs@gdsassociates.com (Bill Jacobs)
bjadams@southernco.com (Brad Adams)
bwwaites@southernco.com (Brandon Waites)
castelca@westinghouse.com (Curtis Castell)
comerj@westinghouse.com (James Comer)
crpierce@southernco.com (C.R. Pierce)
dahjones@southernco.com (David Jones)
david.hinds@ge.com (David Hinds)
david.lewis@pillsburylaw.com (David Lewis)
dgbost@southernco.com (Danny Bost)
dlfulton@southernco.com (Dale Fulton)
drculver@southernco.com (Randy Culver)
durhamdc@westinghouse.com (David Durham)
ed.burns@earthlink.net (Ed Burns)
edavis@pegasusgroup.us (Ed David)
erg-xl@cox.net (Eddie R. Grant)
fdhundle@southernco.com (Forrest Hundley)
fhwillis@southernco.com (Fred Willis)
G2NDRMDC@southernco.com (SNC Document Control)
graysw@westinghouse.com (Scott W. Gray)
jadwilli@southernco.com (J.D. Williams)
james1.beard@ge.com (James Beard)
jannina.blanco@pillsburylaw.com (Jannina Blanco)
jantol1dj@westinghouse.com (David Jantosik)
jenmorri@southernco.com (Jennifer Buettner)
JHaswell@southernco.com (Jeremiah Haswell)
jim@ncwarn.org (Jim Warren)
John.Bozga@nrc.gov (John Bozga)
Joseph_Hegner@dom.com (Joseph Hegner)
jpredd@southernco.com (Jason R. Redd)
jranalli@meagpower.org (Jerry Ranalli)
karen.patterson@ttnus.com (Karen Patterson)
karlg@att.net (Karl Gross)
kmstacy@southernco.com (Kara Stacy)
KSutton@morganlewis.com (Kathryn M. Sutton)
kwaugh@impact-net.org (Kenneth O. Waugh)
lchandler@morganlewis.com (Lawrence J. Chandler)
markus.popa@hq.doe.gov (Markus Popa)

Matthew.Williams@hq.doe.gov (Matthew Williams)
mdmeier@southernco.com (Mike Meier)
media@nei.org (Scott Peterson)
Melissa.Smith@Hq.Doe.Gov (Melissa Smith)
Michael.Kuca@hq.doe.gov (Michael Kuca)
mike.price@opc.com (M.W. Price)
MKWASHIN@southernco.com (MKWashington)
mlgraves@southernco.com (Michelle Graves)
MSF@nei.org (Marvin Fertel)
myox@southernco.com (Mike Yox)
nirsnet@nirs.org (Michael Mariotte)
Nuclaw@mindspring.com (Robert Temple)
patriciaL.campbell@ge.com (Patricia L. Campbell)
Paul@beyondnuclear.org (Paul Gunter)
pbessette@morganlewis.com (Paul Bessette)
r.joshi15@comcast.net (Ravi Joshi)
RJB@NEI.org (Russell Bell)
Ronald.Jones@scana.com (Ronald Jones)
rwink@ameren.com (Roger Wink)
sabinski@suddenlink.net (Steve A. Bennett)
sara@cleanenergy.org (Sara Barczak)
sblanton@balch.com (Stanford Blanton)
Shiva.Granmayeh@hq.doe.gov (Shiva Granmayeh)
sjackson@meagpower.org (Steven Jackson)
skauffman@mpr.com (Storm Kauffman)
sroetger@psc.state.ga.us (Steve Roetger)
stephan.moen@ge.com (Stephan Moen)
stephen.burdick@morganlewis.com (Stephen Burdick)
tom.miller@hq.doe.gov (Tom Miller)
TomClements329@cs.com (Tom Clements)
Vanessa.quinn@dhs.gov (Vanessa Quinn)
vcsummer2n3@gmail.com (Brian McIntyre)
wasparkm@southernco.com (Wesley A. Sparkman)
wayne.marquino@gmail.com (Wayne Marquino)
weave1dw@westinghouse.com (Doug Weaver)
x2gabeck@southernco.com (Gary Becker)
x2kmseib@southernco.com (Kristin Seibert)

Letter to Michael Yox from Nicole Coover dated November 13, 2018.

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 – NRC
 INTEGRATED INSPECTION REPORTS 05200025/2018003,
 05200026/2018003

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SIGNATURE	K. McCurry	B. Kemker	D. Harmon	G. Khouri	S. Smith	P. Carman	G. Crespo
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OFFICE	DCO	DCO	DFFI	DCO	DCO		
SIGNATURE	J. Lizardi	/B. Kemker for S. Temple/	/K. McCurry for B. Adkins/	C. Even	N. Coover		
DATE	11/09/2018	11/13/2018	11/13/2018	11/13/2018	11/13/2018		

U.S. NUCLEAR REGULATORY COMMISSION
Region II

Docket Numbers: 5200025
5200026

License Numbers: NPF-91
NPF-92

Report Numbers: 05200025/2018003
05200026/2018003

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Vogtle Unit 3 Combined License
Vogtle Unit 4 Combined License

Location: Waynesboro, GA

Inspection Dates: July 1, 2018 through September 30, 2018

Inspectors: B. Adkins, Senior Fuel Facility Projects Inspector, DFFI
A. Artayet, Senior Construction Inspector, DCO
P. Carman, Project Manager, DCO
G. Crespo, Senior Construction Inspector, DCO
B. Griman, Construction Inspector, DCO
D. Harmon, Construction Inspector, DCO
P. Heher, Construction Inspector, DCO
N. Karlovich, Resident Inspector, DCO
B. Kemker, Senior Resident Inspector, DCO
G. Khouri, Senior Construction Inspector, DCO
J. Lizardi-Barreto, Construction Inspector, DCO
K. McCurry, Fuel Facility Inspector, DFFI
T. Nazario, Senior Test Inspector, DCO
R. Patel, Vendor Inspector, DCIP
S. Smith, Senior Construction Inspector, DCO
S. Temple, Resident Inspector, DCO
D. Terry-Ward, Construction Inspector, DCO
J. Vasquez, Construction Inspector, DCO

Approved by: Nicole Coover, Branch Chief (Acting)
Construction Inspection Branch 1
Division of Construction Oversight

Enclosure

SUMMARY OF FINDINGS

Inspection Report (IR) 05200025/2018003, 05200026/2018003; 07/01/2018 through 09/30/2018; Vogtle Electric Generating Plant Units 3 & 4 integrated inspection report.

This report covers a three month period of inspection by resident and regional inspectors, and announced Inspections, Tests, Analysis, and Acceptance Criteria (ITAAC) inspections by resident and regional. The NRC's program for overseeing the construction of commercial nuclear power reactors is described in Inspection Manual Chapter (IMC) 2506, "Construction Reactor Oversight Process General Guidance and Basis Document," February 20, 2017.

A. NRC-Identified and Self Revealed Findings

None

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Construction Status

During this report period in Unit 3 containment, SPL modules that make up the columns and floor of the operating deck were installed. In addition, pipe and components that make up the passive core cooling system (PXS) and reactor coolant system (RCS) continued to be installed, including the PRHR HX line, pressurizer surge line and the PXS lines that connect the core makeup tank (CMT), accumulator, and the in-containment refueling water storage tank (IRWST) to the reactor vessel. In the shield building, work completed on the reinforced concrete portion of the shield building below 159'6" and the remaining steel composite (SC) transition modules were installed and welded at 146'10". In the auxiliary building, floors at 117'-6" and walls from 117'-6" to 135' were constructed.

In Unit 4 containment, piping work for the PXS and RCS continued to be installed. Rebar that makes up the IRWST floor at 103' was installed in preparation for placing the concrete floor. In the shield building, work continued on the RC and SC portions up to 139'-6". In addition, concrete pours underneath the containment vessel (up to 100') were completed. In the auxiliary building, work continued on floors at 100' and work continued on walls from 100' to 117'-6".

1. CONSTRUCTION REACTOR SAFETY

Cornerstones: Design/Engineering, Procurement/Fabrication, Construction/Installation, Inspection/Testing

Inspection Manual Chapter (IMC) 2503, Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) - Related Work Inspections

1A01 (Unit 3) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.02a (13). The inspectors used the following Nuclear Regulatory Commission (NRC) Inspection Procedures (IPs)/sections to perform this inspection:

- 65001.06-02.01 - General Installation

The inspectors reviewed the pressurizer design specification to verify if the two temporary lifting trunnions bolted to the mid-shell pads were used for rigging and hoisting into the containment vessel to prevent exceeding design loads in accordance with the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC), Section III, Subsections NCA and NB, 1998 Edition including 2000 Addenda.

The inspectors reviewed the pressurizer technical manual to determine if the calculated dry weight, measurement location for the center of gravity and handling precautions were in accordance with the design specification for the upending and vertical lift.

The inspectors reviewed the rigging plan to determine if the capacity of both cranes, use of saddles attached to both lifting trunnions, use of steel cable spreader bar, lubrication of the pivot point trunnions for the upending rotation, and weather condition limitations were in accordance with the technical manual. Finally, the inspectors reviewed the rigging plan to verify soil testing, hydraulic functional testing, and load testing were performed prior to lifting the pressurizer in accordance with the "Step by Step Lift Narrative" that included prerequisite and sequential work step signatures.

b. Findings

No findings were identified.

1A02 (Unit 3) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.02a (13). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.04-02.01 - General Installation

The inspectors reviewed drawings and performed independent measurements of pipe supports in the pressurizer compartment to verify if they were installed in accordance with the ASME Code, Section III, Subsection NF. The inspectors reviewed the following three installed pipe supports:

- variable spring support RCS-PH-11V0101 on surge line spool piece 1,
- constant load support RCS-PH-11C0102 on surge line spool piece 2, and
- snubber RCS-PH-11Y0103 on surge line-spool piece 3.

The inspectors reviewed the isometric construction drawings for the RCS pipe supports located in the containment building pressurizer compartment to verify if the dimensions and tolerances were in accordance with the Westinghouse Electric Company (WEC) fabrication and installation specification. The inspectors performed a walkdown of the containment building pressurizer compartment to verify if the pipe supports installed were of the correct type, were in the correct location, were properly restrained to the pipe and anchorage point, and were properly aligned in accordance with the pipe support installation construction drawings. During the walkdown, the inspectors independently measured the pipe supports to verify the distance between the center of the RCS-PL-L003 pipe to base plate as well as the distance between the center of the pipe support and the overlay plate joint to CA01 structural module wall met the requirements of the design drawings. Finally, the inspectors examined the pipe supports to verify there was no structural damage and there was no oil leakage from the snubber as required by the WEC fabrication and installation specification.

b. Findings

No findings were identified.

1A03 (Unit 3) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.02a (13). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.03-02.03 - Installation and Welding
- 65001.B-02.03-Welder Qualification
- 65001.B-02.05-Inspection
- 65001.B-02.06-Records

The inspectors reviewed quality records associated with manual gas tungsten arc welding (GTAW) on field weld SV3-PXS-PLW-080-5 for line PXS-PL-L130B shown on isometric drawing SV3-PXS-PLW-080 for the automatic depressurization system (ADS) discharge piping to sparger B to determine whether production welding was performed in accordance with the requirements of the qualified welding procedure. The inspectors reviewed the WECTEC weld data sheet to verify quality control (QC) and authorized nuclear inspector (ANI) hold points for visual inspections were signed-off for material identification markings, cleanliness, fit-up, and internal purge/backing gas in accordance with the licensee's procedures. The inspectors reviewed the welder performance qualification records for welders BAP7990, DJK5939, JDC6055, and JJ9039 to verify they were tested and certified in accordance with the requirements of the ASME Code, Section IX.

b. Findings

No findings were identified.

1A04 (Unit 3) ITAAC Number 2.2.01.02a (91) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.02a (91). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.B-02.06-Records
- 65001.F-02.02-Fabrication Records Review

Sump Discharge Containment Isolation Valve - IRC Valve Tag Location SV3-WLS-PL-V055

The inspectors reviewed procurement and fabrication records associated with the material for the Unit 3 sump discharge containment isolation valve to verify the valve qualification testing and fabrication met the requirements of the WEC design specifications and the ASME Code, Section III. The inspectors reviewed material test records for the valve body, valve bonnet, bonnet studs, bonnet nuts, and plug/stem of the 2 x 2-inch Class 150, air-operated plug valve S/N E2267, Valve Tag number (No.) SV3-WLS-PL-V055.

The inspectors reviewed the WEC purchase order for the procurement of the plug valve to verify if the quality assurance requirements were specified in accordance with Nuclear Quality Assurance (NQA)-1-1994, and the technical requirements of the WEC design specifications were in accordance with ASME Code, Section III, Division 1.

The inspectors reviewed the certificates of conformance for the valve parts described above to verify the base materials were in compliance with the ASME Code, Sections II and III. The inspectors also reviewed six certified material test reports (CMTRs) to verify the materials were properly heat treated; met the specified chemical, mechanical, impact, and nondestructive testing requirements of the ASME Code, Section II, Parts A and C.

The inspectors reviewed the pressure boundary welds of valve parts described above to verify the welding was performed in accordance with the ASME Code, Section III. The inspectors reviewed the ASME Code Form NPV-1 report to verify if traceability of materials was maintained, the key dimensions met the design, and the valve components were hydrostatically tested at the appropriate design pressure and temperature in accordance with the ASME Code, Section III, Subsection NC. In addition, the inspectors reviewed the ASME Code Form NPV-1 report to verify the ANI authorized the application of the ASME Code symbol stamp in accordance with the ASME Code, Section III, Subarticle NCA-8000. The inspectors reviewed the hydrostatic test report of the valve assembly and the pneumatic seat test reports to verify the test parameters met the acceptance criteria of the WEC design specifications. The inspectors reviewed the vendor's production test summary report No. TR-037 to verify the test results and acceptability of test data met the requirements of valve design data report and satisfied the requirements of WEC design specifications.

The inspectors reviewed fabrication records for the valve parts described above to verify the required heat treatment, nondestructive examinations (NDE), and additional tests were performed and the sequence of these activities were conducted to meet the requirements of WEC design specifications and the ASME Code, Sections II and III. The inspectors reviewed the heat treatment reports to verify the material met the specified mechanical requirements in accordance with the requirements of the ASME Code, Section II, Part A. For NDE, the inspectors reviewed ultrasonic testing (UT) and dye penetrant testing (PT) reports to verify the records were complete and the exam results met the acceptance criteria of the ASME Code, Section V, Articles 5 and 6, respectively.

The inspector reviewed the vendor's certificate of compliance to verify the valve was designed, fabricated, and tested to meet the WEC design specifications and the ASME Code, Section III, Subsections NC and NCA-4000.

The inspectors reviewed the final quality data package to verify the records were complete, accurate, reviewed and approved by the responsible organizations, and provided evidence the applicable quality assurance and the ASME Code was satisfied.

The inspectors reviewed nonconformance and deviation reports issued during design and fabrication of valve parts to verify the issues were dispositioned with a technical justification in accordance with NQA-1-1994 Basic Requirements 15 and 16.

SV3-PV14-Z0D-105 Reactor Coolant Drainage Tank Gas Outlet Safety Air Operating Valve IRC V067

The inspectors reviewed procurement and fabrication records associated with material for the reactor coolant drainage tank gas outlet containment isolation valve to verify the valve, qualification testing, and fabrication met the requirements of the applicable WEC design specifications and the ASME Code, Section III. The inspectors reviewed material test records for the valve body, valve bonnet, bonnet studs, bonnet nuts, and plug/stem of the 1 HPNS Globe Valve Class 150, air-operated plug valve S/N 19089917, Valve Tag No. SV3-WLS-PL-V067.

The inspectors reviewed Fisher Controls design report No. 11QN09-DR-02 for the valve to verify the valve parts described above were constructed in accordance with the ASME Code, Section III, Subsection NC. Specifically, the inspectors reviewed a purchase order, fabrication records, and pressure boundary welds.

The inspectors reviewed the WEC purchase order for the procurement of the globe valve to verify it specified the quality assurance requirements in accordance with NQA-1-1994 and technical requirements of the WEC design specifications in accordance with the ASME Code, Section III, Division 1.

The inspectors reviewed six CMTRs to verify the base materials were in compliance with the WEC design specifications. The inspectors reviewed the CMTRs to verify the base metal and weld metals chemical and physical properties were in compliance with the WEC design specifications and the ASME Code, Section II, Parts A, B, and C.

The inspectors reviewed the pressure boundary welds of the valve stem assembly to verify the welding was performed in accordance with the ASME Code, Section III. The inspectors reviewed the ASME Code Form NPV-1 report to verify the ANI authorized the application of the Code symbol stamp in accordance with the ASME Code, Section III, Subarticle NCA-8000. The inspectors also reviewed the hydrostatic test report of the valve assembly and the pneumatic seat test reports to verify the test parameters met the acceptance criteria of the WEC design specifications. The inspectors reviewed the valve assembly production test report to verify the operational test met the test acceptance criteria specified in the WEC design specifications.

The inspectors reviewed fabrication records for the valve parts described above to verify the required heat treatment, NDE, and additional tests were performed and the sequence of these activities were conducted to meet the requirements of WEC design

specifications and the ASME Code Sections II and III. The inspectors reviewed six heat treatment reports to verify the material met the specified mechanical requirements in accordance with ASME Code, Section II, Part A. For NDE, the inspectors reviewed UT and PT reports to verify the records were complete and the exam results met the acceptance criteria of the ASME Code, Section V, Articles 5 and 6, respectively.

The inspector reviewed the vendor's certificate of compliance to verify the valve was designed, fabricated and tested to meet the WEC design specifications and Article NC-3500 of the ASME Code, Section III.

The inspectors reviewed the final quality data package to verify the records were complete, accurate, reviewed and approved by responsible organizations, and provided evidence the ASME Code requirements were satisfied.

The inspectors reviewed seven nonconformance and deviation reports issued during design and fabrication of valve parts to verify the issues were dispositioned in accordance with NQA-1-1994 Basic Requirements 15 and 16.

b. Findings

No findings were identified.

1A05 (Unit 3) ITAAC Number 2.2.01.02a (91) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.02a (91). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.B-02.05-Inspection
- 65001.F-02.02-Fabrication Records Review

The inspectors reviewed fabrication records for the fuel transfer tube (FTT) assembly using weld maps to determine whether base and weld materials, examinations, and testing were in accordance with the requirements of the Updated Final Safety Analysis Report (UFSAR), Chapter 3, Table 3.2-3 and the ASME Code Section III, Subsection NE. The inspectors reviewed the WEC ASME Form N-2 code data report to determine it was completed and signed by the ANI in accordance with the ASME Code. The inspectors reviewed nine base metal CMTRs to verify dimensions of the transfer tube, flange, test angle, and hatch with mechanical properties, chemical analysis, and heat treatment were in accordance with the ASME Code provisions and the design specification, APP-FT01-Z0-001, for the FTT. The inspectors reviewed five weld filler metal CMTRs to verify weld filler metal ferrite numbers, mechanical properties, and chemical analysis were as required by the ASME Code Sections III-NE and II-Part C. The inspectors reviewed two NDE reports to determine if welds were signed by the appropriate level of NDE inspector and were found acceptable in accordance with the ASME Code. The inspectors reviewed test reports for pneumatic, hydrostatic, vacuum

box bubble leak, and functional clearance testing to verify contents met the requirements of the design specification, APP-FT01-Z0-001, for the FTT.

b. Findings

No findings were identified.

1A06 (Unit 3) ITAAC Number 2.2.01.08 (109) / Family 08F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.08 (109). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.08-02.02 - In-Process Installation
- 65001.08-02.04 - Inspection of Containment Electrical Penetration Assemblies (EPAs)
- 65001.F-02.04 - General QA Review

The inspectors observed installation of various electrical penetration assemblies at different points in the installation process to verify they were installed in accordance with installation manual SV3-EY01-V0M-100. Specifically, the inspectors performed independent measurements, observed in-process installation activities, observed in-process welding, and observed cable feed-through for electrical penetration assemblies SV3-IDSD-EY-P15Y, SV3-ECS-EY-P18X, SV3-IDSC-EY-P27Z, and SV3-ECS-EY-P25W.

For EPA SV3-IDSD-EY-P15Y (containing cables associated with low voltage power functions), the inspectors observed the installation, including the lift, alignment, and set, to verify the penetration was not bent during installation and the installation crew used chain hoists in accordance with the installation manual.

For EPA SV3-ECS-EY-P18X (containing cables associated with low voltage control), the inspectors observed in-process welding of the penetration sleeve to the canister (field weld SV3-ECS-EY-P18X-4) to verify it was welded in accordance with the installation manual and weld procedure 1.1.8T20, Revision 6. The inspectors observed the use of 250 degree Fahrenheit temperature sticks during welding to verify the interpass temperature of the weld did not rise above 250 degrees per the installation manual. The inspectors observed the filler material, voltage, amperage, and direction of the welding were in accordance with weld procedure 1.1.8T20.

For EPA SV3-IDSC-EY-P27Z (containing cables associated with instrumentation and control), the inspectors observed the installation of feed through cables associated with core exit thermocouples to verify the cables were installed in accordance with the installation manual and the specification data sheet for instrumentation and controls penetrations. The inspectors observed the in-process cable pull for cables IIS-EW-GRP4BZC, IIS-EW-GRP5BZC, and IIS-EW-GRP6BZC to verify the identification and

placement for each cable were in accordance with the specification data sheet. Additionally, the inspectors observed the pull to verify fresh grease was used and the cable bend radius was not exceeded during the pull per the penetration installation manual. The inspectors reviewed the qualifications of the quality control inspector performing the inspection to verify he was qualified in accordance with quality assurance procedures.

For EPA SV3-ECS-EY-P25W (containing cables associated with medium voltage power), the inspectors independently measured the installed cables extending from the installed penetration into containment to verify they were sized in accordance with the specification data sheet and drawings for medium voltage power electrical penetration assemblies. Additionally, the inspectors observed the insulation and cones for the cables to verify they were installed in accordance with specification data sheet and drawings.

b. Findings

No findings were identified.

1A07 (Unit 3) ITAAC Number 2.2.02.02a (120) / Family 07F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.02.02a (120). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.03-02.01 - Purchase and Receipt of Materials
- 65001.03-02.02 - Storage and Handling
- 65001.03-02.03 - Installation and Welding
- 65001.03-02.05 - Pressure Testing
- 65001.03-02.06 - Nondestructive Examination
- 65001.03-02.07 - Review of Records
- 65001.07-02.01 - General Installation
- 65001.07-02.02 - Component Welding
- 65001.B-02.02 - Welding Procedure Qualification
- 65001.B-02.03 - Welder Qualification
- 65001.B-02.06 - Records
- 65001.F-02.02 - Fabrication Records Review

The inspectors conducted an inspection of Module KB-36, which consists of ASME pipe spools and valves in the passive containment cooling system (PCS). The inspectors performed this inspection to verify KB-36 was fabricated in accordance with ASME BPVC, Section III, WEC design and fabrication specifications, and the UFSAR, Chapter 6. Specifically, the inspectors reviewed fabrication and installation records applicable to the following valves and their associated pipe spools and pipelines:

- PCS-PL-V005 (4 inch Manual Operated Gate Valve) installed in pipe spool SV3-PCS-PLW-10J-1A, part of line PCS-PL-L048 (Post-72-hour SFS Makeup From Supply Line Connection)
- PCS-PL-V015 (1 inch Manual Operated Globe Valve) installed in pipe spool SV3-PCS-PLW-10F-1, part of line PCS-PL-L050 (Post-72-hour Containment Cooling Makeup From Supply Line Connections)
- PCS-PL-V039 (4 inch Self-Actuated Check Valve) installed in pipe spool SV3-PCS-PLW-10A-1A, part of line PCS-PL-L051 (Post-72-hour Supply Line Connection)

The inspectors reviewed fabrication records for the valves and pipe spools listed above, including associated pressure boundary welds, to verify the installation was accomplished by qualified personnel and in accordance with approved drawings, qualified procedures, fabrication specifications, and applicable codes and standards. The inspectors reviewed purchase orders and fabrication specifications to verify quality, technical, material, and regulatory requirements were adequately specified in accordance with 10 Code of Federal Regulations (CFR) Part 21 and Part 50 Appendix B, the ASME Code, the UFSAR, and design specifications.

The inspectors reviewed ASME N-5, NPP-1, and NPV-1 code data reports from the fabricators to determine whether the materials specified and hydrostatic tests performed met the requirements of the ASME code and the design specification. In addition, the inspectors reviewed the data reports to determine if they were signed by an authorized representative of the N-stamp holder and an ANI. The inspectors reviewed the results for the hydrostatic shell test, valve closure and seat leakage test, backseat leakage test, packing leakage test, and operational test recorded in the production test report to verify the required minimum test pressures, holding times, leak rates, and number of times cycled met the requirements listed in the design specification for the valve tested.

The inspectors reviewed the applicable code data reports, weld travelers, and vendor and WEC drawings to verify if the records provided adequate traceability to identify the associated components to the welding procedures, welders, NDE reports, and nonconformance reports used during fabrication. Additionally, the inspectors reviewed all the applicable documents to verify valve and piping materials and welding consumables were of the correct specified type and grade and were uniquely identified by a heat number and markings on the material.

The inspectors reviewed CMTRs to verify if materials were properly heat treated and met the specified chemical, mechanical, and NDE requirements of the ASME Code, Sections II and III, the UFSAR, and WEC design documents. The inspectors also reviewed CMTRs to verify no base material repairs were made without approval from the purchaser in accordance with the ASME Code and WEC fabrication specifications.

The inspectors reviewed a sample of welding procedures to verify the processes and all essential variables used were qualified as required by the ASME Code, Sections III and IX. Specifically, the inspectors reviewed the welding procedures to verify if they were written in accordance with a supporting procedure qualification records (PQR) and the ASME Code, Section IX. In addition, the inspectors reviewed the supporting PQRs to verify the ranges of welding variables were qualified and the qualification tests (both type and number of tests) met the acceptance criteria required by the ASME Code.

The inspectors reviewed a sample of welder performance qualification records to determine if the welders were assigned a unique identification number and demonstrated their skill by performing specific performance qualification tests, the qualification testing conditions and qualification limits were fully documented, and the required number of acceptable test results were achieved in accordance with the ASME Code, Section IX, 2007 Edition 2008 Addenda.

The inspectors reviewed reports from visual and liquid penetrant examinations to determine if the welds had been inspected as required by the ASME Code, Section V and found to meet the acceptance criteria of the ASME Code, Section III.

Lastly, the inspectors walked down the module to verify the selected welds did not have any surface defects, the valves were oriented adequately to match their designed flow direction, and the module was stored in accordance with the licensee procedure.

b. Findings

No findings were identified.

1A08 (Unit 3) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.02a (159). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.06-02.01 - General Installation

The inspectors reviewed the core makeup tank B (CMT) design specification to verify if the three vessel lifting lugs located on the top head were used for rigging and hoisting into the containment vessel to prevent exceeding the design loads in accordance with the requirements of the ASME Code, Section III, Subsections NCA and NB.

The inspectors reviewed the CMT B technical manual to determine if the estimated weight and measurement location for the center of gravity were in accordance with the design specification.

The inspectors reviewed the capacity of the crane, use of wire rope slings, and weather conditions in the rigging plan to determine if the rigging plan was in accordance with the technical manual. Finally, the inspectors reviewed the rigging plan to verify load testing was performed prior to lifting the CMT B in accordance with the "Step by Step Lift Narrative" that included prerequisite and sequential work step signatures.

b. Findings

No findings were identified.

1A09 (Unit 3) ITAAC Number 2.2.03.02a (159) / Family 06Fa. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.02a (159). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.03-02.03 - Installation and Welding
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls

The inspectors observed installation activities associated with passive core cooling system in-containment refueling water storage tank injection line PXS-L021B. Specifically, the inspectors observed welding of the line to the direct vessel injection (DVI) line B. The inspectors observed tack and final manual GTAW welding activities for field weld SV3-PXS-PLW-025-1 included in work package SV3-PXS-POW-ME3238 to verify the welding was performed in accordance with the requirements of the ASME Code, Section III, Subsection NB.

The inspectors reviewed the steps of the WDS, including hold point sign-offs by the welder, quality control personnel, and authorized nuclear inspector to verify the sequential steps for activities were in compliance with the ASME Code, Section III, Subsection NB. The inspectors reviewed welding procedure specification (WPS) WPS1-8.8T01 to determine if the essential variables were specified in accordance with the requirements of the ASME Code, Section IX. The inspectors reviewed the weld data sheet included in the work package to verify the welding procedure specification, joint details, traceability of the welder and weld filler material, welding instructions and notes, inspection and NDE procedures, quality control and authorized nuclear inspector hold points, and measuring and test equipment (M&TE) traceability were in accordance with the site welding procedures.

The inspectors observed the intermediate welding passes to verify the interpass temperature, electrical characteristics for amperage, weave and gas techniques, and argon shielding gas requirements were maintained in accordance with the approved welding procedure specification. The inspectors reviewed the welder's performance qualification record to determine if the welder was qualified for the process and weld position in accordance with the ASME Code, Section IX, Article III. The inspectors reviewed weld material requisitions from the rod room and the etchings on the filler metal rods to verify the weld filler material was being properly controlled and traceable to the heat/lot number in accordance with the welding procedure specification. Lastly, the inspectors reviewed the weld filler metal certified material test reports to verify the material properties conformed to the ASME Code, Section II, Part C and were qualified in accordance with the ASME Code, Section III, Subsection NB.

In addition, the inspectors reviewed the NDE results of PT and radiographic testing (RT) for field weld SV3-PXS-PLW-025-1 to verify the records included all the essential

variables and the acceptance criteria were documented in accordance with the qualified NDE procedure. The inspectors reviewed the NDE reports to verify the results were reviewed and accepted by a Level II inspector in accordance with the qualified NDE procedure and requirements of the ASME Code, Section III, Subsection NB. The inspectors reviewed the PT and RT procedures to verify the examination techniques and acceptance criteria were in accordance with the requirements of the ASME Code, Section III, Article NB-5000. The inspectors reviewed the qualification and certification records of both Level II PT and RT inspectors to verify their qualifications were in accordance with the ASME Code, Section III, Subarticle NB-5520, "Personnel Qualification, Certification, and Verification." The inspectors reviewed the certification records of the NDE consumables to verify the sulfur and halogen contents were less than 1% by weight in accordance with the requirements of the ASME Code, Section V, Article 6, Paragraph T-640, and Article 24. Finally, the inspectors reviewed calibration records of the M&TE used for NDE inspection to verify the equipment was controlled and calibrated in accordance with the requirements of 10 CFR 50, Appendix B, Criteria XII.

b. Findings

No findings were identified.

1A10 (Unit 3) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.02a (159). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.06-02.01 - General Installation
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.02 - Installation Records Review

The inspectors observed the installation of the passive residual heat removal (PRHR) heat exchanger (HX) to ensure the installation was in accordance with the requirements of the ASME Code, Section III, Subsections NCA and NB, and NQA-1-1994, Part II, Subpart 2.15 for a Category A item.

Prior to the lift, the inspectors observed the surface of the HX to verify there were no signs of physical damage or deterioration during storage in accordance with NQA-1-1994, Subpart 2.2.

Also, the inspectors reviewed the design specification for the PRHR HX to verify the four lifting lugs on each of the upper and lower parts of the housing structure were used for rigging, rotation, and hoisting into the IRWST to prevent exceeding design loads in accordance with the requirements of the ASME Code Section III, Subsections NCA and NB.

The inspectors reviewed the PRHR HX technical manual to determine if the calculated dead weight, location for the center of gravity, and handling precautions were in accordance with the design specification for the upending rotation and vertical lift.

The inspectors reviewed the rigging plan to verify the lift requirements were in accordance with technical manual. Specifically, the inspectors reviewed the rigging plan to verify the two upper lifting lugs on the lower part of the housing structure and the two lower lifting lugs on the upper part of the housing structure were used in tandem for the upending rotation in accordance with the technical manual. The inspectors also determined if the lead and tail cranes, chain hoists, equalizer blocks, and spreader pipe assemblies were used in accordance with the requirements of the technical manual.

The inspectors observed the lifting, movement, and set of the HX to verify the tubes, support skirt, and attached nozzles, were not bumped or damaged in accordance with the rigging plan. During the lift, the inspectors observed the orientation of the HX to verify it met the handling requirements of the rigging plan. In addition, the inspectors observed the lift to verify the HX was level, and the maximum wind speed and temperature were not exceeded in accordance with the rigging plan. Finally, the inspectors reviewed the signature logs included in the rigging plan to verify hold points were observed, quality inspections were completed, and work sequences were maintained in accordance with NQA-1-1994, Part II, Subpart 2.15.

b. Findings

No findings were identified.

1A11 (Unit 3) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.02a (159). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.B-02.04 - Production Controls
- 65001.B-02.05 - Inspection

The inspectors observed welding and reviewed the associated WDS for field weld SV3-PXS-PLW-042-13 joining 14" diameter stainless steel pipe PXS-PL-L103 to the PRHR HX outlet nozzle to determine whether welding activities were performed in accordance with the requirements of the ASME Code, Section III, Subsection NB, for Class 1 components. Specifically, the inspectors observed manual welding to determine whether interpass cleanliness and use of amperage were in accordance with WPS 1-8.8T01. The inspectors reviewed the WDS to determine whether the weld rod heat numbers and welder identifications were recorded for traceability in compliance with the ASME Code, Section III, Subsection NB. The inspector also reviewed the WDS to determine whether the sequential QC hold point sign-offs for verification of the weld location, fit-up and tack, internal purge/backing gas envelope, and satisfactory results of

the final weld surface NDE visual testing (VT) and PT were performed by QC inspectors in accordance with the licensee's quality assurance program.

In addition, the inspectors reviewed WDS SV3-PXS-PLW-042-13-RW for a weld repair performed on the above weld joint to verify welding and inspections of the thru-wall repair area were in compliance with the ASME Code, Section III, Subsection NB-4450, "Repair of Weld Metal Defects." The inspectors reviewed the weld rod heat numbers and welder identifications to verify if traceability to the WDS were in accordance with the quality assurance program. Finally, the inspectors reviewed the repair WDS to verify the hold point sign-offs for visual inspection of the excavated cavity prior to rewelding, final weld surface NDE VT and PT, and volumetric RT were performed by QC inspectors (including the ANI for review of the RT results) in accordance with the quality assurance program.

b. Findings

No findings were identified.

1A12 (Unit 3) ITAAC Number 2.2.03.08b.02 (176) / Family 06A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08b.02 (176). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.04 - Key Dimensions and Volumes
- 65001.A.02.02 - Installation Records Review

The inspectors observed the in-process survey of the centerline of the PRHR HX upper channel head to verify the survey was performed in accordance with procedure 26139-000-4MP-T81C-N3201, "Construction Survey," Revision 0.

The inspectors reviewed the survey results for the PRHR HX, the survey results for the RCS hot leg, and a design drawing to verify the difference in centerline elevation of the PRHR HX upper channel was greater than or equal to 26.3 feet higher than the centerline of the RCS hot leg. Specifically, the inspectors independently calculated the results of the survey performed to verify the elevation requirement in Section 6.3.6.1.3 of the UFSAR was satisfied, which requires PXS components were installed in accordance with the accident analyses in Chapter 15 of the UFSAR. The inspectors also reviewed the training of the engineer who translated the field survey data into the survey drawing quality record to verify he was qualified in accordance with the training matrix guidance required by the personnel training and qualification procedure. Additionally, the inspectors inspected the survey equipment to verify the date on the calibration sticker was valid in accordance with the construction survey procedure. The inspectors reviewed procedures NCSP03-06 and NCSP03-24 to verify changes made did not lessen the quality requirements imposed by the previous revision of the procedure.

b. Findings

No findings were identified.

1A13 (Unit 3) ITAAC Number 2.2.03.08c.iv.04 (186) / Family 03A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.iv.04 (186). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.04 - Key Dimensions and Volumes
- 65001.A - As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.02 - Installation Records Review

The inspectors observed the in-process survey of the top of the PRHR HX lower channel head and points on the attached PXS pipelines to verify the survey was performed in accordance with survey procedure 26139-000-4MP-T81C-N3201, "Construction Survey," Revision 0. Additionally, the inspectors performed an independent walkdown of the piping to visually verify the pipe going to the steam generator was lower than the PRHR HX lower channel in accordance with the design drawings. The specific line numbers for the piping walked down were PXS-PL-L103, PXS-PL-L104A, PXS-PL-L14B, PXS-PL-L105, and RCS-PL-L113.

The inspectors reviewed the survey results for the piping from the lower channel of the PRHR HX to the steam generator to verify the inside top surface of the piping was lower than the inside top surface of the PRHR HX lower channel in accordance with the accident analysis in the UFSAR, Section 15.2.6.1. Specifically, the inspectors reviewed the field survey results to verify the pipe thickness, cladding thickness, and lower channel head wall thickness taken from reference drawings and standards were properly translated into the survey results from the reference documents. The inspectors independently performed the calculations used in the survey results to verify the PRHR HX lower elevation requirement in Section 15.2.6.1 of the UFSAR was satisfied, which requires the heat exchanger to be located above the core to provide natural circulation flow when the reactor coolant pumps are not operating.

The inspectors also reviewed the training of the engineer who translated the field survey data into the survey drawing quality record to verify he was qualified in accordance with the training matrix guidance required by the licensee's personnel training and qualification procedure.

b. Findings

No findings were identified.

1A14 (Unit 3) ITAAC Number 2.2.03.08c.v.01 (187) / Family 06Aa. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.v.01 (187). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.A - As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors performed an inspection to verify the elevation of the Unit 3 CMT A with respect to the reactor pressure vessel DVI nozzle satisfied the ITAAC requirement. The inspectors reviewed quality records including the Principal Closure Document and as-built drawings to verify the elevation of the bottom inside tank surface was higher than the DVI nozzle centerline by at least 7.5 feet as specified in Table 2.2.3-4 of Appendix C of the Combined License (COL). The inspectors also reviewed the training of the engineer who translated the field survey data into the survey drawing quality record to verify the individual was qualified in accordance with the training matrix guidance required by the licensee's personnel training and qualification procedure.

The inspectors reviewed drawings and survey results to verify key dimensions and elevations listed met the acceptance criteria in Table 2.2.3-4 of Appendix C of the COL. In addition, after its placement inside the containment building at elevation 107'-2", the inspectors performed independent measurements of the centerline of the CMT manway cover to the bottom of the tank's feet to verify the as-built dimensions were consistent with the as-built drawings and key dimensional inputs to the licensee's calculation.

b. Findings

No findings were identified.

1A15 (Unit 3) ITAAC Number 2.6.03.02.i (597) / Family 08Aa. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.6.03.02.i (597). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.08-02.03 - Completed Work
- 65001.F-02.04-General QA Review

The inspectors inspected the following partially installed battery racks in the battery rooms on the 66'6" and 82'6" elevations of the auxiliary building:

- IDSD-DB-1B
- IDSA-DB-1B
- IDSS-DB-1B
- IDSB-DB-2A
- IDSC-DB-1B

The inspectors performed independent measurements of the distance from the racks to the walls to verify the clearance was in accordance with the assembly instructions. The inspectors also measured the welds connecting the racks to the embedment plates on the floor to verify the racks were welded per the embedment plate drawings.

b. Findings

No findings were identified.

1A16 (Unit 3) ITAAC Number 3.3.00.02a.i.a (760) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.a (760). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.05 - Steel Structures
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.B-02.01 - Program and Procedures Review
- 65001.F-02.02 - Fabrication Records Review
- 65001.F-02.03 - Observation of Fabrication Activities

The inspectors performed inspections on structural connections at elevation 107'-0" associated with the steel columns that support the operating floor inside containment at elevation 135'-3". The inspectors observed in-process welding, in-process bolt pre-tensioning tests, and personnel qualification activities. The inspectors reviewed weld records, design drawings, and commercial grade dedication documents.

The inspectors reviewed weld records and observed in-process welding associated with weld Nos. FW-069 and FW-071 on the steel columns for the operating floor inside containment located at elevation 118'-4". The inspectors reviewed WPSs, weld maps, design drawings, design specifications, and weld data sheets to determine if welding parameters were in conformance with clause 3 of American Welding Society (AWS) D1.1 2000. The inspectors observed in-process welding activities to verify whether interpass temperature, weld position, amperes, volts, and filler metal requirements specified on WPS2-1.1 1S01 were in accordance with procedure 26139-000-4MP-T040-S0021 and clause 3 of AWS D1.1 2000.

The inspectors reviewed documents and observed pre-installation inspections associated with material verification of fastener assemblies to verify whether the type and material characteristics of the connection components were in accordance with

procedure NCSP 03-40, AISC-N690-1994, and Section 3.8.4.6 of the UFSAR. Specifically, the inspectors reviewed design specifications, design and as-built drawings, procedures, and personnel qualification to verify the installation activities were performed in accordance with Section 4.6.2.5 of specification APP-SS01-Z0-001.

The inspectors reviewed pre-installation qualification records associated with American Society for Testing and Materials (ASTM) A325 and A490 bolts to verify the testing process met 70 percent of the specified minimum tensile strength as described in Section 8.1 of the Research Council on Structural Connections. In addition, the inspectors observed a pre-installation qualification test of ASTM A490 bolts using the turn-of-the-nut method and observed qualification activities for personnel performing bolt installation to verify whether the bolt pre-tensioning test was performed in accordance to Section 6.7.7 of NCSP 03-40 and specification APP-SS01-Z0-001.

The inspectors reviewed the CMTR for SPL-18, Sequence III bolting materials. Specifically, the inspectors reviewed the CMTRs to verify the materials used for the fabrication of A325 bolts, A490 bolts, F436 washers, F959 Direct Tension Indicator (DTI) washers, and A563 nuts met the physical and chemical properties required by the ASTM.

b. Findings

No findings were identified.

1A17 (Unit 3) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.b (761). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.05 - Steel Structures
- 65001.01-02.06 - Records
- 65001.F-02.03 - Observation of Fabrication Activities

The inspectors observed on-going construction activities associated with the Unit 3 shield building reinforced concrete (RC)/ steel composite (SC) horizontal connection located approximately between azimuths 62 and 85 degrees at elevation 146'-10". The inspectors observed the installation of the steel transition horizontal module to the reinforced concrete wall of the shield building and reviewed licensee records including design drawings, specifications, and quality control inspection reports.

The inspectors observed the installations of RC/SC horizontal transition modules 01C and 01D to verify they were performed in accordance with Appendix 3H of the UFSAR. The inspectors observed construction personnel cleaning and inspecting threads on the vertical reinforcement to verify they were free of any damage, foreign material, and rust in conformance with Section 8.3 of specification APP-CR01-Z0-010. The inspectors

observed the installation of the ASTM A563 Grade DH heavy hex nuts and ASTM F436 flat washers onto the No. 11 vertical reinforcement bars installed through the RC/SC support plates to verify they were installed according to design drawings and specification APP-CR01-Z0-010.

The inspectors interviewed quality control personnel and reviewed inspection records associated with the installation of RC/SC modules to verify whether activities affecting quality were verified using appropriate methods and examinations in accordance with ASME NQA-1-1994, Basic Requirement 10. Specifically, the inspectors reviewed procurement documents and the storage requisition report to verify the nuts and washers were made of the required material in accordance with Section 10 of the Bechtel Project Quality Assurance Manual (PNQAM). The inspectors reviewed the structural steel inspection record to verify it was current, accurate, properly completed, and specified an acceptance criteria in accordance with Section 10 of the PNQAM. The inspectors also reviewed the verification of installation record to verify proper installation sequences were followed in accordance with Section 10 of the PNQAM.

b. Findings

No findings were identified.

1A18 (Unit 3) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.b (761). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.A - As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.02 - Installation Records Review

The inspectors reviewed records, observed testing activities, and performed independent evaluations for the concrete associated with the shield building cylinder from elevation 139'-4" to 149'-2" and approximately between azimuths 73.61 degrees to 180 degrees, including the RC/SC connection at elevation 146'-10". The inspectors performed a record review of the concrete placement and reviewed inspection records, personnel qualifications, and design deviations. Specifically, the inspectors compared the concrete batch tickets against pour card No. 4133 to verify the concrete mix satisfied the design specifications. The inspectors also reviewed the concrete testing records delivered to the intended location to verify they met the strength, slump, air content, mix temperature, and density as required by specification SV3-CC01-Z0-026.

The inspectors reviewed quality control inspection records associated with pre-placement activities to verify whether installed steel reinforcement was clean and free of concrete or grease; rebar was the proper size and had the correct spacing; splices had the proper length; and reinforcement had the proper configuration as required by

specification SV3-CC01-Z0-031 and American Concrete Institute (ACI) 349-01. The inspectors reviewed the inspection records to verify whether the concrete placement area was free of debris and foreign materials and the formwork was the correct type; had the correct form release agent applied; and was properly installed without interfering with embedded items in accordance with specification SV3-CC01-Z0-031.

The inspectors reviewed records associated with concrete placement inspections to verify whether quality control inspections were performed during the placement in accordance with Section 4.5 of SV3-CC01-Z0-031. The inspectors reviewed inspection report 26139-SV3-IR-C0-00100 to verify the following requirements were inspected by the licensee in accordance with SV3-CC01-Z0-031 and ACI 349-01:

- the proper concrete mix was received;
- free drop distance for concrete placement was not exceeded;
- concrete was placed in layers that did not exceed the 18-inch project requirement;
- vibrating equipment was used with the proper insertion to the previous placed layer to consolidate the mix;
- concrete was tested at the required frequency and the results recorded;
- batch tickets were accounted for and recorded; and
- the concrete placement card was reviewed for completeness and acceptance of field test results.

The inspectors reviewed inspection qualification records to verify if quality control inspectors had been adequately trained and certified for the inspection of concrete placement activities in accordance with NQA1-1994, Subpart 2.5 and the Bechtel Project Nuclear Quality Control Manual (PNQCM). The inspectors also reviewed nonconformance and condition reports associated with the concrete placement to verify whether nonconformances were documented, evaluated, and dispositioned in accordance with procedure APP-GW-GAP-428.

The inspectors observed the 28-day compressive strength testing of six cylindrical concrete specimens to verify the test method used was in accordance with NQA-1-1994, ASTM C39/C39M, and specification SV3-CC01-Z0-027 section 6.1.12, "Concrete Testing during Placement." Additionally, during the testing activities, the inspectors observed the tests to verify they were within the allowable time frame, and were done using an appropriate test machine in accordance with ASTM C39/C39M.

The inspectors checked the testing machine to verify the type, capacity, load indication displays, and allowable accuracy was in accordance with ASTM C39/C39M. The inspectors reviewed the calibration record for the test machine to verify the load capacity, rate, and accuracy were confirmed by the licensee within the time allowed by ASTM C39/C39M. The inspectors observed the technician confirm the bearing blocks and spacers used for testing to verify they were of the correct material, shape, size, and dimensions for the concrete cylinders being tested in accordance with ASTM C39/C39M. The inspectors also independently verified the attributes of the bearing blocks and spacers used for testing. The inspectors reviewed the calibration record for the bearing blocks and spacers to verify material, shape, size, and dimensions were demonstrated by the licensee within the time allowed by ASTM C39/C39M.

The inspectors observed the technician prepare the bearing blocks, spacers, specimens, and test machine prior to running each test to verify the tests were set up in accordance with ASTM C39/C39M. The inspectors observed the test machine setup, including installation of the bearing blocks, spacers, and specimens to verify the machine was prepared and set up in accordance with ASTM C39/C39M. The inspectors independently checked and observed the technician confirm the axial alignment of the cylinders before and during axial loading to verify the load was applied in the manner required by ASTM C39/C39M.

The inspectors observed the application of the compressive axial load to the cylinder specimens to verify the tests were performed in accordance with ASTM C39/C39M and specification SV3-CC01-Z0-027 section 6.1.12. The inspectors observed the rate of loading and continuous application of load to verify the load was applied in the method specified in ASTM C39/C39M. The inspectors observed and independently assessed the fracture pattern type of each cylinder after removal from the test machine to verify the technician correctly identified and documented them on the test reports in accordance with ASTM C39/C39M.

The inspectors observed the curing conditions; reviewed the curing area logs; and observed the storage conditions for the cylinders prior to testing to verify they were kept within the temperature and moisture conditions specified in ASTM C39/C39M, ASTM C31/C31M, and SV3-CC01-Z0-027 section 6.1.12. The inspectors observed the technician verify and record the dimensions and perpendicularity of the test specimens to verify these properties were determined using the method described in ASTM C39/C39M. The inspectors independently calculated the cross-sectional area of the cylinder specimens to verify the areas recorded by the technician were in accordance with ASTM C39/C39M.

The inspectors reviewed the test reports and associated concrete batch tickets for the concrete cylinder strength testing observed to verify the records were complete, accurate, and contained the required information in accordance with NQA-1-1994, ASTM C39/C39M, and specification SV3-CC01-Z0-027 section 6.1.12. Additionally, the inspectors reviewed the test results to verify they met the strength requirements for the specified concrete mix in accordance with specification SV3-CC01-Z0-026 section 4.2.10, "Concrete Mix Design."

b. Findings

No findings were identified.

1A19 (Unit 3) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.b (761). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.05 - Steel Structures

- 65001.B-02.02 - Welding Procedure Qualification
- 65001.B-02.03 - Welder Qualification
- 65001.B-02.04 - Production Controls
- 65001.B-02.05 - Inspection

The inspectors reviewed documents for two vertical seam welds on the east side of the shield building for the horizontal transition modules at the 146'-10" elevation to verify compliance with the requirements of the AWS D1.1-2000 code and WEC specification APP-1208-Z0-001 for fracture toughness. The inspectors reviewed weld travelers for joining the 1A to 1B and 1C to 1D panels to verify hold points were signed-off by QC for fit-up and tack welding, magnetic particle testing (MT) of temporary attachment removal areas, and final weld seam VT and 10% spot volumetric UT. The inspectors reviewed two WPSs for impact testing and fifteen welder certification records for six welders to verify testing was performed in accordance with the requirements of ASME Section IX for use of the shielded metal arc welding (SMAW) and flux-cored arc welding (FCAW) processes. The inspectors reviewed CMTRs for the following three weld filler materials to verify chemical analysis and mechanical properties with impact testing were performed in accordance with the requirements of the AWS material specifications:

- SMAW E8018-C1 H4R (lot-no. 1332R) of A5.5,
- FCAW E71T-1M/-9M (lot-no. 1186B) of A5.20, and
- FCAW E71T-1M-J (lot-no. 1329B) of A5.20.

The inspectors reviewed three MT reports for inside/outside surface inspections of temporary attachment and backup bar removal areas for both vertical seam welds to verify inspections were performed in accordance with the requirements of AWS D1.1-2000, Section 6, "Inspection." The inspectors reviewed four UT reports for inside/outside 10% spot volumetric inspections of both vertical seam welds to verify inspections were performed in accordance with the requirements of AWS D1.1-2000, Section 6.

The inspectors reviewed N&D SV3-1208-GNR-000099 and engineering and design coordination reports (E&DCR) E&DCR-1208-GEF-211 to verify rework of interfering rebar and backup bar to facilitate weld joint alignment of the 01C/01D panels within acceptable limits were appropriately evaluated, approved, and dispositioned in accordance with applicable technical and quality assurance requirements. The inspectors reviewed an associated weld traveler to verify hold points were signed-off by QC for mapping rework locations and welding of tie bar splices with VT and MT inspections of completed welds. The inspectors reviewed an MT report for a 10% spot surface MT of the final weld on a 01C/01D tie bar splice plate to verify inspection was performed in accordance with AWS D1.1-2000, Section 6.

b. Findings

No findings were identified.

1A20 (Unit 3) ITAAC Number 3.3.00.02a.i.b (761) / Family 01Fa. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.b (761). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.06 - Records
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.04 - Review As-built Deviations/Nonconformance
- 65001.B-02.05 - Inspection
- 65001.F-02.03 - Observation of Fabrication Activities

The inspectors performed inspection activities associated with the assembly of shield building panels located at EL. 149' 6" between azimuths 62.5 and 152.5. The inspectors observed in-process welding of vertical and horizontal seams, reviewed design drawings and documentation associated with welding activities, and reviewed welder qualifications.

The inspectors performed inspection of construction activities associated with vertical seam welds between panels 07A and 07B and panels 07B and 07C, and the horizontal seam weld between panels 07C/07D and 01D/01E. The inspectors observed weld-joint preparation and fit-up of vertical and horizontal welds to determine if the configuration was in conformance with approved as-built design drawings and Clause 4, "Qualification," of AWS D1.1 2000.

The inspectors reviewed the following to determine if the documents and applicable essential variables were in accordance with the requirements of Clause 4 of AWS D1.1 2000:

- PQRs,
- material distribution logs,
- traveler documents,
- SMAW and FCAW processes,
- welding position,
- type of base metal,
- type of filler metal, and
- process parameters such as amperage, current, voltage, and travel speed.

The inspectors observed in-process welding of vertical and horizontal seams to ensure the welds complied with the requirements established in the WPS. Specifically, the inspectors observed in-process welding of one vertical seam, 07A and 07B, and two horizontal seams to verify work was performed in accordance with WPS 181816-000-WS-SP-E71T1. The inspectors also sampled four welder qualification records to verify the welders were qualified for the welding processes used to assemble the shield building panels in accordance with the general welding procedures and Clause 4 of AWS D1.1 2000.

The inspectors reviewed NDE records of welds on the vertical seam joining panels 07A-07B, welds on the circumferential horizontal seam between panels 07C and transition panels 01C/01D, and the weld on the horizontal seam between panels 07D and transition panels 01D/01E. Specifically, the inspectors reviewed traveler documents and UT reports to determine if welds were performed in accordance with procedure 181816-000-WS-PR-45054 and Clause 6, "Inspection," of AWS D1.1 2000.

The inspectors sampled seven E&DCRs to verify the licensee was controlling design changes associated with the joint configuration of shield building panel welds in accordance with NQA1-1994, Basic Requirement 3 and Supplement 3S-1.

b. Findings

No findings were identified.

1A21 (Unit 3) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.c (762). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.A - As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.03 - Independent Assessment/Measurement Inspection
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

The inspectors performed inspection of construction activities associated with the main control room floor located between column lines 9.2 to 11 and column lines I to L at elevation 117'-6" in the auxiliary building. The inspectors observed ongoing reinforcement installation activities and reviewed licensee records including design specifications, design drawings, and E&DCRs.

The inspectors performed independent measurements of steel reinforcement bars in the floor to verify they were installed in accordance with ACI 349-01. Specifically, the inspectors conducted in-field measurements of installed top and bottom layers of reinforcing steel to verify they met size and spacing requirements; had minimum concrete clear cover; lap splices met the minimum length; and the floor had the required thickness in accordance with design drawings.

The inspectors observed reinforcement installation activities to verify they were performed using the latest approved design changes, design drawings, and quality control procedures in accordance with NQA-1 1994, Basic Requirements 3 and 5.

The inspectors reviewed quality records and observed concrete placement activities associated with the main control room floor. Specifically, the inspectors reviewed concrete pour card No. 4246 to determine whether concrete mix design requirements were properly translated into quality assurance documents in accordance with design specification SV3-CC01-Z0-026. During placement, the inspectors also compared the pour card to the batch tickets to verify concrete delivered to the site had the appropriate concrete mix type. The inspectors reviewed the batch tickets during concrete placement to verify transport time was completed within the time allowed by ACI 349-01 and the delivery was intended for the proper location in accordance with the pour card. The inspectors observed concrete placement activities to determine whether placement drop distances met requirements specified in section 4.2.4 of specification SV3-CC01-Z0-031. The inspectors also observed the use of concrete vibrators to verify they were handled and operated to ensure adequate consolidation of the mix in accordance with section 4.2.9 of specification SV3-CC01-Z0-031.

The inspectors reviewed calculation CALC-VMD-026 associated with the laboratory mix trials for safety related, self-consolidating concrete mixes. The inspectors reviewed the calculations to verify the self-consolidated concrete mixes were able to reach the minimum bulk dry density requirement of 140 pounds per cubic feet as described in Section 12.3.2.2 of the UFSAR.

b. Findings

No findings were identified.

1A22 (Unit 3) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.c (762). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.02 - Laboratory Testing
- 65001.02-02.06 - Record Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors observed testing activities, performed independent evaluations, and reviewed records for the concrete associated with the auxiliary building at column line 11 from column line L to Q from elevation 117'-6" to 135'-3", including the north walls of both main steam isolation valve compartments. The inspectors observed the 28-day compressive strength testing of six cylindrical concrete specimens to verify the test method used was in accordance with ASTM C39/C39M, and specification SV3-CC01-Z0-027 section 6.1.12, "Concrete Testing during Placement." Additionally, the inspectors observed the testing activities to verify they were performed by a qualified concrete laboratory test technician; were within the allowable time frame; and were done using an appropriate test machine in accordance with ASTM C39/C39M.

The inspectors independently inspected the testing machine to verify the type, capacity, load indication displays, and accuracy were in accordance with ASTM C39/C39M. The inspectors reviewed the calibration record for the test machine to verify the load capacity, rate, and accuracy were confirmed by the licensee within the time allowed by ASTM C39/C39M. The inspectors independently observed the technician confirm the bearing blocks and spacers used for testing to verify they were of the correct material, shape, size, and dimensions for the concrete cylinders being tested in accordance with ASTM C39/C39M. The inspectors reviewed the calibration record for the bearing blocks and spacers to verify material, shape, size, and dimensions were demonstrated by the licensee within the time allowed by ASTM C39/C39M.

The inspectors observed the curing conditions; reviewed the curing area logs; and observed the storage conditions for the cylinders to verify they were kept within the temperature and moisture conditions specified in ASTM C39/C39M, ASTM C31/C31M, and SV3-CC01-Z0-027, Section 6.1.12. The inspectors observed the technician verify and record the dimensions and perpendicularity of the test specimens to verify these properties were determined using the method described in ASTM C39/C39M. The inspectors independently calculated the cross-sectional area of the cylinder specimens to verify the areas were in accordance with ASTM C39/C39M.

The inspectors observed the technician prepare the bearing blocks, spacers, specimens, and test machine prior to running each test to verify the tests were set up correctly in accordance with ASTM C39/C39M. The inspectors observed the test machine setup, including installation of the bearing blocks, spacers, and specimens to verify the machine was prepared and set up in accordance with ASTM C39/C39M. The inspectors independently checked and observed the technician confirm the axial alignment of the cylinders before and during axial loading to verify the load was applied in the manner required by ASTM C39/C39M.

The inspectors observed the application of the compressive axial load to the cylinder specimens to verify the tests were performed in accordance with ASTM C39/C39M and specification SV3-CC01-Z0-027, Section 6.1.12. The inspectors observed load testing to verify the load was applied in the method specified in ASTM C39/C39M. The inspectors observed and independently assessed the fracture pattern type of each cylinder after removal from the test machine to verify the technician identified and documented them on the test reports in accordance with ASTM C39/C39M.

The inspectors reviewed the certification record for the technician performing the tests to verify the technician was qualified in accordance with ASTM C39/C39M.

The inspectors reviewed the three test reports and two associated concrete batch tickets for the concrete cylinder strength testing to verify the records were complete, accurate, and contained the required information in accordance with ASTM C39/C39M, and specification SV3-CC01-Z0-027, Section 6.1.12. Additionally, the inspectors reviewed the test results to verify they met the strength requirements for the specified concrete mix in accordance with specification SV3-CC01-Z0-026, Section 4.2.10, "Concrete Mix Design."

b. Findings

No findings were identified.

1A23 (Unit 3) ITAAC Number 3.3.00.02a.i.d (763) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.d (763). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

The inspectors performed inspection of construction activities associated with column line 1 wall from J-2 to N from elevation 117'-6" to 127'-0" in the auxiliary building. The inspectors observed ongoing reinforcement installation, observed ongoing concrete placement activities, and reviewed licensee records including design drawings, specifications, E&DCRs, and N&Ds.

The inspectors performed independent measurements of installed reinforcement and embed plates. Specifically, the inspectors measured installed reinforcing steel to verify it met size and spacing requirements; met minimum concrete clear cover; and lap splices met the minimum length in accordance with ACI 349-01. Also, the inspectors measured reinforcement around mechanical penetrations to verify the configuration was in accordance with the latest approved design drawings. The inspectors independently measured reinforcement spacing in congested areas to verify whether reduced spacing between steel reinforcement met the requirements specified in Section 3.3.2 of ACI 349-01. The inspectors also performed measurements of embedments to verify they were located properly in the structure, secured, and free of concrete or excessive rust and had the proper clearances in accordance with drawing SV3-0000-C9-002A.

The inspectors observed reinforcement installation activities to verify they were performed using the current approved design changes, design drawings, and design specifications in accordance with NQA-1 1994, Basic Requirement 3. The inspectors also reviewed three non-conformance reports and four disposition reports to verify nonconforming items were dispositioned in accordance with section 4.6.4 of procedure APP-GW-GAP-428.

The inspectors reviewed quality records and observed concrete placement activities. Specifically, the inspectors reviewed concrete pour card No. 4199 to determine whether concrete mix design requirements were translated into quality assurance documents in accordance with design specification SV3-CC01-Z0-026. During concrete placement, the inspectors compared the pour card to the batch tickets to verify concrete delivered to the site had the appropriate concrete mix type. In addition, the inspectors evaluated whether transport time was completed within the time allowed by ACI 349-01 and the delivery was intended for the location in accordance with the pour card. The inspectors

observed concrete placement activities to determine whether placement drop distances met requirements specified in Section 4.2.4 of specification SV3-CC01-Z0-031. The inspectors also observed the use of concrete vibrators to verify they were handled and operated to aid adequate consolidation of the mix, including vertical operation and penetration into the previous placed concrete layer, in accordance with Section 4.2.9 of specification SV3-CC01-Z0-031.

During concrete placement, the inspectors observed in-process concrete testing to determine if concrete temperature, slump, and air content were determined at the mix delivery location as required by specification SV3-CC01-Z0-026 and ACI 349-01. The inspectors also observed the in-process testing to verify the methods used for testing were in accordance with specification SV3-CC01-Z0-027 and required ASTM standards for verifying applicable concrete properties. The inspectors observed the sampling of 24 concrete strength test cylinders to verify whether sample collection was performed in accordance with specification SV3-CC01-Z0-027 and ASTM C172.

b. Findings

No findings were identified.

1A24 (Unit 3) ITAAC Number 3.3.00.02a.i.d (763) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.d (763). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.A.02.01 - Observation of in-Process Installation Activities

The inspectors performed inspection of construction activities associated with the floor from column line I to J-2 and 4 to intersecting vertical wall before column line 5 (column line 4.8) at elevation 107'-2" in the radiologically controlled area of the auxiliary building. The inspectors observed ongoing reinforcement installation activities, reviewed licensee records including design drawings, design specifications, and E&DCRs.

The inspectors performed independent measurements of the floor reinforcement to verify it was installed in accordance with ACI 349-01. Specifically, the inspectors performed independent measurements of installed reinforcing steel to verify it was met size and spacing requirements; had minimum concrete clear cover; lap splices met the minimum length; and reinforcement around mechanical penetrations was installed in accordance with the design drawings. The inspectors also observed reinforcement installation activities to verify they were performed using the latest-approved design changes, design drawings and design specifications in accordance with NQA-1 1994, Basic Requirement 3.

The inspectors sampled seven E&DCRs to verify design changes were processed and translated into design drawings in accordance with procedure APP-GW-GAP-420.

b. Findings

No findings were identified.

1A25 (Unit 3) ITAAC Number 3.3.00.02a.i.d (763) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.d (763). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.A.02.01 - Observation of in-Process Installation Activities

The inspectors performed inspection of construction activities associated with wall 4 located between column lines I and J-1 from elevation 117'-6" to 135'-3" in the radiation area of the auxiliary building. The inspectors observed ongoing reinforcement installation, performed independent measurements, and reviewed licensee records including design drawings, specifications, E&DCRs, and non-conformance reports.

The inspectors performed independent measurements of installed reinforcement and embed plates. Specifically, the inspectors measured installed reinforcing steel to verify it met size and spacing requirements; met minimum concrete clear cover; and lap splices met the minimum length in accordance with ACI 349-01. Also, the inspectors measured reinforcement around mechanical penetrations to verify the configuration was in accordance with the latest approved design drawings. The inspectors independently measured reinforcement spacing in congested areas to verify whether reduced spacing between steel reinforcement met the requirements specified in Section 3.3.2 of ACI 349-01.

The inspectors also performed measurements of embedments to verify they were located in the structure in accordance with design drawings. The inspectors performed walkdowns to verify the embedments were secured, free of concrete or excessive rust, and had the appropriate clearances in accordance with General Notes drawing SV3-0000-C9-002A. The inspectors observed reinforcement installation activities to verify they were performed using the latest-approved design changes, design drawings, and design specifications in accordance with NQA-1 1994, Basic Requirements 3 and 5. The inspectors reviewed two nonconformance reports and one E&DCR in order to verify whether design deviations were dispositioned in accordance with NQA-1-1994, Basic Requirement 3, and Supplement 3S-1.

b. Findings

No findings were identified.

1A26 (Unit 3) ITAAC Number 3.3.00.14 (820) / Family 17E

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.14 (820). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.17-02.07 - Bullet Resisting Physical Barriers

This input is security related. See non-public report 05200025/2018412 for details.

b. Findings

No findings were identified.

1A27 (Unit 4) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.02a (13). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.03-02.06 - Nondestructive Examination

The inspectors observed in-process field activities and performed an independent assessment of the PT examinations on the weld preparation machined surface of the cold leg (L002A) to the reactor vessel inlet nozzle. The inspectors observed in-process field activities and performed an independent assessment of the PT examinations on the other Unit 4 RCS cold leg (L002B) to the east steam generator, for field weld SV4-RCS-PL01-FW-BCL05. The inspectors observed the examinations performed in the field by PCI inspectors to determine if the requirements of procedure GQP 9.7 were adhered to, including surface temperature of the weld, type of penetrant, solvent and developer used, and penetrant dwell time. The inspectors reviewed NDE PT procedure GQP 9.7, to determine if the procedure met the ASME Code, Section V, Article 6, and the acceptance criteria met the ASME Code, Section III, Subsection NB-5350. The inspectors also performed an independent assessment of the test results to determine if the requirements of the ASME Code, Section III, Subsection NB-5350 were met.

b. Findings

No findings were identified.

1A28 (Unit 4) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.02a (13). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.06-02.01 - General Installation

The inspectors observed rigging and installation activities associated with steam generator (SG) MB-02 to verify the pre-installation and pre-lift safety verification, pre-transportation verification, rigging equipment size and load capacity selection, load lift calculations, and safety walkdown were performed in accordance with the rigging plan SV4-MB01-MHH-003.

The inspectors reviewed the design specification to verify if the design specification was in accordance with the ASME Code, Section III, Section NCA. The inspectors reviewed the technical manual to verify the rigging and hoisting of the steam generator into containment was completed without exceeding the design loads. Specifically, the inspectors reviewed the technical manual to verify if the center of gravity and lifting configuration were in accordance with the design specification.

The inspectors reviewed the rigging plan to verify lifting requirements were in accordance with the technical manual. Specifically, the inspectors reviewed the rigging plan to verify the load capacity calculations, pre-requisites, and sequential work steps laid out in the "Step by Step Lift Narrative" prior to lifting the SG were performed in accordance with the requirements of the technical manual. The inspectors observed the configuration of trunnion lift links A and B and the installation of the keeper plates to verify they were installed in accordance with the technical manual.

The inspectors reviewed the installation requirements, including proper location, placement, dimensions, alignment, and other mounting requirements to verify they were specified in the approved quality assurance traveler in accordance with the rigging plan. The inspectors attended the pre-job briefing and performed a walkdown of the installation area to verify specially trained personnel and special tools were available to perform the work in accordance with the rigging plan. The inspectors reviewed the work steps and signature logs included in the work package to verify hold points were observed and quality control inspections were conducted as required by the rigging plan. The inspectors observed the licensee's verification of the wind velocity and ambient temperature to verify the speed did not exceed 20 miles per hour at the boom tip and the ambient temperature was above 25 degrees Fahrenheit in accordance with the rigging plan. The inspectors observed the installation of the upending assembly to verify the assembly was installed in accordance with the installation drawing in the rigging plan.

Further, the inspectors observed the lift of the SG through the steam generator temporary installation system (SGTIS) to verify the nozzles did not get damaged in accordance with the rigging plan. The inspectors observed the final setting of the steam generator on the SGTIS and bolting trunnion lift links A & B to the SGTIS to verify it was supported for final installation and alignment in accordance with the rigging plan.

The inspectors reviewed two E&DCRs and one N&D to verify the disposition was conducted in accordance with specification APP-GW-GAP-428, "Nonconformance and Disposition Report," Revision 15.

b. Findings

No findings were identified.

1A29 (Unit 4) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.02a (13). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.03-02.03 - Installation and Welding
- 65001.03-02.06 - Nondestructive Examination
- 65001.B-02.02 - Welding Procedure Qualification
- 65001.B-02.03 - Welder Qualification
- 65001.B-02.04 - Production Controls

The inspectors observed installation activities related to machine welding of the RCS hot and cold leg piping to the reactor vessel nozzles. Specifically, the inspectors observed GTAW machine welding for the following field welds to verify if the reactor coolant system loop installation was performed in accordance with the requirements of the ASME Code, Section III, Subsection NB:

- SV4-RCS-PL01-FW-BHL01, that connect the hot leg L001B to the reactor vessel nozzle,
- SV4-RCS-PL01-FW-BCL04, that connect the cold leg L002C to the reactor vessel nozzle, and
- SV4-RCS-PL01-FW-BCL06, that connect the cold leg L002D to the reactor vessel nozzle.

The inspectors reviewed the steps of the work package, including hold point sign-offs by the welders, QC personnel, NDE Level II, and the ANI to verify if the sequence was maintained and the steps were performed in accordance with the ASME Code, Section III, Subsection NB. The inspectors observed in-process GTAW machine welding of the root welds and intermediate weld passes to verify whether the inter-pass temperature, electrical characteristics, techniques, and argon shielding gas requirements were maintained and checked by the welding operator in accordance with the approved WPS.

The inspectors observed in-process welding parameters to verify if the voltage, amperage, travel speed, and wire-feed speed were being controlled in accordance with the WPS qualified to the requirements of the ASME Code, Section IX. The inspectors reviewed the following activities to verify they were performed in accordance with the WPS and work package:

- the work, including details of materials and personnel, was documented;
- the weld joint was sufficiently protected from wind or rain;
- the weld area was clean and free of harmful substances such as moisture, grease, or paint;
- cleaning and grinding between weld passes and starts and stops were performed as necessary;
- the correct weld filler metal was used and had been appropriately issued with a weld material requisition slip;
- QC personnel performed regular inspections of the welding activities;
- the interpass temperature was monitored and kept below the procedure's maximum temperature; and
- the welds were made in accordance with the variables listed in the WPS.

The inspectors reviewed WPS 8MN-GTAW to verify whether applicable essential variables met the requirements of the ASME Code, Section IX and were qualified to meet the ASME Code, Section III. The inspectors reviewed a sample of four welding operator's qualification records to verify if the skill of welding operators were tested, certified, and maintained in accordance with the requirements of the ASME Code, Section IX. Additionally the inspectors reviewed the CMTR for the weld filler metal used to verify if the weld material physical and chemical composition were in accordance with the ASME Code, Sections II, Part C, and were qualified in accordance with the requirements of the ASME Code, Section III.

The inspectors observed in-process field activities of the NDE PT for the following weld surfaces to verify whether the NDE examinations were performed and documented in accordance with the qualified PT procedure:

- internal back weld surface of field weld SV4-RCS-PL01-FW-BCL06 between the cold leg RCS-L002D and reactor vessel inlet nozzle,
- tack block removal on external surfaces of hot and cold legs, and
- welding preparation of field weld SV4-RCS-PL01-FW-BCL05 on cold leg RCS-L002B to steam generator MB-02.

The inspectors reviewed NDE RT and PT procedures to verify the examination techniques were in accordance with the requirements of the ASME Code, Section V, Articles 2 and 6, and the acceptance criteria met the requirements of the ASME Code, Section III, Subsection NB-5350, "Examination." The inspectors reviewed the written practice for qualification and certification of NDE personnel to verify the document was in accordance with ASNT Recommended Practice SNT-TC-1A-1992, "Personnel Qualification and Certification in Nondestructive Testing." The inspectors observed the PT examination performed in the field by a Level II inspector to verify the requirements of General Quality Procedure 9.7, "Solvent Removable Liquid Penetrant Examination and Acceptance Standard for Welds, Base Materials and Cladding (40 to 125F)," were

adhered to, including checking the surface temperature of the weld, type of penetrant, solvent and developer used, and penetrant and developer dwell times.

The inspectors reviewed the RT performed on hot leg RCS-L001B, cold leg RCS-L002C and RCS-L002D to verify whether the test results recorded by Level II inspectors met the requirements of the ASME Code, Section III, Subsection NB-5350. The inspectors also reviewed the PT performed on welding preparation of field weld RCS-PL01-FW-BCL03 to verify if the test results recorded by Level II inspectors met the requirements of the ASME Code, Section III, Subsection NB-5350.

The inspectors reviewed material certificate of conformance reports for cleaner, penetrant, and developer to verify if the sulfur and halogen material content were less than 1% by weight in accordance with the requirements of the ASME Code, Section V, Article 6, Paragraph T-640, and Article 24. The inspectors reviewed the qualification and certification records for both Level II PT and RT inspectors to verify if the qualifications were in accordance with the ASME Code Section III, Subarticle NB-5520, "Personnel Qualification, Certification, and Verification." Finally, the inspectors reviewed calibration records of the measuring and test equipment used for NDE inspection to verify whether the equipment was controlled, traceable, and calibrated in accordance with the requirements of 10 CFR Part 50 Appendix B, Criteria XII and ASME NQA-1-1994.

b. Findings

No findings were identified.

1A30 (Unit 4) ITAAC Number 2.1.03.03 (72) / Family 05F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.03.03 (72). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.05-02.03 - RPV Installation

The inspectors reviewed the reactor pressure vessel (RPV) design specification to verify if the two temporary lifting lugs were used for rigging and hoisting into the containment vessel to prevent exceeding the design loads in accordance with the requirements of the ASME Code Section III, Subsections NCA and NB, and NQA-1-1994, Part II, Subpart 2.15.

The inspectors reviewed the RPV technical manual to determine if the dry weight, center of gravity location, handling requirements for the upending sequence and vertical lift position were in accordance with the design specification.

The inspectors reviewed the rigging plan to determine if the capacity of the crane, use of the RPV upending J-skid, steel cable spreader bar, torqued lifting lugs with pin lubrication for upending, and weather conditions were in accordance with the technical manual. Finally, the inspectors reviewed the rigging plan to verify if load testing was

performed prior to lifting the RPV in accordance with the "Step by Step Lift Narrative" that included prerequisite and sequential work step signatures.

b. Findings

No findings were identified.

1A31 (Unit 4) ITAAC Number 2.2.01.01 (90) / Family 11A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.01 (90). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors performed a containment system (CNS) functional arrangement walkdown for the following containment vessel flued head nozzle penetrations:

- SV4-RNS-PY-C01 (P19, RCS to RHR pump outlet);
- SV4-RNS-PY-C02 (P20, RHR pump to RCS inlet); and
- SV4-SFS-PY-C02 (P22, IRWST reference cavity purification outlet).

Specifically, the inspectors independently measured the as-built azimuth and elevation locations of the penetrations to verify compliance with the UFSAR, Section 2.2.1, and Figure 2.2.1-1 of Appendix C of the COL for the CNS, such that these penetration samples are located in accordance with the construction isometric drawings. The inspectors reviewed the construction drawings to verify if they met the CNS component locations as shown in Figure 2.2.1-1 of Appendix C of the COL. Finally, the inspectors observed the penetration coverings to verify that they were adequately protected against damage from adjacent work.

b. Findings

No findings were identified.

1A32 (Unit 4) ITAAC Number 2.2.01.02a (91) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.02a (91). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.11-02.03 - Installation and Welding
- 65001.B-02.03 - Welder Qualification

- 65001.B-02.05 - Inspection

The inspectors observed GTAW activities and reviewed documentation for joining two containment vessel penetration assemblies for field welds SV4-SFS-PY-C02 (P22, IRWST reference cavity purification outlet) and SV4-RNS-PY-C01 (P19, RCS to RHR pump outlet) to verify welding and inspections were performed in accordance with the requirements of the ASME Code, Section III, Subsections NE and NC, respectively.

Specifically, for pressure boundary field weld SV4-SFS-PY-C02-2 (P22, flued head to penetration sleeve), the inspectors observed the fit-up and tack welds to verify the alignment and root opening were in compliance with the ASME Code, Section III, Subsection NE-4230. The inspectors reviewed the CMTR for the rod heat number 1332L to verify the chemical analysis and mechanical properties were in accordance with the requirements of the ASME Code, Section II. The inspectors also reviewed the weld material requisition record to verify weld material traceability was maintained in compliance with the ASME Code, Section III, Subsection NE. The inspectors measured the final cover pass maximum reinforcement thickness to verify compliance with the ASME Code, Section III, Subsection NE-4426. The inspectors reviewed the welder qualification record for welder AT2517 to determine if the welder was tested and certified in accordance with the requirements of the ASME Code, Section IX.

For pressure boundary field weld SV4-RNS-PY-C01-3 (P19, flued head to guard pipe), the inspectors observed fit-up and tack inspection activities performed by the QC inspector to verify the individual performed the inspection in compliance with the qualified welding procedure. The inspectors reviewed the weld material requisition record to verify the weld filler material traceability was maintained in accordance with the licensee's site welding procedures.

Finally, the inspectors reviewed final NDE reports for PT and RT on field weld SV4-SFS-PY-C02- 2 (P22) and RT on field weld SV4-RNS-PY-C01-3 (P19) to verify the required examinations were accepted in accordance with the ASME Code, Section III, Subsections NE-5350 and NC-5320, respectively.

b. Findings

No findings were identified.

1A33 (Unit 4) ITAAC Number 2.2.02.02a (120) / Family 07F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.02.02a (120). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.03-02.01 - Purchase and Receipt of Materials
- 65001.03-02.02 - Storage and Handling
- 65001.03-02.03 - Installation and Welding

- 65001.03-02.05 - Pressure Testing
- 65001.03-02.06 - Nondestructive Examination
- 65001.03-02.07 - Review of Records
- 65001.03-02.08 - Problem Identification and Resolution
- 65001.07-02.01 - General Installation
- 65001.07-02.02 - Component Welding
- 65001.07-02.05 - Problem Identification and Resolution
- 65001.B-02.02 - Welding Procedure Qualification
- 65001.B-02.03 - Welder Qualification
- 65001.B-02.06 - Records
- 65001.F-02.02 - Fabrication Records Review

The inspectors conducted an inspection of Module KB-36, which consists of ASME pipe spools and valves in the PCS. The inspectors performed this inspection to verify KB-36 was fabricated in accordance with ASME Code, Section III, WEC design and fabrication specifications, and the UFSAR, Chapter 6. Specifically, the inspectors reviewed fabrication and installation records applicable to the following valves and their associated pipe spools and pipelines:

- PCS-V020 (3 inch manual operated gate valve) installed in pipe spool SV4-PCS-PLW-10F-1A/1B, part of line PCS-PL-L007 (Post-72-hour containment cooling makeup from supply line connections);
- PCS-V044 (4 inch manual operated gate valve) installed in pipe spool SV4-PCS-PLW-10X-1A/1B, part of lines PCS-PL-L048 & L051 (post-72-hour supply line connection); and
- PCS-V050 (2 inch manual operated globe valve) installed in pipe spool SV4-PCS-PLW-10E-1A, part of line PCS-PL-L049 (post-72-hour SFS makeup from supply line connection.)

The inspectors reviewed fabrication records for the valves and pipe spools listed above, including associated pressure boundary welds, to verify the installation was accomplished by qualified personnel and in accordance with approved drawings, qualified procedures, fabrication specifications, and applicable codes and standards. The inspectors reviewed purchase orders and fabrication specifications to verify quality, technical, material, and regulatory requirements were adequately specified in accordance with 10 CFR Part 21 and Part 50, Appendix B, the ASME Code, the UFSAR, and design specifications.

The inspectors reviewed ASME N-5, NPP-1, and NPV-1 code data reports from the fabricators to determine whether the materials specified and hydrostatic tests performed met the requirements of the ASME code and the design specification. In addition, the inspectors reviewed the data reports to determine if they were signed by an authorized representative of the N-stamp holder and an ANI. The inspectors also reviewed the results for the hydrostatic shell test, valve closure and seat leakage test, backseat leakage test, packing leakage test, and operational test recorded in the production test report to verify the required minimum test pressures, holding times, leak rates, and number of times cycled met the requirements listed in the design specification for the valve tested.

The inspectors reviewed the applicable code data reports, weld travelers, and vendor and WEC drawings to verify if the records provided adequate traceability to identify the associated components to the welding procedures, welders, NDE reports, and nonconformance reports used during fabrication. Additionally, the inspectors reviewed all the applicable documents to verify valve and piping materials and welding consumables were of the correct specified type and grade and were uniquely identified by a heat number and markings on the material, when appropriate.

The inspectors reviewed CMTRs to verify if materials were properly heat treated and met the specified chemical, mechanical, and NDE requirements of the ASME Code, Sections II and III, the UFSAR, and WEC design documents. The inspectors also reviewed CMTRs to verify no base material repairs were made without approval from the purchaser in accordance with the ASME Code and WEC fabrication specifications.

The inspectors reviewed a sample of welding procedures to verify the processes and essential variables used were qualified as required by the ASME Code, Sections III and IX. Specifically, the inspectors reviewed the welding procedures to verify if they were written in accordance with a supporting PQR and the ASME Code, Section IX. In addition, the inspectors reviewed the supporting PQRs to verify the ranges of welding variables were qualified and the qualification tests (both type and number of tests) met the acceptance criteria required by the ASME Code.

The inspectors reviewed a sample of welder performance qualification records to determine if the welders were assigned a unique identification number and demonstrated their skill by performing specific performance qualification tests, the qualification testing conditions and qualification limits were fully documented, and the required number of acceptable test results were achieved in accordance with the ASME Code, Section IX, 2007 Edition 2008 Addenda.

The inspectors reviewed reports from VT and PT examinations to determine if the welds had been inspected as required by the ASME Code, Section V and found to meet the acceptance criteria of the ASME Code, Section III.

Lastly, the inspectors walked down the module to verify the selected welds did not have any surface defects; the valves were oriented adequately to match their designed flow direction; the material markings were appropriate; and the module was stored in accordance with the design specifications and applicable ASME Code sections.

b. Findings

No findings were identified.

1A34 (Unit 4) ITAAC Number 2.2.03.02a (159) / Family 06Fa. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.02a (159). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.03-02.06 - Nondestructive Examination

The inspectors reviewed computed radiography of three stainless steel pipe field welds. The welds were for the isolation valves to common injection header piping line PXS-L018B and the CMT A discharge piping lines PXS-L016A and PXS-L017A. Specifically, the inspectors reviewed the results and examination reports for the following welds to determine compliance with the requirements of the ASME Code, Section III:

- Report V-18-RT-302-0267 for field weld SV4-PXS-PLW-020-3 for 8" pipe to inlet side of check valve PXS-PL-V016B on line PXS-L018B;
- Report V-18-RT-302-0281 for field weld SV4-PXS-PLW-01V-8 for 8" pipe to inlet side of globe valve PXS-PL-V015A on line PXS-L017A; and
- Report V-18-RT-302-0330 for field weld SV4-PXS-PLW-01V-10 for 8" pipe to inlet side of globe valve PXS-PL-V014A on line PXS-L016A.

The inspectors reviewed images of the welds to determine whether the technique and brightness at the body of the required wire image quality indicator locations in the area of interest were in accordance with the requirements of MISTRAS radiography procedure 521-RT-302 and the ASME Code, Section V, Article 2. Additionally, the inspectors reviewed the images to determine if the results were in accordance with the requirements of the ASME Code, Section III, Subsection NB-5320, Radiographic Acceptance Standards. Finally, the inspectors reviewed the radiography reports listed above to determine if the results for acceptance were accurately recorded in accordance with MISTRAS 521-RT-302 procedure.

b. Findings

No findings were identified.

1A35 (Unit 4) ITAAC Number 2.2.03.02a (159) / Family 06Fa. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.02a (159). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.03-02.06 - Nondestructive Examination
- 65001.03-02.07 - Review of Records

- 65001.B-02.05 - Inspection

The inspectors observed installation activities associated with CMT A discharge check valve PXS-PL-V017A to DVI line PXS-PL-L018A at elevation 97'-0". The inspectors observed manual stainless steel GTAW activities for field weld SV4-PXS-PLW-01K-1 to verify the valve installation was controlled in accordance with the requirements of the ASME Code, Section III, Subsection NB.

The inspectors reviewed the steps of the work package for hold point sign-offs by the welder, QC personnel, and the ANI to verify the sequence was maintained and the steps were performed in accordance with the ASME Code, Section III, Subsection NB. The inspectors reviewed WPS 1-8.8T01 to verify the essential variables met the requirements of the ASME Code, Section IX. The inspectors also reviewed the weld data sheet included in the work package to verify the WPS, the joint details, the traceability of the welder and weld filler material, the welding instructions and notes, the inspection and NDE procedures, the QC and ANI hold points, and the M&TE traceability were in accordance with the site welding procedures.

The inspectors observed intermediate welding passes to ensure the welder was observing the requirements for interpass temperature, electrical characteristics, and argon shielding gas in accordance with the approved WPS. The inspectors reviewed the welder's performance qualification record to verify the welder was qualified for the process and position in accordance with the requirements of the ASME Code, Section IX, Article III, QW-304. The inspectors reviewed the weld filler metal material CMTRs to verify the material properties conform to the requirements of the ASME Code, Section II, Part C and were in accordance with the requirements of the ASME Code, Section III.

In addition, the inspectors reviewed the NDE results of PT and RT for field weld SV4-PXS-PLW-01K-1 to verify the records included the essential variables and the acceptance criteria were documented in accordance with the qualified NDE procedure. The inspectors reviewed the NDE reports to verify the results were reviewed and accepted by a Level II inspector. The inspectors reviewed the PT and RT procedures to verify the examination techniques and acceptance criteria were in accordance with the requirements of the ASME Code, Section III, Article NB-5000, "Examination."

The inspectors reviewed the written practice for qualification and certification of NDE personnel to verify the document was in accordance with ASNT Recommended Practice SNT-TC-1A-1992, "Personnel Qualification and Certification in Nondestructive Testing." The inspectors reviewed the qualification and certification records of both Level II PT and RT inspectors to verify the qualifications were in accordance with the ASME Code, Section III, Subarticle NB-5520, "Personnel Qualification, Certification, and Verification."

The inspectors reviewed the certification records of the NDE consumables to verify the sulfur and halogen contents were less than 1% by weight per the requirements of the ASME Code, Section V, Article 6, Paragraph T-640, and Article 24. Finally, the inspectors reviewed calibration records of the M&TE used for NDE inspection to verify the equipment was controlled and calibrated in accordance with the requirements of 10 CFR 50, Appendix B, Criteria XII.

b. Findings

No findings were identified.

1A36 (Unit 4) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.02a (159). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.03-02.03 - Installation and Welding
- 65001.03-02.06 - Nondestructive Examination
- 65001.B-02.04 - Production Controls
- 65001.B-02.06 - Records

The inspectors reviewed installation records associated with accumulator lines SV4-PXS-PL-L025A and L027A to discharge check valves SV4-PXS-PL-V029A and SV4-PXS-PL-V028A, respectively. Specifically, the inspectors reviewed the weld records for field welds SV4-PXS-PLW-014-6 (check valve SV4-PXS-PL-V029A to DVI line SV4-PXS-PL-L025A) and field weld SV4-PXS-PLW-014-10 (check valve SV4-PXS-PL-V028A to DVI line SV4-PXS-PL-L027A).

The inspectors reviewed the records of manual GTAW welding activities performed on the field welds to verify the valve installations were performed in accordance with the requirements of the ASME Code, Section III, Subsection NB. The inspectors reviewed the steps of the work package, including hold point sign-offs by the welder, QC personnel, and the ANI, to verify the sequence was maintained. The inspectors reviewed WPS 1-8.8T01 to verify the interpass temperature, electrical characteristics, techniques, and shielding gas were specified in accordance with the requirements of the ASME Code, Section IX.

The inspectors reviewed the performance qualification record for three welders to verify the welders were qualified for the process and position in accordance with the requirements of the ASME Code, Section IX, Article III, QW-304. The inspectors reviewed the weld filler metal CMTRs to verify the material properties conformed to the requirements of the ASME Code, Section II, Part C and were qualified in accordance with the requirements of the ASME Code, Section III.

In addition, the inspectors reviewed the NDE results of PT to verify the tests satisfied the acceptance criteria and were reviewed and accepted by a Level II inspector in accordance with the PT procedure. The inspectors reviewed the PT procedure to verify the examination techniques and acceptance criteria were in accordance with the requirements of the ASME Code, Section III, Article NB-5000, "Examination." The inspectors reviewed the written practice for qualification and certification of NDE personnel to verify the document was in accordance with ASNT Recommended Practice SNT-TC-1A-1992, "Personnel Qualification and Certification in Nondestructive Testing."

The inspectors reviewed the qualification and certification records of two Level II PT inspectors to verify they met the ASME Code, Section III, Subarticle NB-5520, "Personnel Qualification, Certification, and Verification."

b. Findings

No findings were identified.

1A37 (Unit 4) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.02a (159). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.06-02.01 - General Installation
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors observed the heavy lift and placement of accumulator B (tank PXS-MT-01B) into containment to verify the component lift was performed in accordance with the ASME Code, Section III, Subsections NCA and NB. The inspectors reviewed the design specification to verify the lifting lugs met the ASME Code, Section III, Subsections NCA and NB. The inspectors reviewed the technical manual to verify the weight, center of gravity, and lift instructions were in accordance with the design specification. The inspectors observed the lift to verify the accumulator was oriented in accordance with the technical manual. The inspectors reviewed the rigging plan to verify the lift requirements were in accordance with the technical manual. Specifically, the inspectors observed the licensee's verification of the wind velocity, the ambient temperature, and the alignment of the tank and rigging during the lift.

Also, the inspectors reviewed the attachment points, attachment type, and the rigging material to verify the accumulator rigging configuration was in accordance with the rigging plan. The inspectors observed the lift to verify the accumulator was not damaged. The inspectors also observed the final set of the accumulator tank in the nuclear island, including alignment of the baseplate holes to the anchor bolts, release of the load from the crane, and initial installation of the nuts to the anchor bolts, to verify the tank was aligned and installed in the correct location in accordance with the design specification and the rigging plan.

In addition, the inspectors walked down the tank prior to installation to verify the tank matched the physical description in the COL Appendix C, Section 2.2.3, "Passive Core Cooling System." The inspectors reviewed the nameplate attached to the tank to verify it matched the description in the design description; met the marking requirements of ASME Code Section III for a Class 3 pressure vessel; and had the component number designated in COL Appendix C, Table 2.2.3-1. The inspectors observed the following attributes to verify they met the requirements of the technical manual:

- surface of the tank and attachments, including no signs of physical damage or deterioration during storage;
- tank nozzles were adequately covered to preclude introduction of foreign materials during tank installation; and
- the uncoated portions of the tank, baseplates, and nozzles to verify there were no potentially harmful contaminants on those surfaces.

b. Findings

No findings were identified.

1A38 (Unit 4) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.02a (159). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.F-02.02 - Fabrication Records Review

The inspectors reviewed procurement and fabrication records for Class 1500 8" diameter check valve SV4-PXS-PL-V017A welded to CMT direct injection line PXS-PL-L018A to verify the fabrication and testing met the requirements of WEC design specification APP-PV03-Z0-001 and the ASME Code, Section III, Subsection NB. The inspectors reviewed records related to the valve body, the valve disk, the pipe fittings, the 2" round bar for weld sleeve, and the concentric reducer.

The inspectors reviewed the WEC purchase order and vendor's certificate of compliance to verify the valve was hydrostatically tested in accordance with the WEC design specification.

The inspectors reviewed fabrication records including CMTRs for the valve parts and weld filler metals to verify the applicable chemical analysis, mechanical properties, and heat treatment were in accordance with requirements of the ASME Code, Section II, Parts A and C. The inspectors reviewed RT and PT reports for the valve to verify the NDE exam results met the acceptance criteria of the ASME Code, Section III.

The inspectors reviewed records for the pressure boundary weld between the reducer and the valve to verify welding was performed in accordance with the requirements of the ASME Code, Sections III. The inspectors reviewed the valve ASME Code Data NPV-1 report to verify the traceability of materials, dimensions, and hydrostatic test pressure and temperature were in accordance with the ASME Code. In addition, the inspectors reviewed the ASME Code data report to verify the ANI had inspected the valve and authorized the application of the Code symbol stamp in accordance with the ASME Code, Section III, Subsection NCA-8000. The inspectors reviewed the valve pneumatic seat test report and hydrostatic test report to verify the test parameters and results met the acceptance criteria of the WEC valve data sheet and WEC design

specification. The inspectors reviewed the final quality data package to verify the records were complete, accurate, reviewed and approved by the responsible organizations, and provided objective quality evidence the ASME Code requirements were satisfied.

The inspectors reviewed deviation reports issued during the design and fabrication of valve parts to verify deviations were dispositioned with technical justification and approved by the customer in accordance with site corrective action procedures.

b. Findings

No findings were identified.

1A39 (Unit 4) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.02a (159). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.04-02.01 - General Installation
- 65001.04-02.02 - Pipe Support and Restraint Welding
- 65001.B-02.02 - Welding Procedure Qualification
- 65001.B-02.03 - Welder Qualification
- 65001.B-02.04 - Production Controls
- 65001.B-02.05 - Inspection

The inspectors reviewed isometric construction drawing APP-PXS-PLW-02L for PXS pipe support SV4-PXS-PH-11R0142 located in containment building room 11207 to verify the pipe support was installed in accordance with the qualified welding procedure. The inspectors performed a walkdown of a rigid pipe support on line PXS-PL-127B to verify it was constructed and installed in the location and was aligned and supported the pipe in accordance with the isometric drawing. The inspectors observed SMAW for field weld SV4-PXS-PH-11R0142-7 to verify the welding location was in accordance with the weld map.

The inspectors observed intermediate pass welding to verify the interpass temperature, amperage and voltage, shielding gas, gas flow rate, technique, and travel speed to verify they were within the limits of the WPS. The inspectors reviewed the WPS to verify it was qualified in accordance with the requirements of the ASME Code, Section IX. The inspectors reviewed the work steps of the WDS to verify the hold point sign-offs were sequentially performed by QC personnel in accordance with the licensee's procedures. The inspectors also reviewed the weld data sheet in the work package to verify the following attributes were in accordance with the site general welding specification:

- assembly was properly documented, including details of materials and personnel activities;

- weld joint was sufficiently protected from wind or rain;
- weld area was clean and free of harmful substances such as moisture, grease, or paint;
- cleaning and grinding between weld passes and starts and stops were performed as necessary;
- correct weld filler metal was being used and had been appropriately issued with a weld material requisition slip;
- QC performed regular inspections of the welding activities;
- interpass temperature was monitored and kept below the procedure's maximum temperature; and
- welds were made in accordance with the variables listed in the WPS.

The inspectors reviewed the welder's performance qualification record to verify the individual was qualified for the welding process and position in accordance with the requirements of the ASME Code, Section IX, Article III, QW-304. The inspectors reviewed weld material requisition slips from the rod room and etchings on the electrodes to verify the weld filler material was being properly controlled and traceable to the lot number in accordance with the quality assurance program. The inspectors reviewed the weld filler metal CMTRs to verify the material's chemical analysis and mechanical properties conformed to the requirements of the ASME Code, Section II, Part C, and Section III, Subsection NF.

In addition, the inspectors reviewed the NDE MT examination report to verify the surface examination was performed and accepted by a Level II inspector in accordance with the qualified NDE MT procedure and the ASME Code, Section III, Article NF-5000, "Examination." The inspectors reviewed the qualification and certification of NDE personnel to verify the document was in conformance with ASNT Recommended Practice No. SNT-TC-1A-1992, "Personnel Qualification and Certification in Nondestructive Testing". The inspectors reviewed the qualification and certification record of the Level II MT examiner to verify the qualifications were in accordance with ASNT SNT-TC-1A. The inspectors reviewed the certification records of the NDE consumables to verify the material met the requirements of the ASME Code, Section V, Article 7. Finally, the inspectors reviewed calibration records of the M&TE used for the NDE MT examination to verify the equipment was controlled and calibrated in accordance with the requirements of the M&TE program procedures.

b. Findings

No findings were identified.

1A40 (Unit 4) ITAAC Number 3.3.00.02a.i.c (762) / Family 01E

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.c (762). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 - Inspection of Concrete Placement

- 65001.A.02.03 - Independent Assessment/Measurement Inspection
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

The inspectors performed on-site inspection of construction activities associated with the non-radiological area of the auxiliary building. The inspectors performed inspection activities associated with the wall segment located along column line P and between the shield building wall and column line 11, from elevation 100'-0" to 117'-6". The inspectors observed ongoing reinforcement installation activities and reviewed a sample of licensee records, including three design drawings, three N&D reports, and one E&DCR. The inspectors reviewed these documents to determine if differences between the as-built and as-designed structure was properly documented and incorporated in the final as-built drawings.

The inspectors performed independent measurements of steel reinforcement bars in the wall to verify they were constructed in accordance with ACI 349-01. Specifically, the inspectors conducted in-field measurements of installed main horizontal and vertical reinforcing steel to verify it met the size and spacing requirements; the minimum concrete clear cover; and the lapped splices met the minimum length as described in design drawings.

b. Findings

No findings were identified.

1A41 (Unit 4) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.c (762). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.03 - Independent Assessment/Measurement Inspection
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

The inspectors reviewed design drawings; took independent measurements; and observed ongoing work associated with construction of the reinforced concrete column line 11 wall from column line L to P from elevation 100'-0" to 117'-6" in the auxiliary building.

The inspectors reviewed design drawings to verify they were in accordance with the UFSAR and COL, Appendix C, Section 3.3. Specifically, the inspectors reviewed the reinforcement details, including splices, development length, and shear reinforcement, as described in the drawings to verify it met the seismic category 1 structural design and analysis requirements specified in ACI 318/349. The inspectors reviewed coupler and weld sizing requirements described in the drawings to verify they met the requirements

of the UFSAR, Section 3.8.4.5.1. The inspectors reviewed the dimensions detailed in the drawings to verify they aligned with the seismic analysis inputs specified in the UFSAR, Section 3.8.4.5.3 and COL, Appendix C, Section 3.3. The inspectors reviewed the concrete design requirements, including strength and aggregate size, described in the drawings to verify the requirements of the UFSAR, Section 3.8.4.6.1.1 were included. The inspectors reviewed the reinforcing steel material requirements, including mechanical connection material requirements, as described in the drawings to verify they encompassed the requirements specified in the UFSAR, Section 3.8.4.6.1.2. The inspectors reviewed the reinforcing steel sizes and spacing specified in the design drawings to verify it aligned with the UFSAR, Figure 3H.5-5.

The inspectors independently measured the steel reinforcement sizes, spacing, and locations of the vertical and horizontal rebar to verify it was installed in accordance with the design drawings, specifications SV4-CC01-Z0-031 and SV4-CR01-Z0-011, and ACI 349-01, Chapter 21, "Special Provision for Seismic Design." The inspectors measured the reinforcing bar dowels and lap splices to verify they met the requirements specified on the design drawings, in specification SV4-CR01-Z0-011, ACI 349-01, Chapter 21, and ACI 349-01, Chapter 12, "Development and Splices of Reinforcement." The inspectors measured the hooks and bar bends to verify they met development, splice, and bend diameter requirements of ACI 349-01, Chapter 12 and Chapter 21. The inspectors independently measured the reinforcement bar clearances to verify they were installed in accordance with ACI 349-01, Section 3.3.2. The inspectors observed the markings on the steel reinforcement bars to verify they were the size specified on the design drawings and were the material required by ACI 349-01, Section 21.2.5, "Reinforcement in Members Resisting Earthquake-Induced Forces."

The inspectors observed in-process installation activities to verify work packages were available in the work area and were followed in accordance with NQA-1-1994, Basic Requirement 5 and 10 CFR 50, Appendix B. The inspectors reviewed the signature logs in the work packages to verify the installation and inspection sequences were maintained in accordance with 10 CFR 50, Appendix B, Criterion V and 1-SV4-CC01-Z-031, Section 4.5, "Inspection/Verification."

The inspectors observed in-process installation activities of embedded plates to verify these activities were controlled and performed in accordance with specification SV4-CC01-Z-031, Section 4.2.3.6. Additionally, the inspectors independently measured the embedded plates specified on design drawings APP-12S02-CE-PW903 and APP-12S02-CE-PW904 to verify they were properly located along column line 11 and were secured providing proper clearances as required by the design drawings. The inspectors observed the surface of these embedded plates to confirm excessive rust or material defects were not present.

The inspectors reviewed a sample of four design changes to ensure differences between the as-built and as-designed structures were documented and dispositioned in accordance with NQA-1-1994, Basic Requirement 3 and specification APP-GW-GAP-420. Additionally, the inspectors reviewed the technical justifications for these design changes to verify the dispositions had suitable technical bases in accordance with ACI-349-01 and 10 CFR 50, Appendix B.

b. Findings

No findings were identified.

1A42 (Unit 4) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.c (762). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

The inspectors performed inspection activities associated with walls on column lines L and M located between wall 11 and the shield building from elevation 100'-0" to 117'-6". The inspectors observed ongoing reinforcement installation activities and reviewed licensee records including design drawings, design specifications, design change documents, and nonconformance reports.

The inspectors performed independent measurements of steel reinforcement on walls L and M to verify whether they were installed in accordance with the requirements of ACI 349-01. Specifically, the inspectors conducted in-field measurements of installed reinforcing steel to verify it met the size and spacing requirements; minimum concrete clear cover; lapped splices met the minimum length; and reinforcement around wall penetrations was installed in accordance with latest approved design drawings.

The inspectors independently measured reinforcement spacing in congested areas to verify whether reduced spacing between steel reinforcement met the requirements specified in Section 3.3.2 of ACI 349-01. The inspectors performed measurements of embedments to verify they were located, secured, free of concrete or excessive rust, and had the clearances in accordance with General Notes drawing SV3-0000-C9-002A. The inspectors evaluated the condition of installed reinforcement to verify it was secured, free of concrete or excessive rust, and had the clearances in accordance with the licensee's design specification and drawings.

The inspectors observed reinforcement installation activities to verify they were performed using the latest-approved design changes, design drawings and design specifications in accordance with procedure APP-GW-GAP-420 and NQA-1 1994, Basic Requirement 3 and Supplement 3S-1. The inspectors also reviewed two nonconformance reports to verify if non-conforming items were dispositioned in accordance with Section 4.6.4 of procedure APP-GW-GAP-428.

b. Findings

No findings were identified.

1A43 (Unit 4) ITAAC Number 3.3.00.02a.i.d (763) / Family 01Fa. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.d (763). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

The inspectors performed inspection of construction activities associated with column line N wall from column line 1 to 12'-9" north of column line 1 from elevation 100'-0" to 118'-2 1/2" in the Unit 4 radiologically controlled area of the auxiliary building. The inspectors observed ongoing reinforcement installation and concrete placement activities and reviewed the licensee's records including design specifications, design drawings, and E&DCRs.

The inspectors performed independent measurements of the wall reinforcement to verify it was constructed in accordance with ACI 349-01. Specifically, the inspectors measured installed reinforcing steel to verify whether it met the size and spacing requirements; met minimum concrete clear cover; and lap splices met the minimum length in accordance with the design drawings.

The inspectors sampled four E&DCR's to determine if steel reinforcement was installed using the latest-approved design changes, design drawings, and design specifications in accordance with NQA-1 1994, Basic Requirement 3 and Supplement 3S-1.

The inspectors reviewed quality records and performed direct inspection of concrete placement activities. Specifically, the inspectors reviewed concrete pour card No. 4029 and a sample of three batch tickets to determine whether concrete mix design requirements were properly translated into quality assurance documents in accordance with design specification SV4-CC01-Z0-026. The inspectors compared the pour card to the batch tickets to verify concrete delivered had the proper mix type and delivery location. In addition, the inspectors verified the concrete trucks did not exceed the 300 revolutions specified on SV4-CC01-Z0-026 prior to placement of the mix. The inspectors also verified transport time was completed within the time allowed by ACI 349-01.

During the concrete placement, the inspectors observed in-process concrete testing to determine whether concrete temperature, slump, and air content requirements in the mix were verified by quality control personnel as required by specification SV4-CC01-Z0-026 and ACI 349-01. The inspectors observed the in-process testing to verify the methods used for testing were in accordance with specification SV3-CC01-Z0-027 and required ASTM standards. The inspectors also observed the sampling of 24 concrete strength test cylinders to verify whether sample collection was performed in accordance with specification SV4-CC01-Z0-027 and ASTM C172.

b. Findings

No findings were identified.

IMC 2504, Construction Inspection Program – Inspection of Construction and Operational Programs

1P01 Construction QA Criterion 16

a. Inspection Scope

Follow-Up of Selected Issues

Based on items reviewed during routine corrective action program reviews, the inspectors selected a sample of issues identified in the corrective action programs for a more in-depth review and follow-up.

The inspectors reviewed SNC corrective action report 211074, (NRC Identified) Clarification to Westinghouse on Boron Precipitation Concern CR 815684, corresponding WEC corrective action prevention and learnings (CAPAL) 100025998, SNC interface of corrective action processes condition report (CR) 815684 Boron Precipitation RFI response lacks adequate technical detail, and other related condition reports and technical evaluations to evaluate the effectiveness of the licensee's corrective actions. The inspectors assessed whether the licensee properly identified, accurately and completely documented, and properly classified and prioritized the issue. The inspectors also assessed whether the licensee adequately considered extent of condition, generic implications, common cause, and previous occurrences, adequately identified root causes and apparent causes, and identified appropriate and timely corrective actions. Also, the inspectors verified that the licensee processed the issue in accordance with procedure, ND-AD-002, Nuclear Development Corrective Action Program, Rev. 26.

b. Findings

No findings were identified.

1P02 Construction QA Criterion 16

a. Inspection Scope

Quarterly Resident Inspector Corrective Action Program (CAP) Routine Review

The inspectors reviewed issues entered into the licensee's CAP daily to assess issues that might warrant additional follow-up inspection; to assess repetitive or long term issues; to assess adverse performance trends; and to ensure the CAP appropriately included regulatory required non-safety related SSCs. The inspectors periodically attended the licensee's corrective action program review meetings; held discussions with

licensee and contractor personnel; and performed reviews of CAP activities during the conduct of other baseline inspection procedures. The inspectors reviewed conditions entered into the licensee's CAP to determine whether issues were appropriately classified in accordance with the licensee's quality assurance program and CAP implementing procedures. The inspectors reviewed corrective actions associated with conditions entered into the CAP to determine whether appropriate actions to correct the issues were identified and implemented effectively, including immediate or short-term corrective actions, in accordance with the licensee's quality assurance program requirements and 10 CFR 50, Appendix B. Additionally, the inspectors reviewed corrective actions taken to determine whether they were commensurate with the significance of the associated condition in accordance with the licensee's CAP implementing procedures. The inspectors completed reviews of CAP entry logs to verify issues from all aspects of the project, including equipment, human performance, and program issues, were being identified by the licensee and its contractors at an appropriate threshold and entered into the CAP as required by the licensee's CAP implementing procedures.

b. Findings

No findings were identified.

1P03 ITAAC Management

a. Inspection Scope

During the week of September 24, 2018, the NRC conducted an inspection of the licensee's program for managing ITAAC closure, per IP 40600, "Licensee Program for Managing ITAAC Closure," dated July 28, 2014. Specifically, the inspection was conducted to verify the following:

- the ITAAC closure process, as documented in each ITAAC notification submitted to the NRC, was adequately controlled by procedures;
- the ITAAC closure and ITAAC maintenance controls have been properly implemented and the resulting notifications on ITAAC accurately reflect the record of completion and maintenance of the subject ITAAC;
- the Quality Assurance (QA) controls for ITAAC related documentation conformed to the guidance of NEI 08-01;
- training requirements have been established for individuals involved with preparation, performance, approval, and audit activities for ITAAC completion packages, ITAAC Closure Notices (ICNs), and other notifications on ITAAC;
- ITAAC Project Managers (PMs) met the established qualification requirements and training activities; and
- the ITAAC notification process conformed to the regulatory requirements of 10 CFR 52.99(c).

The inspectors reviewed the detailed process established by the licensee for the generation, validation, and submittal of ITAAC notifications to the NRC. The inspectors assessed the framework provided for organization, division of responsibilities, quality

assurance, and final authority, as set forth in the licensee's approved procedures and instructions.

Per IP 40600, the inspectors utilized NEI 08-01 as endorsed by the NRC in RG 1.215 for guidance to verify ITAAC closure package controls were in place, which included programmatic controls for ITAAC completion, documentation, records verification, quality assurance, and notification to the NRC.

The inspectors sampled nine ICNs for both targeted and non-targeted ITAACs to verify that the licensee implemented its ITAAC closure program in accordance with approved procedures and instructions.

Specifically, for nine ICNs, the inspectors reviewed the associated ITAAC completion packages, which included the ICNs, the Principal Closure Documents (PCDs), the document transmittals, and the PCD review forms. The inspectors verified that procedural controls have been established that provide reasonable assurance that the ITAAC have been successfully performed and the acceptance criteria have been met and are being maintained. For all QA records, such as the PCDs associated with the ICNs, the inspectors verified that the documents were prepared, reviewed, approved, revised, and stored per the licensee's QA Program and as required by NEI 08-01 and site procedures.

The inspectors sampled ITAAC related Condition Reports (CRs) to verify ITAAC related issues were captured and dispositioned in the CAP. The inspectors verified that the qualification requirements and training activities had been established for the groups and individuals involved with preparation, performance, and approval for ITAAC completion packages, ICNs, and other notifications on ITAAC.

b. Findings

No findings were identified.

1P04 Reporting Defects and Noncompliance - Construction

a. Inspection Scope

The inspectors reviewed the implementing procedures for the procurement of safety-related components to verify compliance with 10 CFR Part 21 and 10 CFR 50.55(e). The inspectors reviewed eight purchase orders issued by WECTEC and Georgia Power for safety-related components to verify that the documents invoked the requirements of 10 CFR Part 21 and 10 CFR 50.55 (e)(7). In all cases reviewed, the purchase orders explicitly required compliance with these regulations.

The inspectors reviewed the records retention procedures to ensure that the program met the requirements of 10 CFR 50.55(e)(9). Specifically, the inspectors reviewed procedures to determine that the licensee established retention measures for procurement documents, and records of deviations and non-compliances. The inspectors reviewed evaluation reports developed by CB&I and WECTEC dating back to 2015, for items that failed to comply with tolerance requirements, required tests, and

nonconforming support components. The inspectors reviewed these documents to verify that the licensee evaluated deviations, reported defects and noncompliances, and retained records in accordance with 10 CFR 50.55(e)(9).

b. Findings

No findings were identified.

4. OTHER INSPECTION RESULTS

4OA5 Other Activities

.01 Non-Cited Violation (NCV) 05200025/2017002-01 and 05200026/2017002-01, "Thermal Stress Analysis Not Performed for 14-inch ADS Squib Valves IAW with ASME Section III" Closure

a. Inspection Scope

During a previous inspection documented in integrated inspection reports 05200025/2017002 and 05200026/2017002, the inspectors identified an ITAAC finding of very low safety significance (Green) and associated NCV for SNC's failure through their contractor WEC to perform thermal stress analysis in the ASME design report for the shear cap and valve body of the 14-inch fourth stage ADS squib valves, RCS-PL-004A/B/C/D (NCV 05200025/2017002-01 and 05200026/2017002-01, "Thermal Stress Analysis Not Performed for 14-inch ADS Squib Valves IAW with ASME Section III"). The inspectors determined that the ASME design report contained insufficient detail to show that the 14-inch ADS squib valves satisfy the thermal stress requirements. The RCS design transients evaluated both pressure and temperature variations resulting from design transients; however, the temperature variations were not appropriately transcribed to the plant and system transients for the squib valves and incorporated in the ASME design report. The inspectors determined that the following ASME Section III requirements were not met: subparagraphs NB-3222.2, Primary Plus Secondary Stress Intensity and NB-3222.4, Analysis for Cyclic Operation for the shear cap, and subparagraph NB-3545.3, Fatigue Requirements for the valve body. These NCVs were left open during the time of the inspection pending completion of corrective actions to show that compliance was restored and the acceptance criteria of Unit 3 and Unit 4 ITAAC 13 was not impacted. These corrective actions included additional analysis and revisions to the ASME design report and supporting documents.

During the week of September 3, 2018, the inspectors reviewed corrective action documents, design reports, transient analyses, calculations, and E&DCRs to determine if corrective actions for NCV 05200025/2017002-01 and 05200026/2017002-01 were taken to show that compliance was restored and the acceptance criteria of Unit 3 and Unit 4 ITAAC 13 was not impacted.

The inspectors reviewed corrective action documents to determine if the licensee's responses and stated corrective and preventative actions were timely and appropriate, and if corrective actions have been fully implemented. The inspectors reviewed the

corrective action documents to determine if they referenced the appropriate thermal stress requirements in accordance with the ASME Code, Section III, and if the need for document revision was identified based on the findings identified in NCV 05200025/2017002-01 and 05200026/2017002-01.

The inspectors reviewed transient analyses, calculations, and E&DCRs to determine if plant and system thermal transients affecting the fourth stage ADS squib valves were analyzed in accordance with the UFSAR and translated into component specific transient documents. The valve vendor revised the ASME design report to include additional thermal transients, which was reviewed and accepted by WEC and SNC. The inspectors reviewed the revised ASME design report for the fourth stage ADS squib valves to determine if thermal transients were included as inputs in the calculation of thermal stresses to the valve body and shear cap, and if the thermal stress analyses met the ASME Code, Section III requirements.

The condition for failure to perform a thermal analysis no longer exists nor impacts the acceptance criteria of the ITAAC therefore, NCV 05200025/2017002-01 and 05200026/2017002-01 is considered closed.

b. Findings

No findings were identified.

.02 NCV 05200025/2016004-01 and 05200026/2016004-01, "Failure to Identify Nonconforming Embed Plate Welds" Closure

a. Inspection Scope

During a previous inspection documented in integrated inspection reports 05200025/2016004 and 05200026/2016004, the inspectors identified an ITAAC finding of very low safety significance (Green) and associated NCV for the licensee's failure to identify nonconforming welds between seismic category I embed plates and structural modules inside the Vogtle Unit 3 and Unit 4 containment buildings (NCV 05200025/2016004-01 and 05200026/2016004-01, Failure to identify nonconforming embed plate welds). The inspectors determined that QC inspectors failed to identify that welds did not have thorough fusion between adjacent layers of weld metal, and therefore did not meet the visual acceptance criteria established by the AWS D1.1:2000 and AWS D1.6:1999 Codes. During the time of the inspection, the licensee was performing an extent of condition inspection to determine if additional welds were affected. These NCVs were left open during the time of the inspection pending completion of the extent of condition and corrective actions to show that compliance was restored and the acceptance criteria of Unit 3 and Unit 4 ITAAC 760 was not impacted. The inspector's finding and completion of the extent of condition inspection performed by the licensee identified a total of 37 welds that were not in compliance with AWS Code: 19 welds in Unit 3 CA01, 8 welds in Unit 3 CA02, 4 welds in Unit 4 CA01, and 6 welds in CA05.

During the week of September 3, 2018, the inspectors reviewed corrective documents, N&D reports, weld repair records, NDE examination records, and qualification records to determine if licensee corrective actions for NCV 05200025/2016004-01 and

05200026/2016004-01 were taken to show that compliance was restored and the acceptance criteria of Unit 3 and Unit 4 ITAAC 760 was not impacted.

The inspectors reviewed corrective action documents to determine if the licensee's responses and stated corrective and preventative actions were timely and appropriate, and if corrective actions have been fully implemented. The inspectors reviewed the corrective action documents to determine if all welds identified in the inspectors findings and licensees extent of condition were documented in N&D reports, and if the weld repair and NDE actions taken were in accordance with the applicable AWS Code and ANSI/AISC N690-1994.

For the 37 weld repairs, the inspectors reviewed weld data sheets to determine if weld repairs were documented for the welds identified in corrective action documents and N&D reports. The inspectors reviewed the weld data sheets to determine if welders' signatures were documented for repairs performed in accordance with the licensee's welding control procedure, inspection hold points were identified in accordance with AWS Code and the welding control procedure, and QC inspectors' signatures and associated reports were documented in accordance with the welding control procedure.

The inspectors reviewed NDE reports (MT, PT, and UT) for the 37 weld repairs to determine if NDE was performed and met acceptance criterion in accordance with the licensees NDE procedures. The inspectors reviewed the structural weld inspection plan used to perform visual inspections of the weld repairs to determine if the visual inspection acceptance criteria of AWS D1.1:2000 and AWS D1.6:1999 Codes were included in the inspection plan. In addition, the inspectors reviewed a sample of VT, PT, MT, and UT qualification records to determine if QC inspectors were qualified for the inspections performed.

The condition for failure to identify and correct non-conforming welds no longer exists nor impacts the acceptance criteria of the ITAAC, therefore NCV 05200025/2016004-01 and 05200026/2016004-01 is considered closed.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

.01 Exit Meeting

On October 12, 2018, the inspectors presented the inspection results to Mr. J. Klecha, Vogtle Vice President, and other licensee and contractor staff members. Proprietary information was reviewed during the inspection period, but was not included in the inspection report.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee and Contractor Personnel

R. Givens, SNC Document Control Supervisor
T. Neal, SNC Procedures and Document Services Supervisor
D. Gardner, SNC Licensing Lead
C. Castell, SNC Licensing Engineer
G. Scott, SNC Licensing Engineer
L. Pritchett, SNC ITAAC Project Manager
R. Beilke, SNC ITAAC Project Manager
T. Petrak, SNC ITAAC Manager
K. Stacy, SNC Licensing Supervisor

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Item Number</u>	<u>Type</u>	<u>Status</u>	<u>Description</u>
05200025/2017002-01	NCV	Closed	Thermal Stress Analysis Not Performed for 14-inch ADS Squib Valves IAW with ASME Section III
05200026/2017002-01	NCV	Closed	Thermal Stress Analysis Not Performed for 14-inch ADS Squib Valves IAW with ASME Section III
05200025/2016004-01	NCV	Closed	Failure to Identify Nonconforming Embed Plate Welds
05200026/2016004-01	NCV	Closed	Failure to Identify Nonconforming Embed Plate Welds

LIST OF DOCUMENTS REVIEWED

Section 1A01

ASME Code Section III-98 Edition including 00 addenda; Subsection NCA-1210, -3250, and 3520; and Subsection NB-3130, -3200 for Class 1 Components
NQA-1-1994, Part II, Subpart 2.15, Quality Assurance Requirements for Hoisting, Rigging, and Transporting of Items for Nuclear Power Plants
APP-MV20-Z0-100, AP1000 Pressurizer Design Specification for RCS System, Revision 11
APP-MV20-VHM-001, AP1000 Pressurizer Technical Manual: Instructions for Receipt Inspection, Storage and Assembly, Revision 0
SV3-MV20-MHH-001, Rigging Plan - Field Copy, Revision 0

Section 1A02

WEC APP1000 Fabrication and Installation Specification APP-PH02-Z0-002, "AP1000 ASME Section III Class 1, 2 and 3 Pipe Supports/Tubing Supports," Revision 4
 WEC Document APP-GW-P1-027, "Lisega Standard Component Installation and Operation Information," Revision 1
 Isometric Construction Drawing APP-RCS-PLW-041, "Reactor Coolant System Containment Bldg Rooms 11303/1304, Surge Line-Spool Piece 1," Revision 4
 Isometric Construction Drawing APP-RCS-PLW-042, "Reactor Coolant System Containment Bldg Room 11303, Surge Line-Spool Piece 2," Revision 3
 Isometric Construction Drawing APP-RCS-PLW-043, "Reactor Coolant System Containment Bldg Rooms 11303/1304, Surge Line-Spool Piece 3," Revision 4
 Drawing APP-RCS-PH-11V01011, "Pipe Support Drawing RCS System RCS-PH-IIV0101," Revision 3
 Drawing APP-RCS-PH-11C01021, "Pipe Support Drawing RCS System RCS-PH-11C0102," Revision 2
 Drawing APP-RCS-PH-11Y101031, "Pipe Support Drawing RCS System RCS-PH-11Y0103," Revision 2

Section 1A03

WEC Isometric Drawing SV3-PXS-PLW-080-R0, "Passive Core Cooling System Containment Building Room 11305 ADS Piping to Sparger B", Rev. 0
 WECTEC Weld Data Sheet (WDC) SV3-PXS-PLW-080-5 for work package SV3-PXS-P0W-800033, 8-8-2018
 Lincoln Electric CMTR-No. 6338965 ES-RAXM for Lot-No. 1203E, SFA-5.9 ER308/308L, 1/8" dia., April 10, 2015
 Lincoln Electric CMTR-No. 6338965 ES-RAXL for Lot-No. 1203F, SFA-5.9 ER308/308L, 3/32" dia., April 14, 2015
 S&W Record of Welder Performance Qualification Test (WPQ) - ASME Section IX with GTAW 1CS-02 for JDC6055 (06/12/2018), and GTAW 1SS-02 for BAP7990 (06/28/2018), DJK5939 (03/29/2017), and JJ9039 (04/11/2018)

Section 1A04Design Specification, Drawings and Purchase Order

WEC Design Specification APP-PV10-Z0-001, Ball and Plug Valves, ASME Boiler & Pressure Code Section III, Class 2 and 3, Revision 7
 WEC Purchase Order 4500312904 Change Notice 20, dated October 17, 2012, to Crane Nuclear for procurement of 2-inch Plug Valve Air Operated
 WEC Drawing APP-PV10-V0-014, Air-operated plug Valve 2 Class 150, Butt Weld Envelope Dimensions, Revision 2
 WEC Data Sheet APP-PV10-Z0D-141, PV10 Datasheet 141, Revision 1
 Crane Nuclear Design Report, CNI Report No. DR-157, 2-inch Class 150 Plug Valve, Air Operated, Assembly No. CD04805-00N2, Datasheet No. APP-PV10-Z0D-141, Revision 9, dated September 6, 2012
 Crane Nuclear Design Report CNI Report No. DR-157-RECON-3, Revision 0, dated November 19, 2012
 WEC purchase order No. 4500327665, change order 19, dated February 24, 2015, issued to Fisher Control INTL Inc., for procurement of 1 Class 150 Globe Valve
 WEC drawing APP-PV14-V2-105002, PV14 Datasheet 105 Assembly Drawing, Revision 1
 WEC Design Specification APP-PV14-Z0-001, Air Operated Globe and Stop Check Valves, ASME Boiler and Pressure Vessel Code, Section III, Class 1, 2, and 3, Revision 7

WEC Datasheet APP-PV14-Z0D-105, PV14 Datasheet 105, Revision 3
 Fisher Control Design Report 11QN09-DR-02, Design Report for Class 2 Components per
 ASME Sec. III, Div. 1, 1998 Ed., 2000 Add., Revision A

Quality Assurance Documents

WEC Quality Release & Certificate of Conformance No. QR-13-641, Revision 3, March 27, 2015
 WEC Quality Release & Certificate of Conformance No. QR-13-641, Revision 0, February 21, 2013, with Contingent Quality Report No. CQR-879 Revision 0
 WEC Quality Release & Certificate of Conformance No. 13-641, Revision 1, September 4, 2014, for Contingent Report No. 879, Revision 1
 WEC Quality Release & Certificate of Conformance No. 13-641, Contingent Report No. N/A, Revision 2, January 5, 2015
 Crane Nuclear Certificate of Compliance for 2-inch Model CTXP-1 Class 150 AOV Plug Valve Assembly VDS: APP-PV10-Z0D-141 Rev. 1 S/N E2267, dated February 18, 2013
 ASME Form NPV-1, Certificate Holders Data Report for Nuclear Pumps or Valves, for 2 x 2 Plug Valve, September 9, 2014
 WEC Quality Release and Certificate of Conformance QR-15-1105 Rev.0, Continent QR# 1408, Revision 0, dated April 24, 2015
 WEC Quality Release and Certificate of Conformance QR 15-1105, Rev. 0, dated April 24, 2015
 Fisher Controls Manufacturers Certification 0987790VOG, for 1 HPNS Globe Valve Assembly S/N 19089917, Tag No. APP-PV14-Z0D-105, April 2, 2015
 Fisher Controls Design Report Review Certification for Valve S/N 0019089917, 1 Class 150 HPNS w/Schedule 80S BWE Valve Body, February 26, 2016
 Fisher Controls Certification of Conformance and Material Certification dated April 27, 2015
 ASME Form NPV-1, Code Data Report for 1 HPNS Globe Valve, dated April 29, 2015

Material Records

CMTR I06248CI for valve body S/N E2203, Heat # 0779-2, May 3, 2011
 CMTR I06249CI for valve bonnet S/N E2202, Heat # E1915-8, December 18, 2012
 CMTR 126666 for bonnet studs, Heat # 900174, Trace Code 4X01, November 1, 2010
 CMTR 127359 for bonnet nuts, Heat # 242828, Trace Code 4Y12, November 2, 2010
 CMTR 285861 for plug stem, S/N E0374, Heat # S83662, Trace No. 38203, November 19, 2010
 CMTR 4123334527 for Body P/N GE44017X052, Heat No. I1159 SN65, February 24, 2012
 CMTR 138299 for Bonnet P/N GE44371X062, S/N AA006034, Heat No. JNRP SN41, June 5, 2014
 CMTR 57163 for Plug Block S/N AA008118, 1-1/2 diameter round bar x 29.1 long Heat No. 12123868-4, dated July 10, 2014
 CMTR 0043362 for Stem S/N AA007927, Heat No. G19148, dated August 29, 2012
 CMTR 299971 for Stud Bolts P/N 1J9582X0252 Heat No. C4A93 Trace Code 04Z1, dated November 21, 2014
 CMTR 298680 for Hex Nuts P/N 1A4452X2302 size 1 1/8-8 UN 2B, heat No. 52186-1VBA, Trace Code 04A5, dated November 3, 2014
 CMTR 138299 for weld wire WT-6H Alloy ERCoCr-A size 1/16 diameter x 36length Heat No. 07-1665, ASME SFA5.21, dated November 2, 2007
 Stody Certificate of Analysis No. 243034 dated May 9, 2013, for weld wire size 1/8 diameter ERCoCr-A Stoodite 6H MOD Lot No. 4AW30B, certified to AWS A5.21
 Keokuk Steel Casting Heat Treat Certificate of Bonnet P/N GE44371X062, dated June 24, 2014
 Carboline Certificate of Conformance No. 1098176-3 dated December 5, 2013, for Carboguard 890N P/N 1M6095X0022

Hydrostatic Test and NDE Records

Hydrostatic Test Report for 2-inch plug valve, S/N E2267, dated January 16, 2013
 Pneumatic Seat Test Report for 2-inch plug valve S/N E2267, dated January 16, 2013
 Production Test Summary Report, CNI Report No. TR-037, Revision 0, dated January 21, 2013
 Liquid Penetrant Examination Report on Body P/N. 35740-08, Heat No. E2203, October 22, 2012
 Liquid Penetrant Examination Report on Bonnet P/N 35740-08, Heat No. E2202, October 23, 2012
 Liquid Penetrant Examination Report on Plug P/N 37194-01N, Heat No. E0371, November 26, 2012
 LTI Ultrasonic Examination Report for Stem material 2-1/2-inch diameter x 23 long round bar, Alloy 718, Heat No. S83662, October 28, 2010
 Ultrasonic Examination Report for Stem material 2-1/2-inch diameter x 51-1/2 long round bar, Alloy 718, Heat No. S83662, October 28, 2010
 Fisher Controls NDE Surface Examination Report, Liquid Penetrant Examination of Bonnet Hardface Backseat S/N AA006034, Heat No. JRP SN41, January 6, 2015
 NDE Surface Examination Report NMR 6701, Liquid Penetrant Examination of Plug/Stem Assembly S/N AA008118, of seating surface dated December 22, 2014
 NDE Surface Examination Report NMR 6751, Liquid Penetrant Examination of Plug/Stem Assembly S/N AA008118, of plug/stem weld dated December 9, 2014
 NDE Surface Examination Report NMR 6601, Liquid Penetrant Examination of Plug/Stem Assembly S/N AA008118, of all accessible finished machine surface dated December 22, 2014
 NDE Surface Examination Report NMR 901, Liquid Penetrant Examination of all accessible finish machine surface of Plug S/N AA008118, Heat No. 12123868-4, October 22, 2014
 NDE Surface Examination Report NMR 501, Liquid Penetrant Examination of all accessible finish machine surface of Stem S/N AA007927, Heat No. G19148, October 14, 2014
 METCO Penetrant Inspection Report dated August 9, 2014, on Fisher Control round NITRONIC bar HT No. G19148 for Stem S/N AA007927
 NDE Surface Examination Report 2401 for Actuator Stem P/N GE57682X052, S/N AA004511, dated November 1, 2014
 NOVA Machine Liquid Penetrant Report 272914-6100 for 1-1/8-8 x 5 studs, Heat C4A93, Trace Code 04Z1, dated October 28, 2014
 NOVA Machine Liquid Penetrant Report 271620-5100 for 1-1/8-8 UN-2B heavy hex nut, Heat 52186-1VBA, Trace Code 04A5, dated October 8, 2014
 Nuclear Paint Report Carbozinc 11 HSN for Yoke, Lower and Upper Casing, dated January 13, 2015
 Valve test report No. 004 -X012149977, for seat leak, pneumatic seat leak and hydro test, dated January 16, 2015
 Valve Operational test report No. 11QN10-FR-02.01, FlowScanner Result Summary Report, for 1 Class 150 HPNS Globe Valve with 667NS2 Size 45A Diaphragm Actuator, Revision B, dated February 26, 2015

Dimensional Inspection Reports

Dimensional Inspection Report for Valve Item No. 35740-08, 2 Plug Valve Assembly, S/N E2267, February 11, 2013
 Minimum Wall Record Plug Valve BodyButtweld End, for Body S/N E2203, September 26, 2012
 Dimensional Inspection Report for Body S/N E2203, October 29, 2012
 Minimum Wall Record Bonnet, for Bonnet S/N E2202, September 26, 2012
 Dimensional Inspection Report for 2 Bonnet S/N E2202, October 30, 2012
 Dimensional Inspection Report for 2 Plug S/N E0371, January 18, 2011

Critical Dimensional Inspection Report Data Sheet 105, for Fisher Valve S/N 0019089917, dated April 2, 2015
 Inspection Test Report for Valve Body P/N GE44017X052, dated February 26, 2014
 Inspection Test Report for Bonnet P/N GE44371X062, S/N AA006034, dated February 24, 2014
 Minimum Wall Thickness Report for Valve Body P/N GE44017X052, S/N AA005064, Heat No. I1159 SN65, December 15, 2014
 Design Reconciliation Review Form for Valve Body casting P/N GE44016X11A, S/N AA005064, Heat No. I1159 SN65, July 9, 2014
 Minimum Wall Thickness Report for Bonnet P/N GE44371X062, S/N AA006034, Heat No. JNRP SN41, December 12, 2014
 Fisher Control Inspection and Test Report (ITR) No. 0987790VOG-ITR-3-3, for Plug block P/N GE45476X032, S/N AA008118, Heat No. 12123868-4, dated October 2, 2014,
 Fisher Controls ITR No. 0987790VOG-ITR-3-12, for Plug/Stem Assembly P/N GE45478X032, S/N AA008118, dated September 10, 2014
 Weld Records
 Fisher Weld Order Record for Bonnet S/N AA006034 with hardface of bonnet seat dated October 16, 2014
 Fisher Weld Order Record for Plug/Stem Assembly S/N AA008118, of welding stem to plug, dated November 17, 2014

Deviation Notices

WEC Procurement Advisory Release (PAR) No. 4500312904-192-0, for CNI Deviation Notice No. 35740-0032, Deviation Notice for Cleaning Procedure CL-1, dated February 11, 2011
 WEC Deviation Notice (DN) No. AP-PV10-008, DN10-006 Contingent Release to Ship Prior to Final Approval of EQ Reports, Revision 1, May 28, 2013
 PAR No. 4500312904-167-0, Deviation Notice for PV10 Datasheet APP-PV10-Z0D-141 Envelope Drawing, VDS141, DN-PV10-008, dated December 5, 2012
 PAR No. 4500312904-154-0, Deviation Notice for Contingent Release, VDS141, DN-PV10-006, dated November 28, 2012
 PAR No. 4500312904-090-0, for CNI Deviation Notice No. 35739-0028, Deviation Notice for Hardened Washers, dated December 20, 2010
 DN PV10-006, Contingent Release to Ship Prior to Final Approval of EQ Reports, October 30, 2012
 DN APP-PV10-GNR-008, Deviation Notice for Contingent Release for Data Sheet 141, Rev. 1, May 25, 2013
 WEC APP-PV14-GNR-005, Deviation Notice for PV14 Cycle Testing, Revision 0, approved on June 2, 2014
 WEC APP-PV14-GNR-006, Deviation Notice for PV14 root pass weld NDE, Revision 0, approved on February 26, 2015
 WEC APP-PV14-GNR-007, Deviation Notice for Contingent Quality Release of PV14 Module Valves, approved on April 2, 2015
 WEC APP-PV14-GNR-013, Deviation Notice for PV14 Coating, Revision 0
 Fisher Document No. 11QN10-DR-02.01, Supplemental Non-Conformance Reconciliation for Code Design Report No. 11QN09-DR-02, Revision B, dated February 9, 2016

Section 1A05

APP-FT01-Z0-001, AP1000 Fuel Transfer Tube, ASME Boiler and Pressure Vessel Code Section III, Subsection NE, Class MC, Revision 3

WEC-Newington Operations, Form N-2 Certificate Holder's Data Report for Identical Nuclear Parts and Appurtenances (transfer tube, flange, test angle, and hatch), Part Serial No. 6046, 5/25/18

Fuel Transfer Tube (WEC Ident. No. 15-0517, Material-No. FT01-V2-531-01-1):

Outokumpu Stainless Steel LLC, CMTR 0288571-01, heat & piece 859405 - 6A, 11/13/14
Bristol Metals LLC, CMTR for 30" dia. X 0.375" min. wall thickness pipe, SA312 TP304/304L, heat/Lot-no. 859405/132291 (WEC ID-No. 15-0517), 01/23/2015

Brimet Radiographic Examination Report 30P-.375-3/4, heat# 859405, actual mat'l thick. 0.423", certified by Level II, 1/15/15

WEC Liquid Penetrant Examination Report NDE-040889, transfer tube (SDCR 11020 Repair), WEC Ident. No. 15-0517, Material-No. FT01-V2-531-01-1, by Level II Inspector, 10/16/15

WEC Radiographic Examination Report NDE-040927, transfer tube joint 1 (SDCR 11020 Repair), WEC Ident. No. 15-0517, 14 film locations, Signed by Level II & III, and ANI, 10/20/2015

Flange (WEC Ident. No. 14-1584, Material-No. FT01-V2-531-01-2S):

Element Materials Technology, CMTR ENE022-07-18-25550-1, SA182 F304L, Heat Number H632, 7-23-14

Energy & Process Corporation Element, CMTR for 38.5" OD X 27.5" ID X 5.5" Thk, SA182 F304L (Qty. 2), heat: H632, 7/30/14

Test Angle (WEC Ident. No. 15-1445, Material-No. B01.250P041):

Energy & Process Corporation Element, CMTR 46621C for 1/4" thick plate, Heat W1J3, Lot (Jacket Fiche) 55403, SA240 Type 304L, 09/18/15

Hatch (WEC Ident. No. 14-1980, Material-No. M3X7 (PC) 1):

Energy & Process Corporation Element, CMTR 43512C for 2" thick X 34" dia. plate, Heat M3X7, Lot (Jacket Fiche) 52202, SA240 Type 304L, 09/26/14

Weld Filler Metals :

ESAB, CMTR 2-49251-00-0-A, SFA-5.22, E308T1-4/308LT1-4, .045" dia, WEC Ident. No. 2152, Lot-No. 15979, 04/13/2010

Arcos, CMTR 114204, SFA-5.9, ER308/308L, .035" dia, WEC Ident. No. 2155, Heat-No. 740400, Lot-No. XT9336, 11/16/2010 Amended

Arcos, CMTR 140798, SFA-5.9, ER308/308L, 1/16" dia, X 36", WEC Ident. No. 2253, Heat-No. 537291, Lot-No. AF0029, 6/5/2014

Weldstar, Certificate of Compliance/Conformance, Arcos, SFA-5.9, ER308/308L, 1/16" dia, X 36", Heat-No. 537291, Lot-No. AF0029, June 5, 2014

Lincoln Electric Company, CMTR 6697050 ES-TADC, SFA-5.9, ER308/308L, 3/32" X 36", Heat-No. 539207, Lot-No. 1212C, 24 Sept 2014

Weld Maps, NDE reports, and Test Reports :

WEC Weld Map No. WM-2412284-01, Rev. 03, Titled "FT01-Fuel Transfer Tube", Reference Drawing APP-FT01-V2-531, 7 pages, 4-27-16

WEC Weld Map No. WM-2412284-10, Rev. 01 Titled "FT01 Fuel Transfer Tube Assembly", Reference Drawing APP-FT01-V2-530, 6 pages, 6-30-16

NDE Report for VT and PT for Assy # A1, Joints 1 thru 11 with reference document Weld Map-2412284-01, accepted by Level II Inspectors 116 and 149, SV3-F01-VQQ-001, pages 1724-1727, 5-9-18

NDE Report for VT and PT for Assy # A1, Joints 1 thru 3 with reference document Weld Map-2412284-10, accepted by Level II Inspector 147, SV3-F01-VQQ-001, page 1734, 5-9-18
 WEC Pneumatic Test Report for Weld Ident. No. 2412284, at 67 psi for 10 min., signed by Level II Inspector 81, 06-28-17
 WEC Hydrostatic Test Report NDE-049205 for Weld Ident. No. 2412284 Assy A1, at 74 psi for 10:36, signed by Level II Inspector 116, 07/11/2017
 WEC Fuel Transfer Tube Functional Testing Test Report WEC Ident. No. Assy A1, signed by Level II Inspector 32, 12-7-17

Section 1A06

SV3-EY01-V0M-100, "Vogtle Unit 3&4 Electrical Penetration Assembly (EPA) Multipurpose Manual: EPA installation and Maintenance Manual", Rev. 1
 SV3-EY01-V0-001, "Vogtle Units 3&4 Electrical Penetration Assembly (EPA) Multipurpose: Medium Voltage Power EPA Drawings", Rev. 1
 SV3-EY02-Z0D-011, "Specification Datasheet for Non-1E Medium Voltage EPA", Rev. 1
 SV3-EY01-Z0D-020, "Specification Datasheet for Class 1E I&C electrical penetration assemblies", Rev. 3

Section 1A07

Drawings

APP-KB36-V0-001, Module 1231-KB-36 PCS Pump/Valve Module Drawing Index, Revision 6
 APP-KB36-V1-401, Module 1231-KB-36 PCS Pump/Valve Module General Outline Equipment List and Notes, Revision 2
 APP-PCS-M6-002, Piping and Instrumentation Diagram Passive Containment Cooling System, Revision 11
 APP-PCS-PLW-10A, Passive Containment Cooling System Auxiliary Building Room12306 Piping in Module 1231-KB-36, Revision 4
 APP-PCS-PLW-10F, Passive Containment Cooling System Auxiliary Building Room12306 Piping in Module 1231-KB-36, Revision 2
 APP-PCS-PLW-10J, Passive Containment Cooling System Auxiliary Building Room12306 Piping in Module 1231-KB-36, Revision 1
 SV0-PV03-V2-109001, AP1000 Manually Operated Gate Valve 4 Class 150 Assembly Drawing APP-PV03-Z0D-109, Revision 1
 SV0-PV03-V2-109002, AP1000 Manually Operated Gate Valve 4 Class 150 Assembly Drawing APP-PV03-Z0D-109, Revision 0

Design Specifications

APP-PL02-Z0-102, AP1000 Class 2, 3 Piping and B31.1 Extensions Design Specification, Revision 4
 APP-PV02-Z0-001, 2 and Smaller Manually Operated Globe and Check Valves, ASME Boiler and Pressure Vessel Code, Section III, Class, 1, 2 and 3, Revision 13
 APP-PV03-Z0-001, Design Specification for 3 and Larger Manually Operated Gate, Stop Check, and Check Valves, ASME Boiler and Pressure Vessel Code, Section III, Class, 1, 2, and 3 for Various Systems, Revision 9

Fabrication Specifications

APP-GW-VLR-002, Technical Requirements of Stainless Steels, Nickel-Base Alloys, Carbon and Low Alloy Steels, and Welding Materials for the AP1000, Revision 2
 APP-GW-VLR-010, AP1000 Supplemental Fabrication and Inspection Requirements, Revision 2

Nonconformance Reports

APP-KB36-GNR-850050, dated February 15, 2017
 APP-KB36-GNR-850051, dated February 15, 20 17
 APP-KB36-GNR-850062, dated January 5, 20 17
 APP-KB36-GNR-850128, dated May 4, 2017
 APP-KB36-GNR-850141, dated June 2, 2017
 SV0-PV03-GNR-002, dated March 20, 2018

Fabrication Records in QADP SV3-PV02-VQQ-004, Valve PCS-V015 (Serial No. SF1107-0025), Revision 3

QR-12-241, Westinghouse Quality Release & Certificates of Conformance, Revision 3
 DN-PV02-VG-006, Quality Assurance (QA) Records Data Package Index, Revision 0
 Form NPV-1 Certificate Holders Data Report for Nuclear Pumps of Valves, Manufactured and certified by Samshin Limited, Manufactured for Westinghouse Electric Company, Valve Serial No. SF1107-0025, dated November 16, 2011
 CMTR-PV02-VG-11-002, ASME SA182-F304L, Heat No. GX-2/1 (Source Material Heat No. A30126), dated August 29, 2011
 CMTR 10511-2240, ASTM A276M 304/304L, Heat No. A30126, dated May 11, 2011
 CMTR-PV02-VG-11-013, ASME SA182-F304L, Heat No. GY-1/1 (Source Material Heat No. S98683), dated August 29, 2011
 CMTR 10511-2240, ASTM A276M 304/304L, Heat No. S98683, dated July 11, 2011
 CMTR-PV02-VG-11-014, ASME SA479-304L, Heat No. HH-1 (Source Material Heat No. S85180), dated August 29, 2011
 CMTR 10511-2240, ASTM A182 F304L, Heat No. S85180, dated June 10, 2019
 CMTR TR-S1001, ASME SFA-5.9 ER308L, Heat No. E63398, dated December 28, 2009
 HTR-5-1107-004, Heat Treatment Record, Heat Nos. GX-2/1 and GY-1/1, dated September 29, 2011
 11-SSV-P502, Liquid Penetrant Examination Report, Heat No. GX-2/1, On Root Pass of Weldments, dated September 1, 2011
 11-SSV-P503, Liquid Penetrant Examination Report, Heat No. GY-1/1, On Root Pass of Weldments, dated September 1, 2011
 11-SSV-P504, Liquid Penetrant Examination Report, Heat No. HH-1, On Root Pass of Weldments, dated September 1, 2011
 11-SSV-P577, Liquid Penetrant Examination Report, Heat No. GX-2/1, On Hardfaced Surface & Adjacent Base Material, dated September 7, 2011
 11-SSV-P578, Liquid Penetrant Examination Report, Heat No. GY-1/1, On Hardfaced Surface & Adjacent Base Material, dated September 6, 2011
 11-SSV-P579, Liquid Penetrant Examination Report, Heat No. HH-1, On Hardfaced Surface & Adjacent Base Material, dated September 7, 2011
 11-SSV-P684, Liquid Penetrant Examination Report, Heat No. GX-2/1 + GY-1/1, On Hardfaced Surface & Adjacent Base Material, dated September 28, 2011
 PTR-PV02-VG-131-01-1, Pressure Test Report, Serial No. SF1107-0025, dated November 1, 2011
 WR-103065-11-21, Welding Record, Body + Bonnet, TS-III-VG-PV02- 131-1, ER308L, Heat No. E63398, dated September 29, 2011
 WVD-VG-006, Welding Verification Documentation, Seal Welding on Body to Bonnet

Fabrication Records in QADP SV3-PV03-VQQ-005, Valve PCS-V005 (Serial No. BK-489), Revision 2

QR-12-2032, Westinghouse Quality Release & Certificates of Conformance, Revision 2

Form NPV-1 Certificate Holders Data Report for Nuclear Pumps of Valves, Manufactured and certified by Flowserve Corporation, Manufactured for Westinghouse Electric Company, Valve Serial No. BK-489, dated September 14, 2012

CMTR M1371/SUP-4, ASME SA351 GR CF3M, Heat No. M1371 Serial No: 2, dated November 12, 2010

CMTR K9904-1, ASME SA 182 F316, Heat No. 251426, dated December 21, 2010

CMTR M1371/SUP-5, ASME SA351 GR CF3M, Heat No. M1371 Serial No: 5, dated November 12, 2010

CMTR 041274999117602, ASME SA-453 Grade 660 Class B, Heat No. 352, dated December 10, 2010

CMTR 041226279117602, ASME SA-194 Grade 8, Heat No. 460, dated December 30, 2010

CMTR TA-1989, ASME SFA 5.4 E308L-16, Heat No. 526226, dated August 12, 2011

CMTR QSC-488, ASME SFA 5.9 Class ER308L, Lot No. D4790R308L, dated January 30, 1985

Weld Process Report for 91176-02, Serial No. M1371-2, Fillet, 308, Lot No. D4790R308L, dated August 22, 2011

Weld Process Report for 91176-02, Serial No. M1371-2, Body Groove Weld, E308L-16, Heat No. 526226, Lot No. 116110, dated August 23, 2011

91176-02, Liquid Penetrant Examination for Serial No. M1371-2, Root Pass, dated August 21, 2011

91176-02, Liquid Penetrant Examination for Serial No. M1371-2, PT Seat Ring to Body Welds, dated August 24, 2011

ADD1956, Liquid Penetrant Examination, Serial No. M1371-2, 4 CL 150 FW Body Casting, dated March 12, 2010

ARD 2389, Radiography Test Report, Serial No. M1371-2, 4 CL 150 FW Body Casting, dated November 29, 2010

ARD 2437, Radiography Test Report, Serial No. M1371-5, 4 CL 150 FW Gate Casting, dated November 29, 2010

36-Q-1129, Assembly & Test Data Sheet, Pressure Seal Gasket No. BK 489, Heat No. M1371-2, Revision 7

Fabrication Records in QADP SV3-PV03-VQQ-006, Valve PCS-V039 (Serial No. BK-560), Revision 2

QR-12-2240, Westinghouse Quality Release & Certificates of Conformance, Revision 2

Form NPV-1 Certificate Holders Data Report for Nuclear Pumps of Valves, Manufactured and certified by Flowserve Corporation, Manufactured for Westinghouse Electric Company, Valve Serial No. BK-560, dated October 19, 2012

CMTR M1459/SUP-1, ASME SA351 GR CF3M, Heat No. M1459 Serial No: 4, dated July 1, 2010

CMTR 285855, ASME SA-240 316, Heat No. E79578, dated November 10, 2010

CMTR K9795-1, ASME SA 182 F316, Heat No. 251426, dated December 21, 2010

CMTR 041268889117617, ASME SA-453 Grade 660 Class B, Heat Code 337, Heat No. 250337 dated December 10, 2010

CMTR 041089229117624, ASME SA-194 Grade 8, Heat No. 028, dated December 29, 2010

CMTR TA-1756, ASME SFA 5.4 E308L-16, Heat No. E91345, dated March 5, 2010

CMTR QSC-488, ASME SFA 5.9 Class ER308L, Lot No. D4790R308L, dated January 30, 1985

Weld Process Report for 91176-17, Serial No. M1459-4, Root Pass, 308L, Lot No. D4790R308L, dated August 8, 2011

Weld Process Report for 91176-17, Serial No. M1459-4, Final Pass, E308L-16, Heat No. L91345, Lot No. 003920, dated August 11, 2011

91176-17, Liquid Penetrant Examination for Serial No. M1459-4, Root Pass, dated August 10, 2011

91176-17, Liquid Penetrant Examination for Serial No. M1459-4, Seat Ring to Body Welds, dated August 21, 2011

ADD2081, Liquid Penetrant Examination, Serial No. M1459-4, 4 CL 150 SCV Body, dated July 1, 2011

ARD 2535, Radiography Test Report, Serial No. M1459-4, 4 CL 150 SCV Body, dated December 30, 2010

36-Q-1129, Assembly & Test Data Sheet, Pressure Seal Gasket No. BK-560, Heat No. M1459-4, Revision 5

Valve Weld Installation Records from CB&I Laurens

Shop Travelers for Sketch numbers: 890700-40.01-00005, 890700-40-01-00045, 890700-40-01-00007

Weld Filler Metal CMTRs for heat numbers: AF9689 (7/30/12), CT9742 (11/16/12), DF0140 (1/30/15), CT9617 (6/15/12)

Welding Procedure AP1000-803 Revisions: 3, 7, & 8

Welding Procedure Qualification records: PRN 070 (6/15/1990), PRN 072 (4/14/1993), PRN 076 (12/11/1991)

Welder Performance Qualification Records for welder IDs: B8 (2/2/15) and B1 (10/6/11)

Liquid Penetrant Test Reports for sketch numbers: 890700-40.01-00005 (2/3/16), 890700-40-01-00045 (1/21/16), 890700-40-01-00007 (1/2/15)

Pipe Welding Records from Aecon

Drawing SV3-KB36-PCS-PLW-03-02X Rev. 2

Weld Data Sheets: SV3-KB36-PCS-PLW-03-X36-W91 Rev. 0, SV3-KB36-PCS-PLW-03-X36-W92 Rev. 0, SV3-KB36-PCS-PLW-03-X36-W93 Rev. 0

CMTRs for weld filler metal heat numbers: 13951629 (8/5/15), 13684216 (6/17/15), 1256K (7/5/16)

Welding Procedure: 88-200-N28, Rev. 2

Welding Procedure Qualification Records: 88-20-715 (3/11/15), 88-200-712 (1/6/15)

Welder Qualification Records for welder ID 2 (8/10/16)

PT reports: PT-X36-009 (3/3/17), PT-X36-010 (3/9/17), PT-X36-015 (3/14/17)

VT Reports: VT-X36-118 (3/2/17), VT-X36-120 (3/3/17), VT-X36-138 (3/9/17), VT-X36-136 (3/14/17), VT-X36-117 (3/2/17), VT-X36-128 (3/9/17)

Pipe Spool SV3-PCS-PLW-10A-1A

Sketch No. 890700-40-01-00045, Line No. PCS-PL-L051 and L065, Pipe Spool Serial No. SV3-PCS-PLW-10A-1B and -1C, Heat No. F119136, Revision 1A

Form NPP-1, Certificate Holders Data Report for Fabricated Nuclear Piping Assemblies, Fabricated and certified by CB&I Laurens, Fabricated for CB&I Stone and Webster, Serial No. SV3-PCS-PLW-10A-1B, dated April 13, 2016

Form NPP-1, Certificate Holders Data Report for Fabricated Nuclear Piping Assemblies, Fabricated and certified by CB&I Laurens, Fabricated for CB&I Stone and Webster, Serial No. SV3-PCS-PLW-10A-1C, dated April 13, 2016

Form N-5, Certificate Holders Data Report for Installation or Shop Assembly of Nuclear Power Plant Components, Supports, and Appurtenances, Installed and certified by CB&I Laurens, Installed for CB&I Stone and Webster, Serial No. SV3-PCS-PLW-10A-1A (includes Piping Subassembly SV3-PCS-PLW-10A-1B & -1C and Valve BK-560), dated April 13, 2016

CMTR 0YYU5536, ASME SA-312 GR. TP304L, Heat No. F119136, dated January 11, 2012

Liquid Penetrant Examination Report for APP-PCS-PLW-10A, dated January 21, 2016

Pipe Spool SV3-PCS-PLW-10F-1

Sketch No. 890700-40-01-00005, Line No. PCS-PL-L007 and L050, Pipe Spool Serial No. SV3-PCS-PLW-10F-1, Heat No. F12A044, Revision 3A

Form NPP-1, Certificate Holders Data Report for Fabricated Nuclear Piping Assemblies, Fabricated and certified by CB&I Laurens, Fabricated for CB&I Stone and Webster, Serial No. SV3-PCS-PLW-10F-1A, dated February 19, 2016

Form NPP-1, Certificate Holders Data Report for Fabricated Nuclear Piping Assemblies, Fabricated and certified by CB&I Laurens, Fabricated for CB&I Stone and Webster, Serial No. SV3-PCS-PLW-10F-1B, dated February 19, 2016

Form N-5, Certificate Holders Data Report for Installation or Shop Assembly of Nuclear Power Plant Components, Supports, and Appurtenances, Installed and certified by CB&I Laurens, Installed for CB&I Stone and Webster, Serial No. SV3-PCS-PLW-10F-1 (includes Piping Subassembly SV3-PCS-PLW-10F-1A & -1B and Valve SF1107-0025), dated February 19, 2016

CMTR 0YYU5539R1, ASME SA-312 GR. TP304L, Heat No. F119136, dated December 9, 2011
Liquid Penetrant Examination Report for APP-PCS-PLW-10F, dated January 21, 2016

Pipe Spool SV3-PCS-PLW-10J-1A

Sketch No. 890700-40-01-00007, Line No. PCS-PL-L048, Pipe Spool Serial No. SV3-PCS-PLW-10J-1B, Heat No. F119139, Revision 1A

Form NPP-1, Certificate Holders Data Report for Fabricated Nuclear Piping Assemblies, Fabricated and certified by CB&I Laurens, Fabricated for CB&I Stone and Webster, Serial No. SV3-PCS-PLW-10J-1B, dated January 28, 2016

Form N-5, Certificate Holders Data Report for Installation or Shop Assembly of Nuclear Power Plant Components, Supports, and Appurtenances, Installed and certified by CB&I Laurens, Installed for CB&I Stone and Webster, Serial No. SV3-PCS-PLW-10J-1A (includes Piping Subassembly SV3-PCS-PLW-10J-1B and Valve BK-489), dated January 28, 2016

CMTR 0YYU5584, ASME SA-312 GR. TP304L, Heat No. F119139, April 9, 2012

Liquid Penetrant Examination Report for APP-PCS-PLW-10J, dated January 12, 2015

Section 1A08

APP-MT01-Z0-100, Design Specification for the AP1000 Core Makeup Tank for System PXS, Revision 10

APP-MT01-VHM-001, AP1000 Core Makeup Tank Technical Manual: Instructions for Receipt Inspection, Storage and Assembly, Revision 0

APP-MT01-VNM-001, AP1000 Core Makeup Tank Technical Manual: Instructions for Operation and Maintenance, Revision 0

SV3-MT01-MHH-005, Rigging Plan, Lifting and Installing Unit 3 Core Make-up Tanks, Revision 0

Section 1A09Drawings and Procedures

Drawing APP-PXS-PLW-022, "Passive Core Cooling System Containment Building Room 11207 Common Injection Header To DVI-B", Revision 3

Drawing APP-PXS-PLW-025, "Passive Core Cooling System Containment Building Room 11204/11207 DVI-B To Reactor Vessel", Revision 5

CB&I Inspection Plan F-S562-006, "Pipe Welding/Brazing ASME B31.3, Power Piping- Visual Weld Inspection (Condenser, Internal Pipe Welds)," Revision 2, Change 0, dated August 17, 2015

MISTRAS procedure 100-QC-005.2, "Qualification and Certification of Nondestructive Test Personnel," Revision 4.1

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Weld and NDE Records

Weld Record for field weld SV3-PXS-PLW-025-1 on work package SV3-PXS-POW-ME3238, connecting a NPS 8 SCH. S160 pipe of material ASME SA312 Gr. Type 316LN, traceable Serial No. SV3-PXS-PLW-025-1 with 90 LR Elbow NPS 8 SCH S-160, of material ASME SA403 Gr. WP316LN, traceable to serial No. SV3-PXS-PLW-022-2

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Certificate of Compliance 4931885 dated November 28, 2011, for weld wire ES-ZBER 3/32 x 18-inch Lincoln ER316/316L ASME SFA 5.9, Lot No. 1030C

CMTR 7341122 for weld wire ES-ZBER 1/8 x 18-inch Lincoln ER316/316L ASME SFA 5.01, Lot No. 1243V, dated August 31, 2005

Magnaflux Certification for Spotcheck Cleaner, SKC-S, Batch No. 18A23K, dated February 6, 2018

Magnaflux Certification for Spotcheck Developer, SKD-S2, Batch No. 17H08K, dated August 16, 2017

Magnaflux Certification for Spotcheck Penetrant, SKL-SP2, Lot No. 14C08K, dated April 4, 2014

Measuring and Test Equipment Records

Certificate of Calibration No. 2334906, dated May 4, 2018, for Magnaflux White Light Meter Serial No. 110703174 calibrated May 11, 2018

MISTRAS Flashlight Verification Log for White Maglite Model Serial No. FL7 performed on August 9, 2018

WECTEC Calibration Checklist No. V-AP-0186-2, for Digital Fluke Thermometer ID No. V-AP-0186, calibrated on August 17, 2017

WECTEC Calibration Checklist No. V-AP-0196-2, for Digital Fluke Thermometer ID No. V-AP-0196, calibrated on October 10, 2017

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 SV3-ME02-Z0M-101, AP1000 PRHR HX Standard Technical Manual, Revision 2
 SV3-ME02-MHH-003, Rigging Plan - Upending and Installing Unit 3 PRHR Heat Exchanger, Revision 0

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Construction Isometric Drawing SV3-PXS-PLW-042-R0, Passive Core Cooling System Containment Building Room 11300 PRHR Return Line to SG01, Revision 0
 Stone & Webster Welding Data Sheet (WDS) SV3-PXS-PLW-042-13 from Work Package SV3-PXS-P0W-800001, 4/20/18
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26139-000-4MP-T81C-N3201, "Construction Survey," Revision 0
 SV3-PXS-MEK-891997, "As-Built Elevation Comparison of PRHR Heat Exchanger Upper Channel Head Centerline to RCS Hot Leg Centerline," Revision 1
 SV3-ME02-V2-001-R0, "AP1000 Passive Residual Heat Removal Heat Exchanger Assembly Drawing," Revision 3
 SV3-RCS-M6K-892061, "Vogle Unit 3 RCS Hot and Cold Leg As-Built Centerline Elevations," Revision 2
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 NCSP03-03, "Construction Engineering", Revision 01.04
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SV3-PXS-FSK-800186, "As-Built Hx Outlet Lines Elevation Comparison to PRHR HX Lower Channel Head Top Inside Surface Elevation", Rev. 0
 SV3-ME02-V2-001, "AP1000 Passive Residual Heat Removal Heat Exchanger Assembly Drawing", Rev.0
 SV3-PXS-M6-002, "Piping and Instrumentation Diagram Passive Core Cooling System", Rev. 7
 SV3-PXS-PLW-042, "Passive Core Cooling System Containment Building Room 11200 PRHR Return Line to SG 01", Rev. 1
 SV3-PXS-PLW-041, "Passive Core Cooling System Containment Building Room 11200 PRHR Return Line to SG 01", Rev. 2
 SV3-RCS-PLW-04A, "Reactor Coolant System Containment Building Rooms 11300/11303 PRHR Return Line to SG 01", Rev. 2
 SV3-RCS-PLW-04B, "Reactor Coolant System Containment Building Room 11300 PRHR Return Line to SG 01", Rev. 2
 SWR 1041465, Survey of PRHR HX and piping, Dated 8-29-18
 SV3-ME02-V2-002, "Passive Residual Heat Removal heat exchanger Header Assembly", Rev. 0
 Qualifications for ITAAC field Engineer
 SV0-GQ-FEX-001, "Training Matrix Guidance," Revision 10
 SV3-PL02-Z0-001, "Piping Class Sheets and Standards Details", Rev. 6

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SV3-PXS-MTK-892047, "CMTs Bottom Inside Tank Surface Comparison to DVI Nozzle Centerline Elevation", Rev. 2
 SV3-PXS-MTK-892046, "As-Built Field Measurement of PXS-MT-02A", Rev. 0
 SV3-PXS-MTK-892045, "As-Built Field Measurement of PXS-MT-02B", Rev. 0
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 SWR-1040605, Survey of Core Makeup Tank manway elevation, dated 9/7/18

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SV3-DB01-V8M-001-R0, "AP1000 Class 1E 250 VDC Battery Assembly Drawings: Instruction for Assembling 1E Racks", Revision 0
 SV3-1211-CE-001-R3, "Auxiliary Building Area 1 Battery Racks Embedment Plate Locations Room 12104 Plan at EI 66'6" ", Revision 7
 SV3-1211-CE-002-R3, "Auxiliary Building Area 1 Battery Racks Embedment Plate Locations Room 12105 Plan at EL 66'6" ", Revision 7
 SV3-1212-CE-002-R3, "Auxiliary Building Area 2 Battery Racks Embedment Plate Locations Room 12102 Plan at EL 66'6" ", Revision 7
 SV3-1212-CE-001-R3, "Auxiliary Building Area 2 Battery Racks Embedment Plate Locations Room 12101 Plan at EL 66'6" ", Revision 7
 SV3-1212-CE-003-R3, "Auxiliary Building Area 2 Battery Racks Embedment Plate Locations Room 12103 Plan at EL 66'6" ", Revision 7
 SV3-1212-CE-002-R3, "Auxiliary Building Area 2 Battery Racks Embedment Plate Locations Room 12102 Plan at EL 66'6" ", Revision 7
 SV3-1221-CE-001-R3, "Auxiliary Building Area 1 Battery Racks Embedment Plate Locations Room 12204 Plan at EI 82'6" ", Revision 3

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SV3-1140-SPW-800000
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 SV3-1140-SPW-800003

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APP-SS01-Z0-001, Shop Fabrication of Structural Steel Safety Class C, Seismic Category I, Rev. 5
 SV3-SS01-Z0-002, Erection of Structural steel, Safety Class C, Seismic Category I, Rev. 4

Drawings

SV3-1140-SPK-891744, SPL18 Sequence 3 Connections, Sheet 1 of 2, Rev. 0
 SV3-1140-SPK-891744, SPL18 Sequence 3 Connections, Sheet 2 of 2, Rev. 0
 SV3-1140-SPK-870553, SPL18 Installation Sequence 3 Weld Map, Sheet 1 of 6, Rev. 3
 SV3-1140-SPK-870553, SPL18 Installation Sequence 3 Weld Map, Sheet 5 of 6, Rev. 3
 SV3-1140-SS-001, Containment SPL 18 Grating Floor Maintenance Floor Mezzanine Room (11400) Global Plan View, Rev. 2

SV3-1140-SS-006, Containment SPL 18 Grating Floor Plan and ISO View SPL 18_02, Rev. 1

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SV0-1100-GEF-000037, Supplemental Specification for Implementing DuraSquirt DTI's, Rev.0

Weld Data Sheets (WDS)

870553-069

870553-071

Weld Procedure Specifications

WPS2-1.1F01, FCAW of Carbon and Low Alloy Steels, AWS D1.1 2000 Groups I and II materials, Rev. 3

WPS2-1.1M01, GMAW of Carbon and Low Alloy Steels, AWS D1.1 2000 Groups I and II materials, Rev. 2

WPS2-1.1S01, SMAW of Carbon and Low Alloy Steels, AWS D1.1 2000 Groups I and II materials, Rev. 4

Procedures

NCSP 03-40, Structural Steel Erection, Rev. 04.00

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Commercial Grade Dedication Document

132175-SS01.00-404-012-00203

Inspection Records

26139-SV3-IR-SS-00033A, Date: 8/29/2018

Calibration Records

V-4AM-0011-3, Tension Tester High Strength Bolting, Date: 05/29/2018

Pre-Installation Qualification of Fastener Assemblies Records

Direct Tension Indicators (DTI's)

Bolts: ASTM A490 (Diameter & Length), Lot No. 40802

Nuts: ASTM A563, (Diameter) ", Lot No. 17810-497463

Washers: F436, Lot No. 201253

DuraSquirt Washers DTI's: ASTM F959, (Diameter) ", Lot No. A55

Turn of the Nut Method

Bolts: ASTM A490, (Diameter & Length) 1 1/8" x 4 ", Lot No. 40312

Nuts: ASTM A563, (Diameter) 1 1/8", Lot No. 21215-155498

Washers: ASTM F436, 1 1/8" (Diameter) 1 1/8", Lot No. 301737

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APP-SS01-Z0-001, "Shop Fabrication of Structural Steel, Westinghouse Safety Class C, Seismic Category I," Rev. 5

APP-1208-Z0-001, "Specification for the Fabrication and Field Erection of the SC Panels and the Conical Roof Steel Structure for the AP 1000 Shield Building," Rev. 2

APP-CR01-Z0-010, "Specification for Supply and Installation of Mechanical Splices for Reinforcing Steel," Rev. 8

Drawings

SV3-1208-SC-100, Shield Building Steel Wall Panels EL. 100'-0" to EL. 248'-6" General Notes, Rev. 3

SV3-1208-SC-904, Shield Building Steel Wall Panels EL. 100'-0" to EL. 248'-6" Typical Details (Sheet 4), Rev. 2

SV3-1208-SC-231, Shield Building Steel Wall Panels EL. 100'-0" to EL. 248'-6" Connection Panel Group 23, Rev. 3

SV3-1208-SC-232, Shield Building Steel Wall Panels EL. 100'-0" to EL. 248'-6" Connection Panel Group 23 Details 1 Rev. 2

SV3-1208-SC-907, Shield Building Steel Wall Panels EL. 100'-0" to EL. 248'-6" Typical Details (Sheet 7), Rev. 2

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Storage Requisition Report

SR No. 132175-SRR-18-05612, Date: 28/6/2018

Purchase Order

J132175-J400A-00, Rev. 85

Inspection Records

IR No. 26139-SV3-IR-SS-00038, "Structural Steel Inspection Record," Date: 7/20/2018

ID No. SV3-1208-CRW-800004-001, "Verification of Installation of Nuts & Washers for Shield Wall Panel 01C," Date: 7/20/2018

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Specifications

Specification SV3-CC01-Z0-026, Safety Related Mixing and Delivering Concrete, Revision 7

Specification SV3-CC01-Z0-027, Safety Related Concrete Testing Services, Revision 6

Specification SV3-CC01-Z0-031, Safety Related Placing Concrete and Reinforcing Steel, Rev. 8.

Quality Control Manual

PNQCM, Project Nuclear Quality Control Manual, Rev. 0.

Procedure

APP-GW-GAP-428, Nonconformance and Disposition Report, Rev. 15

Work Package

SV3-1208-CCW-800004

Concrete Pour Card

Concrete Placement/Order Pour Card, Pour Number 4133, "U3 Shield Wall RC12 Placement from Elev. 139'4" to 149'6"," 6/29/18

Batch Tickets

76442
 76444
 76445
 76446
 76447
 76448
 76449
 76450
 76451
 76452
 76453
 76454
 76455
 76456

Inspection Records

26139-SV3-IR-C0-00099, Concrete Pre-Placement Inspection Record, Date: 6/28/18
 26139-SV3-IR-C0-00100, Construction Placement Inspection Record, Date: 7/17/18

Condition Reports

50000888, Shield Wall Placement RC-12, Post Placement Condition, Date: 7/12/18
 50000001, 139-2 Cylindrical Wall RC-12, Rebar Fabrication & Installation, Date: 7/18/18
 50000002, 139-2 - Cylindrical Wall RC-12, Rebar Fabrication & Installation, Date: 7/18/18
 70000007, 139-2 - Cylindrical Wall RC-12, Rebar Fabrication & Installation, date: 8/1/18

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SV3-CC01-GNR-000506, Shield Building Azimuth Man Door Honeycomb and Voids, Rev. 0
 SV3-CC01-GNR-000501, 139-2 - Cylindrical Wall RC-12, Rebar Fabrication & Installation, Rev.
 0

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Break Bearing Surface 29130, due 9/1/18
 Micrometer/Caliper 4073, due 10/20/18
 Break Bearing Surface 542, due 10/20/18
 Pad Cap Retainer 4323, due 10/26/18
 Pad Cap Retainer 4322, due 10/26/18
 Straight Edge MACTEC LID #3255, due 10/28/18
 Forney Test Pilot SN-11064, due 2/6/19
 Compression Testing Machine V-T-0002A, due 8/1/19

Concrete Test Records

AMEC Concrete / Grout Card Set ID 2018VEGP7839, 7/27/18
 AMEC Concrete / Grout Card Set ID 2018VEGP7840, 7/27/18
 Concrete/Grout Delivery Ticket #76448, Pour #4133, 06/29/2018
 Concrete/Grout Delivery Ticket #76456, Pour #4133, 06/29/2018
 AMEC Conventional Concrete Testing Log, Pour #4133, 06/29/2018

Miscellaneous

Concrete Specimen Initial Curing Log, Pour #4133, 7/27/17
 Curing Box Logs, Pour #4133, 6/29/18 to 6/30/18

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WEC APP-1208-Z0-001, Specification for the Fabrication and Field Erection of the SC Panels and the Conical Roof Steel Structure for the AP1000 Shield Building, Revision 2

CB&I Weld Traveler U3-01A/01B Vertical Inside/Outside Seam for Panels 01A to 01B, 11/13/17

CB&I Vertical Seam Peaking Dimensional Checks, Dimensional Inspection Report U3-020, Traveler U3 01A/01B I/O Vert., Seq. No. 11, by MF, 12-9-17

CB&I Report of Visual Examination, Report No. U3-040, Traveler U3 01A/01B Vert I/O, Seq. No. 5A, 5B, Signed by MF Level II, 12/9/17

CB&I Magnetic Particle Examination, Report No. U3-047, Traveler U3 01A/01B Vert I/O, Seq. No. 5E, Inside and Outside Temporary Attachment (TA), by MF Level II, 12-9-2017

CB&I Magnetic Particle Examination, Report No. U3-053, Traveler U3 01A/01B Vert I/O, Seq. No. 9, Inside and Outside Backup Bar (B.U.B.) removal areas I/O, by MF Level II, 12-9-2017

CB&I AWS Report of Ultrasonic Testing of Welds, Report No. U3-056, UT on 01A/01B Vert Outside, by RTC Level II, 12/13/2017

CB&I AWS Report of Ultrasonic Testing of Welds, Report No. U3-059, UT on 01A/01B Vert Inside, by NL Level II, 12/12/2017

CB&I Weld Traveler U3-01C/01D Vertical Inside/Outside Seam for Panels 01C to 01D, 5/8/18

CB&I Vertical Seam Peaking Dimensional Checks, Dimensional Inspection Report D0064, Traveler U3 01C/01D Vert. I/O, Seq. No. 26, by AJG, 6-1-18

CB&I Magnetic Particle Examination, Report No. 231122-003-IN-RP-M0242, Traveler U3 01C/01D Vert I/O, Seq. No. 14 & 24, MT of Vert TA and BUB Removal Areas, by MF Level II, 5/31/2018

CB&I AWS Report of Ultrasonic Testing of Welds, Report No. 231122-003-IN-RP-U0242, UT on 01C/01D Vert Inside, by NL Level II, 06/01/2018

CB&I AWS Report of Ultrasonic Testing of Welds, Report No. 231122-003-IN-RP-U0243, UT on 01C/01D Vert Outside, by NL Level II, 06/01/2018

CB&I WPS 181816-000-WS-SP-E8018, Rev. 2, 03/27/2018 (with supporting PQR 13408 with Cv at -70F, June 3, 2015)

CB&I WPS 181816-000-WS-SP-E71T1, Rev. 1, 04/23/2018 (with supporting PQR 13404 with Cv at -70F, February 3, 2015)

CB&I Services Welder Performance Qualification (WPQ) for welders DGC7650 (4), DRP0601 (2), JAL0807 (2), JAW6216 (4), JBW2054 (1), and TRW7177 (2)

CB&I Master Welder Qualification List - Vogtle Unit 3 and 4, ASME Section IX, 7/3/2018

CB&I Master Welder Qualification List - Vogtle Units 3 and 4, AWS D1.1, 7/3/2018

Lincoln Electric CMTR 9108375 ES-RBCF for 1/8" dia. Excalibur 8018-C1 MR 50EO, Lot-No. 1332R for SMAW with Cv at -70F, 17 Mar. 2018

Lincoln Electric CMTR 6339162 ES-RBGA for 0.045" dia. Outershield 71M 25SP (VFB), Lot-No. 1186B for FCAW with Cv at -70F, 26 Mar. 2014

Lincoln Electric CMTR 9108375 ES-RBGA for 0.045" dia. Outershield 71M 25SP, Lot-No. 1329B for FCAW with Cv at -70F, 18 Jan. 2018

WEC Nonconformance and Disposition Report (N&D) SV3-1208-GNR-000099, Rev. 0, "SV3 01C to 01D fit-up CBIS 231122-003-QA-NC-0026", 05/22/2018

NCR 231122-003-QA-NC-00026, Hold Tag. 39, Unit 3 Vert Fit-up 01C Panel and 01D Panel, 6/7/18

CB&I Weld Traveler R/T U3-01C/D Tie Bar (231122-003-QA-TRV-01036), 5/29/18

CB&I Magnetic Particle Examination, Report No. 231122-003-IN-RP-M0241, Traveler U3 01C/01D Tie Bar, Seq. No. 7, MT 10% of final weld on a tie bar splice plate, by MF Level II, 6/1/2018

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SV3-1208-Z0-001, Specification for the fabrication and erection of the Steel Composite Panels for the AP1000 Shield Building, Rev. 0

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26139-000-4MP-T81C-N3701, Welding Program, Rev. 0

181816-000-WS-SP-45001, General Welding Procedure Specification for AWS D1.1, AWS D1.4 Qualified WPSs, Rev. 1

CMS-720-03-PR-09654, Preheat/Interpass Temperature for ANSI/AISC N690 Projects, Rev. 0

CMS-720-03-PR-09604, Monitoring Welding Parameters for ANSI/AISC N690 Projects, Rev. 0

181816-000-WS-PR-45054, Ultrasonic Examination of Statically Loaded Nontubular Connections-AWS D1.1 Shield Building Work. Rev. 2D

Drawings

SV3-1208-SC-101, Shield Building Steel Wall Panels EL. 100-0 to EL. 248-6, Rev. 4

SV3-1208-SC-029, Shield Building Steel Wall Panels EL. 100-0 to EL. 248-6, Rev. 0

SV3-1208-SC-906, Shield Building Steel Wall Panels EL. 100-0 to EL. 248-6, Rev. 5

SV3-1208-SCK-CV6886, Shield Building Unit 3 Weld Details, Sheet 1 of 4, Rev. 2

SV3-1208-SCK-CV6886, Shield Building Unit 3 Weld Details, Sheet 2 of 4, Rev. 2

SV3-1208-SCK-CV6886, Shield Building Unit 3 Weld Details, Sheet 3 of 4, Rev. 2

SV3-1208-SCK-CV6886, Shield Building Unit 3 Weld Details, Sheet 4 of 4, Rev. 2

SV3-1208-SCK-CV8647, Unit 3 Shield Wall Weld Map for Course 7, Rev. 1

Pre-Heat Interpass Monitor Logs

07B-07C Vert I/O, Date: 08/07/18

06/07/01 I/O Horiz, Date: 08/07/18

07F/07G Vert I/O, Date: 08/07/18

07A/07B Vert I/O, Date: 08/07/18

06/07 Horiz I/O, Date: 08/07/18

07B/07C Verti I/O, Date: 08/07/18

Daily Welding Material Distribution Log

07B/07C, Vertical, Outside, Sequence 5A, Date: 08/07/18

07B/07C, Vertical, Inside, Sequence 5B, Date: 08/07/18

07F/01F/06G, Horizontal, Inside, Sequence 3A+3C, Date: 08/07/18

07F/01F/06G, Horizontal, Outside, Sequence 3A+3C, Date: 08/07/18

07A/07B Vertical Inside, Date: 08/06/18

07A/07B Vertical Outside Sequence 5A, Date: 08/06/18

07B/01B/01C, Horizontal, Sequence 3C, Date 08/06/18

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181816-000-WS-SP-A8018, Shield Wall, Rev. 0B

PQR 13411W

PQR 13499W

PQR 13410W

PQR 13500W

PQR 13412W

PQR 13501W

181816-000-WS-SP-E71T1, Shield Wall, Rev. 0J

PQR 13404

PQR 13869
PQR 13863

Traveler Document

231122-003QA-TRV-07006, Weld Vertical Seam for Panels U 07A/07B I/O, Date: 7/24/18
231122-003QA-TRV-07041, Weld Horizontal Seam for Panels 07D and 01D/01E, Date: 8/24/18
231122-003-QA-TRV-07041, Weld Horizontal Seams for Panels U3 07D & 01D/01E, Date:
8/22/18

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231122-003-IN-RP-U0283, Ultrasonic Test on Horizontal Weld on Panels 07D and 01D/01E
231122-003-IN-RP-U0287, Ultrasonic Test on Horizontal Weld on Panels 07D and 01D/01E
231122-003-IN-RP-U0288, Ultrasonic Test on Horizontal Weld on Panels 07D and 01D/01E
231122-003-IN-RP-U0293, Ultrasonic Test on Horizontal Weld on Panels 07D/07E and 01E
231122-003-IN-RP-U0295, Ultrasonic Test on Horizontal Weld on Panels 07D/and 01D/01E
231122-003-IN-RP-U0297, Ultrasonic Test on Horizontal Weld on Panels 07C and 01C/01D

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APP-1208-GEF-027, Shield Building Panel Connection Components Corrections &
Clarifications, Rev. 0
APP-1208-GEF-054, Clarification of Weld Detail between 0.75" and 1", Rev. 0
APP-1208-GEF-069, Shield Building Panel Edge Weld Transition between inch and 1 inch
plates, Rev. 0
APP-1208-GEF-078, Shield Building Joint Callout Clarification, Rev. 0
APP-1208-GEF-099, Shield Building Q Wall Plate Location Clarification and Panel Weld
Clarification, Rev. 0
APP-1208-GEF-123, Shield Building D2L Subsurface Fitting Allowance, Rev. 0
APP-1208-GEF-850037, Panel 27 Bevel @ EL. 106'-6", Rev. 0

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Design Specifications

SV3-CC01-Z0-031, Safety Related Placing Concrete and Reinforcing Steel, Rev. 8
SV3-CC01-Z0-026, "Safety Related Mixing and Delivering Concrete," Rev. 7
SV3-CC01-Z0-027, "Safety Related Concrete Testing Services," Rev. 6

Drawings

SV3-1242-CR-204, "Auxiliary Building Concrete Outline Area 2 Concrete Reinforcement Floor
El. 117-6 Plan", Revision 4
SV3-1200-CE-998-R2, "Standard Headed Embedment Plates G1, G2, G3 and Non0standard
Plates X1, X2, NSDWA-122 & NSDWA-123", Rev. 2
SV3-1200-CE-999-R0, "Auxiliary Building Non-Standard Embedment Plates 4P-5, 4P-51,
DEA1, NSHA-069, NSDWA-119, NSHA-070, NSTB-001/002/003/004, NSHA-070, NSTB-
001/002/003/004, NSHA-048, NSHA-049, NSNI & NSN3", Rev. 0,
SV3-1200-CE-988-R0, "Standard Headed Anchor Embedment Plates J1, J2, J3, J4", Rev. 0
SV3-1200-CE-992-R1, "Auxiliary Building Non-Standard Embedment plates NSP-05, NSP-06,
NSP-07, NSP-09, 4P-8a and 4P-5", Rev. 3
SV3-CE01-CE-001, "Standard Embedment Plates Headed Anchor (HA) Type (Sheet 1)", Rev. 6
SV3-1242-CE-008-R2, "Auxiliary Building Area 2 Main Control Room Raised Floor Support
Embed Plate Locations RM 12401 Plan EL 1176 Sheet 3 of 6", Rev. 4

SV3-1242-CEX-008-R2, "Auxiliary Building Area 2 Main Control Room Raised Floor Support Embed Plate Index RM 12401 Plan EL 1176 Sheet 3 of 6", Rev. 4
 SV3-1242-CE-009-R2, "Auxiliary Building Area 2 Main Control Room Raised Floor Support Embed Plate Locations RM 12401 Plan EL 1176 Sheet 4 of 6", Rev. 3
 SV3-1242-CEX-009-R2, "Auxiliary Building Area 2 Main Control Room Raised Floor Support Embed Plate Index RM 12401 Plan EL 1176 Sheet 4 of 6", Rev. 3
 SV3-1242-CE-010-R2, "Auxiliary Building Area 2 Main Control Room Raised Floor Support Embed Plate Locations RM 12401 Plan EL 1176 Sheet 5 of 6", Rev. 3
 SV3-1242-CEX-010-R2, "Auxiliary Building Area 2 Main Control Room Raised Floor Support Embed Plate Index RM 12401 Plan EL 1176 Sheet 5 of 6", Rev. 3
 SV3-1242-CE-011-R2, "Auxiliary Building Area 2 Main Control Room Raised Floor Support Embed Plate Locations RM 12401 Plan EL 1176 Sheet 6 of 6", Rev. 4
 SV3-1242-CEX-011-R2, "Auxiliary Building Area 2 Main Control Room Raised Floor Support Embed Plate Index RM 12401 Plan EL 1176 Sheet 6 of 6", Rev. 4

Engineering and Design Coordination Reports (E&DCRs)

APP-1200-GEF-909, Changes to Finned Floor Bottom Dowel Reinforcement, Rev. 0
 SV3-CE01-GEF-000091, "Sub-Divide of MCR Floor Embed Plates", Rev. 0
 SV0-CC01-GEF-000451, Air Entrainment on Concrete Mixes for Indoor Members, Rev. 0
 SV0-CC01-GEF-000399, ASTM C138 Acceptance Criteria, Rev. 0

Calculation

CALC-VMD-026, Mix M-Test Results of Laboratory Mix Trials, Rev. 1

Concrete Pour Card

4246, U3 North Auxiliary Building Slab Floor at EL. 117'-6", Date 8/17/18

Batch Tickets

76824
 76831
 76840

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Specification SV3-CC01-Z0-026, Safety Related Mixing and Delivering Concrete, Revision 7
 Specification SV3-CC01-Z0-027, Safety Related Concrete Testing Services, Revision 6
 Specification SV3-CC01-Z0-031, Safety Related Placing Concrete and Reinforcing Steel, Revision 8

Calibration records

Break Bearing Surface 29130, due 9/1/18
 Micrometer/Caliper 4073, due 10/20/18
 Break Bearing Surface 542, due 10/20/18
 Pad Cap Retainer 4323, due 10/26/18
 Pad Cap Retainer 4322, due 10/26/18
 Straight Edge MACTEC LID #3255, due 10/28/18
 Forney Test Pilot SN-11064, due 2/6/19
 Compression Testing Machine V-T-0002A, due 8/1/19

Concrete Test Records

AMEC Concrete / Grout Card Set ID 2018SCC0956, 7/27/18
 AMEC Concrete / Grout Card Set ID 2018SCC0957, 7/27/18
 Concrete/Grout Delivery Ticket #49297, Pour #4106, 06/29/2018
 Concrete/Grout Delivery Ticket #49301, Pour #4106, 06/29/2018
 AMEC SCC Testing Log, Pour #4106, 06/29/2018

Miscellaneous

Concrete Placement/Order Pour Card, Pour Number 4106, "U3 North Auxiliary Building Wall Placement #116 Wall 11 Critical Section elevation 115'6" and 117'6" to 135'3"," 6/29/18
 Concrete Specimen Initial Curing Log, Pour #4106 7/27/17
 Curing Box Logs, Pour #4106, 6/29/18 to 6/30/18
 Work Package SV3-1240-CCW-800000

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SV3-CC01-Z0-031, "Safety Related Placing Concrete and Reinforcing Steel," Rev. 8
 SV3-CC01-Z0-026, "Safety Related Mixing and Delivering Concrete," Rev. 7
 SV3-CC01-Z0-027, "Safety Related Concrete Testing Services," Rev. 6

Procedure

APP-GW-GAP-428, "Non-Conformance and Disposition Report," Rev. 15

Drawings

SV3-1200-CR-950, "Aux Building Areas 5 & 6 Concrete Reinforcement Wall 1 Elevation", Rev. 8
 SV3-1230-CR-950, "Aux Building Areas 5 & 6 Concrete Reinforcement Wall 1 Elevation", Rev. 6
 SV3-1240-CR-950, "Aux Building Areas 5 & 6 Concrete Reinforcement Wall 1 Sections and Details EL. 117'-6""", Rev. 4
 SV3-0000-C9-002A, AP1000 General Notes, Rev. 2
 SV3-0000-C9-002A, AP1000 Concrete General Notes, Rev. 2

E&DCRs

SV3-CR01-GEF-000379, "Hold on Formwork Installation for East Portion of Wall 1 between EL. 117'-6" and EL. 135'-3", Rev. 1
 SV0-CR01-GEF-001092, "Reinforcing for Pipe Penetrations, EL. 119'-0", 1 Line Wall, Rev. 0
 SV3-CR01-GEF-000448, "Wall # 121 @ 1-Line; Vertical Corner Bar Outside Horizontal Hook Bar at EL. 117'-6""", Rev. 0
 SV3-CR01-GEF-001091, "1 Line Wall EL. 127 ft. Corbel Detail Changes", Rev. 0

N&Ds

SV3-CR01-GNR-000904, "1 Line Wall d Dimensions above Elevation 100'-0""", Rev. 0
 SV3-CR01-GNR-000995, "Wall # 121 @ 1-Line Pipe Penetration/Rebar Conflict", Rev. 0
 SV3-CR01-GNR-000920, "Wall # 74 @ 1-Line: Closed-ties East of Pipe Penetrations above Elevation 117'-6""", Rev. 0

Pour Card

4199, U3 South Aux Building Wall Placement # 121 and # 122 (1-Line) up to 127-0

Batch Tickets

49618, Date: 08/02/2018

49625, Date: 08/02/2018

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SV3-CC01-Z0-031, "Safety Related Placing Concrete and Reinforcing Steel," Rev. 8

Procedure

APP-GE-GAP-420, "Engineering and Design Coordination Reports," Rev. 12

Drawings

SV3-0000-C9-001, "AP1000 Concrete General Notes," Rev. 8

SV3-1230-CR-344, "Aux Building Area 4 Concrete Reinforcement Floor EL. 105'-0" & 107'-2" Plan View," Rev. 1

SV3-1230-CR-393, "Aux Building Areas 4 & 5 Concrete Reinforcement Floor EL. 100'-0", 105'-0" & 107'-2" Details," Rev. 6

SV3-1230-CR-100, "Aux Building Concrete Reinforcement Slab joint Rebar to Connect with Shield Building EL. 100'-0"," Rev. 2

SV3-1234-CE-001, "Aux Building Area 4, 2 HR Fire rated Metal Studded Wall Anchor Bolt Locations-Room 12351 Plan @ EL. 107'-2"," Rev. 0

E&DCR's

APP-CR01-GEF-150, "Slab 12351 Reinforcement Spacing Around Large Floor Penetrations EL. 107'-2", Rev. 0

APP-1208-GEF-432, "Radial Dowel T-head Clarification for Elevations 100', 105', and 107'-2""", Rev.0

SV0-CR01-GEF-001141, "ESR 50001395 AB A4 Room 12351 Removal of CJ at Concrete Stairs SP-22", Rev. 0

SV0-1200-GEF-001, "Concrete Slab Top & Shear Reinforcement Details for Floor Drain Interferences", Rev. 0

APP-1230-GEF-850011, "Dedicated Conduit Penetrations for Radiation Monitor RMS-JE-RY021", Rev.0

SV3-CR01-GEF-000432, "# 9 U-bars Around Floor Opening, EL.107'-2" Room 12351", Rev. 0

SV3-CR01-GEF-000431, "#5 90 Degree Hook and Shear Ties Installation- Room 12351", Rev. 0

Section 1A25Design Specification

SV3-CC01-Z0-031, Safety Related Placing Concrete and Reinforcing Steel, Rev. 8

Design Drawings

SV3-1200-CR-953, Aux Building Areas 5 & 6 Concrete Reinforcement Wall 4 Elevation, Rev.13

SV3-1240-CR-953, Aux Building Areas 5 & 6 Concrete Reinforcement Wall 4 Sections and Details, Rev.4

SV3-1200-CR-991, Auxiliary Building Concrete Reinforcement Typical Opening Detail, Rev. 5

SV3-0000-C9-001, AP1000 Concrete General Notes, Rev. 8

SV3-0000-C9-002A, AP1000 Concrete General Notes, Rev. 2

Non Conformance and Disposition Reports

SV3-CR01-GNR-000924, I-line at 4-line; rebar congestion at 4-line hook bars, Rev. 0

SV3-CR01-GNR-000958, Added Bars Over 4-line Wall Opening, Rev. 0

Engineering Design and Coordination Report

SV0-CR01-GEF-001068, 4-line Wall Opening Reinforcement Requirement, Rev. 0

Section 1A26

This input is security related. See non-public report 05200025/2018412 for details.

Section 1A27

SV0-RCS-M0P-800315, GQ P 9.7, "Solvent Removable Liquid Penetrant Examination and Acceptance Standards for Welds, Base Materials, and Cladding", Revision 19
ASME Section III, Subsection NB, "Class 1 Components", 1998 with 2000 Addenda
Traveler 913384-011, "Install RCL Piping FW SV4-RCS-PL01-FW-BCL05", Rev. 0

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Design Specification, Technical Manual, Rigging Plan and Drawings

Westinghouse Design Specification APP-MB01-Z0-101, "Design Specification for AP1000 Steam Generator for RCS," Revision 12

Westinghouse Technical Manual, TM 1440-C394, Volume 1, Revision 2, Document No. APP-MB01-VHM-001, "AP1000 Steam Generator Instructions for Receipt Inspection, Storage and Assembly," Revision 1

Bechtel Rigging Plan No. SV4-MB01-MHH-003, "Upending and Installation of Unit 4 Steam Generators MB-01 & MB-02," Revision 0

Drawing APP-MB01-V2-701, "AP1000 Steam Generator Installation Outline," Revision 1

Field Sketch Drawing 26139-SV4-FSK-R-000003, "Unit 4 Steam Generator Vertical Lift Installation Orientation," Revision 0

Drawing APP-VH01-V2-105, "Steam Generator Lift Assembly Trunnion and Temporary Support Linkage," Revision 2

E&DCR and Deviation Notices

Westinghouse E&DCR No. APP-VH01-GEF-105, "EDCR to Change Minimum Thread Length Requirement on SG Upender Adaptor Plate Screws (Socket Head Cap)," Revision 0

APP-VH01-GEF-159, "Modifications to the SG Upender Skid Bolting and SG Clevis/Adapter Plates Bolting Sequence," Revision 0

APP-VH01-GEF-161, "Modification to SG Upender Installation Drawings," Revision 0

SV4-VH01-GNR-000002, "SV4 SG Up-ender Pin Re-use Inspection," Revision 0, disposition "Use-As-Is" dated of fluorescent wet magnetic particle examination report V-18-MT-302-3987 by MISTRAS

SV0-MB01-GNR-000001, "MB01 Steam Generator Storage Condition," Revision 0

Bechtel Deviation No. SV4-MB01-MHF-001 for Rigging Plan SV4-MB01-MHH-003, Revision 0, Deviation No. 2 for MB-02 (East) Link Plates (2 each) signed by QC inspector on August 23, 2018

Bechtel Deviation No. SV4-MB01-MHF-002, dated August 23, 2018, for Rigging Plan SV4-MB01-MHH-003, Revision 0, for addition of 3 25'x9'x5' LAMPSON Crane mats under the upending frame changes the loading of the transporter and center of gravity offset necessary to equalize pressures, effecting page 5 of rigging plan with revised LAMPSON Hook Load calculation

NDE and M&TE Records

MISTRAS Magnetic Particle Examination Report No. V-18-MT-302-3987, performed on Clevis Pin that was rejected on August 7, 2018, due to 4 linear indications found from bottom ends
 ATS Magnetic Particle Examination Report performed on 78 pieces of carbon steel 3-3/8" x 9-1/4" Trunnion Bolts, dated August 7, 2018
 LAMPSON Trimble GS82 load scale and anemometer gage calibrated by Trimble Lifting Solutions Service on July 31, 2018
 LAMPSON Lattice Boom Crane Inspection Report No. 037-18 performed by B&M Equipment Repair and Certification, Inc., dated July 10, 2018
 LAMPSON Hoist Daily Inspection Log for Hoist S/N H547/H546 performed on August 24, 2018
 LAMPSON Annual Assembly Inspection Report for Transi-Lift Heavy Lift Mobile Crane Model LTL 2600 dated July 11, 2018
 Certificate of Calibration and Traceability No. COL-11067-299457-1, 299458-1, 299459-1, and COL-11067-299456-1 for LAMPSON Transporter pressure gauge ID Nos. 106451, 106452, 106453 and 106454, calibrated by J.A. King on August 17, 2018
 LAMPSON crane operator certification dated August 31, 2014 due August 31, 2019
 LOCTITE N7000 Ant-seize lubricant tag No. NLOC-51270, expiration date May 2022

STEP BY STEP LIFT NARRATIVE

Bechtel document No. 26139-000-4MP-T81C-N1903, "Construction Rigging Work Operation Appendix A, "Shackle Inspection Form," for Wide Body Shackle S/Ns PL 7829KN #46, GN901463-2, PL6524KN # 38, #39, #40 and #41 dated August 23, 2018
 Pre-Lift Rigging Steps for Trunnion Links "Step by Step Lift Narrative," signed on August 24, 2018
 WECTEC Document SV0-VH01-MHH-011, "SG Upending Clevis & Manway Lift Trunnion Installation Plan," Revision 0
 WECTEC Rigging Plan No. SV0-VH01-MHH-011, "Torque Data Sheet for SG Upending Clevis & Manway Lift Trunnion Installation," dated August 22, 2018
 Step by Step Lift Narrative Pre-requisite Steps for Upending and Installation Unit 4 Steam Generator MB-02 signed on August 23, 2018
 Construction Rigging Work Operations No. 26139-000-4MP-T81C-N1903, "Pre-Lift Safety Checklist w/Roster" signed on August 24, 2018
 Pre-Transport Safety Checklist w/Roster for Medium and Critical Transport Operations of KAMAG 2406S HS4E (Transporter) signed on August 24, 2018
 Step-by-Step Narrative work steps for Upending and Installing Unit 4 Steam Generator MB-02 completed on August 24, 2018 with Step 5 for LAMPSON'S LMIT documented on Deviation No. SV4-MB01-MHF-002

Section 1A29Drawings and Procedures

Drawing No. SV4-RCS-VE-001
 PCI Weld Map API-0755, "RCL Piping Weld Map," for Project No. 913384, Revision 0
 PCI General Quality Procedure (GQP) 9.6 "Visual Examination of Welds," Revision 18
 PCI GQP 9.7, "Solvent Removable Liquid Penetrant Examination and Acceptance Standard for Welds, Base Materials and Cladding (40 to 125F)", Revision 19,
 PCI GQP 9.7 Procedure Supplement PS-03, "Procedure Supplement," Revision 0, dated April 24, 2018
 MISTRAS RT procedure 521-RT-302, "Radiographic Examination Using Computed Radiography In Accordance with ASME Section V, Article 2", Revision 0

PCI Welding Procedure Specification No. 8MN-GTAW Revision 7, w/Supplement 8MC-GTAW Revision 18
 PCI Procedure Qualification Record (PQR) No. 8 MC-GTAW, "Manual GTAW process for P8-P8 material without Impact Testing," Revision 16
 PCI PQR No. 062, "Machine GTAW process, for P8-P8 material," Revision 2
 PCI PQR No. 063, "Manual GTAW and Manual SMAW process, for P8-P8 materials," Revision 6
 PCI PQR No. 600, "Machine GTAW Process, for P8-P8 materials," Revision 8
 PCI PQR No. 864, "Machine GTAW process for P8-P8 materials, without impact testing," Revision 2
 PCI PQR No. 899, "Machine GTAW process for P8-P8 material without impact testing," Revision 4

Welding and NDE Records

PCI Weld Process Traveler 913384-003 for field weld No. SV4-RCS-PL01-FW-BHL01 hot leg RCS L001B
 PCI Weld Process Traveler 913384-004 for field weld No. SV4-RCS-PL01-FW-BCL04 cold leg RCS L002C
 PCI Weld Process Traveler 913384-005 for field weld No. SV4-RCS-PL01-FW-BHL06 col leg RCS L002D
 PCI Quality Assurance Traveler 913384-005, "RCL Piping Installation for Vogtle Unit 4" on Field Weld No. SV4-RCS-PL01-FW-BCL06 for RV Inlet Nozzle, dated July 12, 2018
 PCI Weld Material Withdrawal Slip No. 913384-003 for FW# SV4-RCS-PL01-FW-BHL01, dated August 3, 2018
 PCI Report of Nondestructive Examination Visible, "Solvent Removable Liquid Penetrant Examination Report No. NDE-913384-016 (ID)", dated August 7, 2018
 PCI Report of Nondestructive Examination Visible, "Solvent Removable Liquid Penetrant Examination Report No.913384-017 (tack welds)", dated August 7, 2018
 PCI Report of Nondestructive Examination Visible, "Solvent Removable Liquid Penetrant Examination Report No.913384-019", dated August 20, 2018
 PCI Report of Nondestructive Examination Visible, "Solvent Removable Liquid Penetrant Examination Report No.913384-020", dated August 20, 2018
 MISTRAS Computed Radiograph Examination Report No. P-18-RT-302-0037, dated August 7, 2018, for Hot Leg RCS-L001B, SV4-RCS-PL01-FW-BHL01
 MISTRAS Computed Radiograph Examination Report No. P-18-RT-302-0038, dated August 7, 2018, for Cold Leg RCS-L002C, SV4-RCS-PL01-FW-BCL04
 MISTRAS Computed Radiograph Examination Report No. P-18-RT-302-0039, dated August 7, 2018, for Cold Leg L002D, SV4-RCS-PL01-FW-BCL06

Material Certification Records

Lincoln CMTR 6338992 dated March 28, 2014 for 0.035" diameter ER316LN, Heat /Lot No. 1182D, ASME SFA 5.9
 Lincoln CMTR 6338965 dated March 28, 2014 for 3/32" diameter x 18" ER316/ER316LN, Heat /Lot No. 1181M, ASME SFA 5.9
 Lincoln CMTR 6338965 dated March 28, 2014 for 1/8" diameter x 18" ER316/ER316LN, Heat /Lot No. 1181L, ASME SFA 5.9
 Certificate of Conformance for Magnaflux SpotCheck developer SKD-S2 Batch No. 16J08K, expires September 2021
 Certificate of Conformance for Magnaflux SpotCheck Cleaner SKC-S Aerosol Batch No. 17K13K, expires October 2022

Certificate of Conformance for Magnaflux SpotCheck Penetrant SKP Batch No. 16D16K,
expires September 2021

M&TE Records

PCI Fluke Digital thermometer ID No. PCI QTC-206, calibration due October 6, 2018
PCI White Light Meter ID No. PQC-QLM-37, calibration due September 29, 2018

Qualification Records

PCI ASME Welder Maintenance Log for GTAW automatic machine welders, expiration January 16, 2019
PCI ASME Qualified Welder List for Vogtle Unit 4 RCL, Revision 0, dated July 23, 2018
PCI NDE PT Level II Personnel Certification record SAP No. 98853, dated September 22, 2016
PCI NDE VT Level II Personnel Certification record SAP No. 98853, dated September 22, 2016
MISTRAS Level II RT inspector visual acuity record, dated November 8, 2017
MISTRAS NDT Certification Record No. 18800 for RT interpreter Level II inspector certified on July 21, 2016, due June 3, 2019
MISTRAS NDT Certification Record No. 21390 for Computer Radiography Level II inspector certified on July 20, 2017, due July 19, 2020
MISTRAS NDT Certification Record No. 20501 for Computer Radiography Erosion/Corrosion Level III inspector certified on March 6, 2017, due February 2, 2022

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APP-MV01-Z0-101, Design Specification for the AP1000 Reactor Vessel for System: Reactor Cooling System (RCS), Revision 13
APP-MV01-GEM-001, AP1000 Reactor Vessel Instruction Manual, Revision 2
SV4-MV01-MHH-005, Rigging Plan, Upending and Installing Reactor Vessel, Revision 0

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WEC APP-MV50-V8-001, AP1000 Containment Vessel Penetration Installation Specification, Revision 2
WEC APP-GW-P0-008, AP1000 Specification for Field Fabricated Piping and Installation, ASME Section III, Code Classes 1, 2, and 3, and ASME B31.1, Revision 6
WEC Drawing SV4-SFS-MLK-876768, Weld Map for Penetration SV4-SFS-PY-C02(P22), Revision 0
Construction Isometric Drawing SV4-1100-P0-906-R1, Steel Containment Vessel Mechanical Penetration Details, Revision 1
Construction Isometric Drawing SV4-ML10-V6-010-R1, AP1000 Flued Head Detail Drawing for Penetration P22, Revision 1
Construction Isometric Drawing SV4-MV50-V1-015-R1, AP1000 Containment Vessel Penetrations List, Revision 1
Construction Isometric Drawing SV4-MV50-V1-016-R1, AP1000 Containment Vessel Penetrations Location, Revision 1
Construction Isometric Drawing SV4-MV50-V1-019-R2, AP1000 Containment Vessel Mechanical Penetrations Sleeves Bottom Head, Revision 2
Construction Isometric Drawing SV4-MV50-V2-062-R1, AP1000 Containment Vessel Penetration Sleeve Extensions, Rev. 1

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APP-MV50-V8-001, "AP1000 Containment Vessel Penetration Installation Specification", Revision 2

Weld Data Sheet for Weld Number SV4-RNS-PY-C01-3 (P19 Flued Head to Guard Pipe, Pressure Boundary)
 Lincoln Electric Company CMTR No. 8939798, 1/8" x 18", ER309/309L, Heat/Lot 1332L
 S&W Record of Welder Performance Qualification for Welder ID AT2517, Test No. 1SS-02, dated 6/8/2018
 Weld Material Requisition No. 400059 for weld rod ER309L, Heat/Lot 1030A, dated 7/30/2018
 Weld Data Sheet for Weld Number SV4-SFS-PY-C02-2 (P22 Flued Head to Penetration Sleeve, Pressure Boundary)

NDE

V-18-RT-301-0300, Radiographic Examination Report for SV4-RNS-PY-C01-3, dated 6/19/2018 (P19)
 V-18-PT-301-2765, Liquid Penetration Examination Report for SV4-SFS-PY-C02- 2 , dated 8/2/2018 (P22)
 V-18-RT-302-0450, Radiographic Examination Report for SV4-SFS-PY-C02-2, dated 8/22/2018 (P22)

Drawings

SV4-SFS-MLK-876768, "Weld Map for Penetration SV4-SFS-PY-C02 (P22)", Revision 0
 APP-MV50-V2-062, "AP1000 Containment Vessel Penetration Sleeve Extensions", Revision 1
 APP-ML10-V6-010, "AP1000 Flued Head Detail Drawing for Penetration P22", Revision 1

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APP-KB36-V0-001, Module 1231-KB-36 PCS Pump/Valve Module Drawing Index, Revision 6
 APP-KB36-V1-401, Module 1231-KB-36 PCS Pump/Valve Module General Outline Equipment List and Notes, Revision 2
 APP-PCS-M6-002, Piping and Instrumentation Diagram Passive Containment Cooling System, Revision 11
 APP-PV02-V2-134001, Class 1500 Stainless Steel Manual Operated Y-Globe Valve 2", Seal Welded Bonnet, SW Assembly Drawing PV02 Datasheet 134, Rev. 0
 SV0-PV03-V2-111001 - 111004, AP1000 Manually Operated Gate Valve 3" Class 150 Assembly Drawing APP-PV03-Z0D-111, Rev. 0
 SV0-PV03-V2-109001 - 109004, AP 1000 Manually Operated Gate Valve 4" Class 150 Assembly Drawing APP-PV03-Z0D-109, Rev. 1

Procedures

APP-GW-VH-001, AP1000 Site Receiving Inspection and Storage Requirements for System Materials and Equipment, Rev. 2
 26139-000-4MP-T81C-N6201, Field Material Storage Control, Rev. 3

Design Specifications

APP-PL02-Z0-102, AP1000 Class 2, 3 Piping and B31.1 Extensions Design Specification, Revision 4
 APP-PV02-Z0-001, 2 and Smaller Manually Operated Globe and Check Valves, ASME Boiler and Pressure Vessel Code, Section III, Class, 1, 2 and 3, Revision 13
 APP-PV03-Z0-001, Design Specification for 3 and Larger Manually Operated Gate, Stop Check, and Check Valves, ASME Boiler and Pressure Vessel Code, Section III, Class, 1, 2, and 3 for Various Systems, Revision 9

Fabrication Specifications

APP-GW-VLR-002, Technical Requirements of Stainless Steels, Nickel-Base Alloys, Carbon and Low Alloy Steels, and Welding Materials for the AP1000, Revision 2

APP-GW-VLR-010, AP1000 Supplemental Fabrication and Inspection Requirements, Revision 2

Nonconformance Reports

APP-KB36-GNR-850078, dated February 1, 20 17

APP-KB36-GNR-850079, dated February 1, 20 17

APP-KB36-GNR-850128, dated May 4, 20 17

Fabrication Records for QADP SV4-PV02-VQQ-012, Valve PCS-V050 (Serial No. SF1401-008), Rev. 3

QR-14-1440, Westinghouse Quality Release & Certificates of Conformance, Revision 3

DN-PV02-VG-017, Quality Assurance (QA) Records Data Package Index, Revision 0

Form NPV-1 Certificate Holders Data Report for Nuclear Pumps or Valves, Manufactured and certified by Samshin Limited, Manufactured for Westinghouse Electric Company, Valve Serial No. SF1401-0008, dated May 9, 2014

CMTR-PV02-VG-1402-009, ASME SA182-F304L, Heat No. 1BF-1/1 (Source Material Heat No. N03280), dated February 25, 2014

CMTR-PV02-VG-1402-008, ASME SA182-F304L, Heat No. 1BE-1/1 (Source Material Heat No. N02212), dated February 25, 2014

CMTR-PV02-VG-1402-010, ASME SA479-304L, Heat No. 1BJ-1 (Source Material Heat No. S10122), dated February 25, 2014

HTR-5-0108--003, Heat Treatment Record, Heat Nos. 1BE-1/1 & 1BF-1/1, dated January 8, 2014

14-SSV-P2091, Liquid Penetrant Examination Report, Heat Nos. 1BE-1/1, 1BF-1/1 & 1BJ-1, On Root Pass of Weldments, dated March 4, 2014

14-SSV-P2093, Liquid Penetrant Examination Report, Heat Nos. 1BE-1/1, 1BF-1/1 & 1BJ-1, On Hardfaced Surface & Adjacent Base Material, dated March 13, 2014

PTR-VG4-1404-134-01, Production Test Report (Pressure Test), dated April 9, 2014

Fabrication Records for QADP SV4-PV03-VQQ-017, Valve PCS-V020 (Serial No. BO650), Rev. 3

QR-14-1102, Westinghouse Quality Release & Certificates of Conformance, Revision 3

Certificate of Compliance/Conformance, Westinghouse Electric Co LLC, 3-150-FW (CF3M) S/N BO650, dated March 31, 2014

IMQP 91176-QA-03, Integrated Manufacturing & Quality Plan, Manually Operated Valves Drawing Numbers 09-91176-01 thru 30 & 71, Rev. 7

Form NPV-1 Certificate Holders Data Report for Nuclear Pumps or Valves, Manufactured and certified by Flowserve Corporation, Manufactured for Westinghouse Electric Company, Valve Serial No. BO650, dated March 16, 2014

CMTR No. M1318/SUP-4, ASME SA351 GR CF3M, Heat No. M1318 Serial No. 4, dated March 9, 2011

CMTR No. 4598261 (Larson Internal Heat No. 2634), ASME SA182 Gr F-316SS, Heat Code 251277 (2634), dated June 5, 2012

Exova Test Certificate T21684, Heat 251277, dated August 21, 2012

Liquid Penetrant Examination Report 91176-12 PT of Rough Casting, Heat No M1318, dated November 7, 2012

Weld Repair Data Sheet, 145554, dated April 2, 2013

Liquid Penetrant Examination Report of Base Cavities (Reject Ticket 145554), dated April 2, 2013

Weld Process Report 145554, Heat No. 1318-4, dated April 11, 2013

Liquid Penetrant Examination Report PT Hardfacing & 1/4 in. Base Metal, dated April 12, 2013

Visual Examination Report 91176-12, Heat No. M1318-4, SA351 GR CF3M, dated October 19, 2012

Flowserve Assembly & Test Data Sheet, 36-Q-1129, Sales Order 91176, dated November 15, 2013

Fabrication Records for QADP SV4-PV03-VQQ-037, Valve PCS-V044 (Serial No. BS252), Rev. 0

QR-16-725, Westinghouse Quality Release & Certificates of Conformance, Revision 0

Certificate of Compliance/Conformance, Westinghouse Electric Co LLC, 4-150-FW (CF3M) CL 3 S/N BS252, dated March 28, 2016

IMQP 91176-109-1, Flowserve Flow Control Division Integrated Manufacturing & Quality Plan, Valve Assembly 4" 150 Flex Wedge Gate (CF3M Austenitic Stainless) ASME Class 3, Rev. 7
Form NPV-1 Certificate Holders Data Report for Nuclear Pumps or Valves, Manufactured and certified by Flowserve Corporation, Manufactured for Westinghouse Electric Company, Valve Serial No. BS252, dated March 28, 2016

CMTR No. M0897/SUP-2, ASME SA351 GR CF3M, Heat No. M0897, dated March 22, 2016

CMTR No. T210067, ASME SA182 Gr F-316SS, Heat Code 159 (G16674), dated June 5, 2012

Exova Test Certificate T210667, Heat G16674, dated May 21, 2012

Liquid Penetrant Examination Report, Heat No M0897, dated February 5, 2013

Visual Examination Report, Heat No. M0897, SA351 GR CF3M, dated January 10, 2013

Weld Process Report 91154, Serial No. M0897 1, dated February 12, 2013

Ultrasonic Examination Report 91176-02, Heat No. 159, May 21, 2013

Liquid Penetrant Examination Report 91176-02, Heat No. 159, dated June 18, 2013

Weld Process Report 91176-02, Heat No. 159, dated June 25, 2013

Flowserve Assembly & Test Data Sheet, 36-Q-1129, dated March 10, 2016

Pipe Spool SV4-PCS-PLW-10X-1A/1B

Form N-5 Certificate Holders' Data Report for Installation or Shop Assembly of Nuclear Power Plant Components, Supports, and Appurtenances, Serial No. SV4-PCS-PLW-10X-1A & SV4-PCS-PLW-10X-1B, dated July 1, 2016

Form NPP-1 Certificate Holders' Data Report for Fabricated Nuclear Piping Assemblies, Serial No. SV4-PCS-PLW-10X-1A, dated July 1, 2016

Form NPP-1 Certificate Holders Data Report for Nuclear Pumps or Valves, Serial No. SV4-PCS-PLW-10X-1B, dated July 1, 2016

Sketch No. 891700-40-01-00008, Pipe Spool Serial No SV4-PCS-PLW-10X-1A/1B, Revision 3

CMTR No. 0YYU5536 (mechanical properties), Heat No. F119136, dated January 11, 2012

CMTR No. 2011-9-2 (chemical properties), Heat No. F119136, dated September 30, 2011

Pipe Spool SV4-PCS-PLW-10F-1A/1B

Form N-5 Certificate Holders' Data Report for Installation or Shop Assembly of Nuclear Power Plant Components, Supports, and Appurtenances, Serial No. SV4-PCS-PLW-10F-1A & SV4-PCS-PLW-10F-1B, dated April 8, 2016

Form NPP-1 Certificate Holders' Data Report for Fabricated Nuclear Piping Assemblies, Serial No. SV4-PCS-PLW-10F-1A, dated April 8, 2016

Form NPP-1 Certificate Holders Data Report for Nuclear Pumps or Valves, Serial No. SV4-PCS-PLW-10F-1B, dated April 8, 2016

Sketch No. 891700-40-01-00005, Pipe Spool Serial No SV4-PCS-PLW-10F-1A/1B, Revision 3

CMTR No. 201431975, Heat No. 539325, dated September 23, 2014

CMTR No. 201431973, Heat No. 539325, dated September 23, 2014

Pipe Spool SV4-PCS-PLW-10E

Form N-5 Certificate Holders' Data Report for Installation or Shop Assembly of Nuclear Power Plant Components, Supports, and Appurtenances, Serial No. SV4-PCS-PLW-10E-1A, dated June 10, 2016

Form NPP-1 Certificate Holders' Data Report for Fabricated Nuclear Piping Assemblies, Serial No. SV4-PCS-PLW-10E-1A, dated June 10, 2016

Sketch No. 891800-40-01-00005, Pipe Spool Serial No SV4-PCS-PLW-10F-1A/1B, Revision 3
CMTR No. 0YYU5541R1, Heat No. F12A044 (mechanical properties), dated December 09, 2011

CMTR No. 2011-10-2, Heat No. F12A044 (chemical properties), dated October 11, 2011

Valve Data Sheets

APP-PV03-Z0D-109, PV03 Datasheet 109, Rev. 3

APP-PV03-Z0D-111, PV03 Datasheet 111, Rev. 2

APP-PV02-Z0D-134, PV02 Datasheet 134, Rev. 3

Purchase Orders

Purchase Order 132176-G230.04 (01/10/18)

Purchase Order 132175-G230.04 (08/15/17)

Receipt Inspection Records

Material Receiving Instruction (MRI) 26139-SV4-MRI-18-00163-01, Unit 4 PCS Pump/Valve Module 1231-KB-36, Rev. 0

Q445-18-10069, Receipt Inspection - Non ASME, 1 (1/6/18)

Q445-18-109447, Receipt Inspection: WECTEC Procured ASME III Items, (4/30/18)

CB&I Laurens Valve Installation Weld Records

Shop Travelers for Sketch numbers: 891700-40-01-00005, 891700-40-01-00008, 891800-40-01-00005

Weld Filler Metal CMTRs for heat numbers: CF0140 (1/30/15), CT9686 (6/20/12), AT9460 (3/28/12), CT9742 (11/16/12)

Welding Procedure AP1000803 Revisions 7 and 8

Welding Procedure Qualification records: PRN 070 (6/15/1990), PRN 072 (4/14/1993), PRN 076 (12/11/1991)

Welder Performance Qualification Records for welder IDs: B8 (2/2/15) and B1 (10/6/11)

Liquid Penetrant Test Reports for sketch numbers: 891700-40-01-00005 (1/11/16), 891700-40-01-00008 (6/15/16), 891800-40-01-00005 (4/22/16)

Aecon Pipe Weld Records

Drawings: SV4-KB36-PCS-PLW-03 Rev. 0 and Rev. 1

Weld Data Sheets: SV4-KB36-PCS-PLW-03-Y36-W61 Rev. 0, SV4-KB36-PCS-PLW-03-Y36-W54 Rev. 0

CMTRs for weld filler metal heat numbers: 1290S (9/30/16), 1254K (8/11/15)

Welding Procedure: 88-200-N28, Rev. 2

Welding Procedure Qualification Records: 88-20-715 (3/11/15), 88-20-712 (1/6/15)

Welder Qualification Records for welder IDs: 197 (8/17/16), 155 (8/11/16)

PT reports: PT-Y36-014 (9/29/17), PT-Y36-014 (9/29/17)

VT Reports: VT-Y36-056 (7/24/17), VT-Y36-060 (7/26/17), VT-Y36-224 (9/29/17)

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V-18-RT-302-0267, "Computed Radiography Examination Report, field weld SV4-PXS-PLW-020-3, 5/31/2018
 V-18-RT-302-0281, "Computed Radiography Examination Report, field weld SV4-PXS-PLW-01V-8, 6/05/2018
 V-18-RT-302-0330, "Computed Radiography Examination Report, field weld SV4-PXS-PLW-01V-10, 7/10/2018
 WEC isometric drawing APP-PXS-PLW-020, "Passive Core Cooling System Containment Building Room 11207 ISOL Valves to Common Injection HDR", Rev. 5
 WEC isometric drawing APP-PXS-PLW-01V, "Passive Core Cooling System Containment Building Room 11206 Core Makeup Tank Discharge Piping", Rev. 3
 ASME Section III, Subsection NB, "Class 1 Components", 1998 Edition including 2000 Addenda
 MISTRAS 521-RT-302, "Radiographic Examination using Computed Radiography in Accordance with ASME Section V, Article 2", Revision 0

Section 1A35Drawings and Procedures:

Drawing APP-PXS-PLW-01K, "Passive Core Cooling System Containment Bldg. Room 11206 CMT-A Discharge Piping," Revision 3
 Drawing SV4-PXS-PLK-870305, "Material Identification for SV4-PXS-PLW-01K," Revision 0
 Engineering & Design Coordination Report No. APP-PXS-GEF-850244, "PXS ISO Conditioning," Revision 0
 MISTRAS 100-QC-005.2, "Qualification and Certification of Nondestructive Test Personnel," Revision 4.1
 MISTRAS Procedure 100-PT-301, "Liquid Penetrant Examination in Accordance with ASME Section V, Article 6," Revision 12
 WECTEC Quality Inspection Plan, IP No. F-S562-005, "Piping-Weld Joint Inspection ASME Section III Code Classes 1, 2 & 3," Revision 06.00
 Weld Material Requisition Sheet 420755
 Weld Procedure WPS1-8.8T01, "Manual and Machine GTAW of P-No. 8 to P-No. 8, ASME III All Subsections & Non-ASME III," Revision 10

Welding & NDE Records:

MISTRAS Certification Record No. 20159 for Level II Liquid Penetrant-Solvent Removable process certified on January 26, 2017, due January 13, 2020
 MISTRAS Nondestructive Examination Report No. V-18-PT-301-2884 for liquid penetrant examination of pipe to valve butt weld # SV4-PXS-PLW-01K-1 on Check Valve PXS-PLV017A, dated August 15, 2018
 S&W Record of Welder Performance Qualification Test ASME Section IX Groove Welds for welders: TDM5366, and JCR9662
 Weld Data Sheet for Work Package No. SV4-PXS-P0W-851001 for Weld No. SV4-PXS-PLW-01K-1

Material Certification Records:

CMTR 4931885 dated February 16, 2017 for weld wire 3/32" x 36" ER316L, ASME SFA 5.9, Heat/Lot No. 1030C
 CMTR 4974203 dated February 16, 2017 for weld wire 1/8" x 36" ER316L, ASME SFA 5.9 Heat/Lot No. 1030D
 Magnaflux Certification for Spotcheck Cleaner, SKC-S, Batch No. 17H01K, dated August 8, 2017

Magnaflux Certification for Spotcheck Developer, SKD-S2, Batch No. 14K01K, dated October 10, 2014

Magnaflux Certification for Spotcheck Penetrant, SKL-SP2, Lot No. 14C08K

M&TE Records:

MISTRAS Flashlight Verification Log for White Maglite Model No. LED PRO, Serial No.

PG002769558, performed on August 14, 2018 using White Light Meter Serial No. 110703174
WECTEC Calibration Checklist No. V-AE-0101-2 for Oxygen Analyzer, calibrated on May 9, 2018 due May 9, 2019

WECTEC Calibration Checklist No. V-AP-0177-4 Digital Thermometer, calibrated January 20, 2018

Certificate of Calibration No. 2334966 dated May 11, 2018, for Magnaflux White Light Meter Serial No. 110703174, calibrated on May 11, 2018 due November 11, 2018

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Drawings and Procedures

Drawing APP-PXS-PLW-014, "Passive Core Cooling System Containment Building Room 11206 Accumulator Discharge to DVIA," Revision 4

Engineering & Design Coordination Report No. APP-GW-GEF-454, "Administrative Closure of Piping Isometric Open Items," Revision 0

Weld Procedure WPS1-8.8T01, "Manual and Machine GTAW of P-No. 8 to P-No. 8, ASME III All Subsections & Non-ASME III," Revision 10

Procedure Qualification Record (PQR) PQ574, "Manual GTAW of P-NO. 8 A/SA-240 TP 304/304L Material to P-NO. 8 A/SA-240 TP 304/304L Material with ER308/308L, As-Welded," Revision 1

PQR 595, "Manual GTAW OF P-NO. 8 A/SA-240 TP 304/304H Material to P-NO. 8 A/SA-240 TP 304/304H Material, As-Welded, With ER308L," Revision 0

MISTRAS 100-QC-005.2, "Qualification and Certification of Nondestructive Test Personnel," Revision 4.1

MISTRAS Procedure 100-PT-301, "Liquid Penetrant Examination in Accordance with ASME Section V, Article 6," Revision 12

Welding & NDE Records

Weld Data Sheet for Work Package Number SV4-PXS-P0W-800059 for Field Weld No. SV4-PXS-PLW-014-06

Weld Data Sheet for Work Package Number SV4-PXS-P0W-800059 for Field Weld No. SV4-PXS-PLW-014-10

MISTRAS Nondestructive Examination Report No. V-18-PT-301-2406 for liquid penetrant examination of butt weld of valve to pipe weld No. SV4-PXS-PLW-014-6 dated June 28, 2018

MISTRAS Nondestructive Examination Report No. V-18-PT-301-2414 for liquid penetrant examination of butt weld of valve to pipe weld No. SV4-PXS-PLW-014-10 dated June 28, 2018

Material Certification Records

Certificate of Material Test Report No. 4931885 dated February 16, 2017 for ES-ZBES 3/32" x 18" length Lincoln ER316/316L weld wire ASME SFA 5.9 Lot No. 1030C

Certificate of Material Test Report No. 7341122 dated August 31, 2015 for ES-ZBES 1/8" x 18" length Lincoln ER316/316L weld wire ASME SFA 5.9 Lot No. 1243V

Certificate of Material Test Report No. 6338965 dated April 10, 2015 for ES-RAXM 1/8" x 18" length Lincoln ER308/308L weld wire ASME SFA 5.9 Lot No. 1203E

Certificate of Material Test Report No. 6338965 dated April 14, 2015 for ES-RAXL 3/32" x 18" length Lincoln ER308/308L weld wire ASME SFA 5.9 Lot No. 1203F
 Magnaflux Certification for Spotcheck Penetrant, SKL-SP2, Lot No. 14C08K, dated April 4, 2014
 Magnaflux Certification for Spotcheck Developer, SKD-S2, Batch No. 17H08K, dated August 16, 2017
 Magnaflux Certification for Spotcheck Cleaner, SKC-S, Batch No. 18A23K, dated February 6, 2018

M&TE Records

MISTRAS Flashlight Verification Log for White Maglite Model No. LED PRO, Serial No. FL-19, performed on July 13, 2018 using White Light Meter Serial No. 110703066
 ATS Certificate of Calibration No. 2288442 dated February 2, 2018 for Magnaflux White Light Meter Serial No. 110703066, calibrated on February 1, 2018 due on August 1, 2018

Qualification Records

MISTRAS NDT Certification Record 21433 Level II Computed Radiography certified on August 1, 2017 due July 12, 2020
 MISTRAS NDT Certification Record 20584 Level II Liquid Penetrant -Solvent Removable certified on March 24, 2017 due March 21, 2020
 MISTRAS Visual Acuity Record dated November 17, 2017 due November 17, 2018
 S&W Record of Welder Performance Qualification Test- ASME Section IX Groove Weld for three welders

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Design Specification SV4-MT02-Z0-101, "Design Specification for AP1000 Accumulator Tank for PXS," Revision 2
 Rigging Plan SV4-MT02-MHH-003, "Installation of Unit 4 Accumulator Tanks (MT-01A / MT-01B)"
 Technical Manual SV4-MT02-VHM-001, "AP1000 Accumulator Tank Technical Manual: Instruction for Receipt Inspection, Storage, and Assembly," Revision 0
 Technical Manual SV4-MT02-VNM-001, "AP1000 Accumulator Tank Technical Manual: Instruction for Operation and Maintenance," Revision 0

Section 1A38

Design Specification, Drawings and Purchase Order

WEC Design Specification APP-PV03-Z0-001, "Design Specification for 3-inch and larger Manually Operated Gate, Stop Check and Check Valves, ASME Boiler & Pressure Code Section III, Class 2 and 3, for Various Systems" Revision 9
 WEC Data Sheet APP-PV03-Z0D-186, "PV03 Data Sheet 186," Revision 4,
 Enertech Design and Seismic Analysis Report MA23182, "Design and Seismic Analysis Report for 8-inch ANSI 1707 TYPE ERV-Z Nozzle Check Valve," Revision F, dated August 29, 2017
 Enertech MAA23182, "As-Built Design Report Addenda for Design Report MA23182 Revision F," Revision H,
 Enertech Drawing MD23164, "Nozzle Check Valve 8-inch Class 1707, ERV-Z, N.O With Position Indicator," Revision D
 Enertech Drawing MC24479, "Reducer, 8-1707, ERV-Z," Revision D
 WEC Purchase Order 4500328840 dated December 30, 2008 with Change Notice 23, issued to Curtiss-Wright Nuclear Division Brea Operation for procurement of 8-inch check valve serial number 11907

Quality Assurance Documents

WEC Quality Release & Certificate of Conformance No. QR-18-905, Revision 0, dated June 28, 2018, for AP1000 Document No. SV4-PV03-VQQ-049

Enertech Quality Inspection and Test Plan No. 960033-QP-3, "8-inch Nozzle check valves Class 1500 INT Butt Weld Ends, Quantity 8," Revision 3, dated April 8, 2011

Enertech Quality Inspection and Test Plan No. 390269-3-QP, "Reducer Weldment Valve 8-inch Class 1707 BW Ends Schedule 160 PV03 Nozzle Check valve S/N 11907 with Reducer S/N 85064," Revision 1, dated April 17, 2018

Enertech Certificate of Compliance for June 26, 2018, for Reducer weldment of Nozzle Check valve, S/N 11907, Reducer S/N 85064

Enertech Equipment Qualification Certificate of Conformance dated June 26, 2018

ASME Form NPV-1, "Certificate Holders' Data Report for Nuclear Pumps or Valves," for 8" x 8" Check Valve," June 25, 2018

ASME Form N-2, "Certificate Holder's Data Report for Identical Nuclear Parts and Appurtenances," for Reducer S/N 85064 Heat Code PUH, certified date June 13, 2018

Material Records

CMTR for 0.035" spool of ARCOS ER316/316L Heat No. E140778, Lot No. XF0140, dated December 4, 2015

CMTR for 1/16" AWS A5.13, ERCoCr-A Cobalt-6 weld wire Heat No. 08-1817. Heat Code NBC, dated June 11, 2011

CMTR for 1/16" x 36" ER316/316L ASME SFA 5.9, weld wire Heat No. 740574, Lot No. AT9349, dated September 28, 2017

CMTR for 1/16" x 36" filler metal ER316/316L ASME SFA 5.9 No. 735354, Lot No. AT8700, dated March 16, 2009

CMTR for 3/32 x 36" Arcos ER316/316L ASME SFA 5.9, weld wire Heat No. 741358, Lot No. CT9460, dated June 23, 2011

CMTR for 3/32" x 36" AWS A5.21, ERCoCr-A weld wire Heat No. 10-10930, Heat Code NBE, dated January 4, 2011

CMTR for pipe fittings P/N E0246D, S/Ns 53334-1 through 53334-8, Heat #11482, Heat Code NHU, dated February 7, 2014

CMTR for Reducer 8-1500 ERV-Z, P/N D7985N S/N 85064 Heat Code PUH, dated June 12, 2018

CMTR for valve body P/N D7982D S/Ns 4011 through 40118 E2203, Heat # 2H246, Heat Code NHV, dated February 7, 2014

CMTR for valve disk P/N D7983D S/Ns 53018 through 53025, Heat # 50869, Heat Code NMC, dated December 3, 2013

Energy & Process CMTR for 2" round bar for weld sleeve P/N E1333D, Heat No. 425031 dated March 6, 2013

Me-L-Chek Batch Certification for Cleaner E-59A, Batch No. 6900D13, dated April 30, 2013

Met-L-Chek Batch Certification for Developer D-70, Batch No. 6891D13, dated April 26, 2013

Met-L-Chek Batch Certification for Visible Penetrant VP-30, Batch No. 6607K11, dated October 12, 2011

NDE and Hydrostatic Test Records

Test Report (hydrostatic shell test, seat leakage, operability (manual) and operability (push rod and jet test) on original 8-inch DRV-Z Nozzle Check valve assembly P/N D8753N, S/N 11907 dated January 31, 2014

Test Report (hydrostatic shell test) for Reducer 8-inch 1707 ERV-Z P/N D7985N S/N 85064, dated June 12, 2018

Test Report (hydrostatic shell test, seat leakage, operability (manual) and operability (push rod and jet test) for Post Weldment of 8-inch DRV-Z Nozzle Check valve assembly P/N D8753N, S/N 11907 dated June 21, 2018

Visual Examination Test Report performed of weld repair weld lip of Reducer P/N D7985N S/N 85064, dated May 30, 2018

NDE Liquid Penetrant Examination Report of Reducer P/N D7985N S/N 85064 100%; dated June 12, 2018

NDE Liquid Penetrant Examination Report of Disc S/Ns 53018 through 53025, dated September 10, 2013

NDE Liquid Penetrant Examination Report of pipe fitting P/N E0264D, S/Ns 53334-1 through 53334-8, dated June 17, 2013

NDE Liquid Penetrant Examination Report of weld sleeve P/N D8965D, Heat No. 53484, Heat Code OAW, dated April 15, 2013

NDE Liquid Penetrant Examination Report of Completed weld joint S/N 58110, Valve Assembly S/N 11907, dated September 10, 2013

NDE Liquid Penetrant Examination Report of Butt Weld End Preparation on Reducer Weldment Valve Assembly S/N 11907, dated May 2, 2018

NDE Liquid Penetrant Examination Report of 100% LP of inner surfaces of Body S/N 40115, dated May 21, 2018

NDE Liquid Penetrant Examination Report of root pass on Reducer to Valve Assembly S/N 11907, dated June 14, 2018

NDE Liquid Penetrant Examination Report of LP inspection of all accessible surface on the outer fitting and cap assembly for Connector Male on 8-inch Valve Assembly S/N 11907, dated February 8, 2017

ELEMENT Radiograph Examination Report 37663 of Reducer Weldment to Valve Assembly S/N 11907, dated June 19, 2018

Dimensional Inspection Reports

Dimensional Inspection Report for Reducer P/N D7985N, S/N 85064, dated June 12, 2018

Visual Examination Test Report for Welding of Pipe Fitting to Body P/N D8753N S/N 11907 Lot No. 58110, dated September 10, 2013

Visual Examination Test Report for Welding of Disc Overlay P/N D7983D, S/N 53018, dated April 22, 2013

Nozzle Check Wall Thickness Report for Body P/N D7982D, S/N 40115, dated November 15, 2012

Nozzle Check Wall Thickness Report for Reducer P/N D7985N, S/N 85064 Heat Code PUH dated May 3, 2018

Dimensional Inspection Report for Body, Disc, Diffuser, and Spring for Valve S/N 11907, dated January 30, 2014

Inspection Record Sheet for Weldment Assembly P/N E6574N S/N 11907, dated June 25, 2018

Weld Records

Weld Repair Report for Reducer Item No. D7985N, S/N 85064, Heat Code PUH repaired on nonconformance material report 10838, dated May 30, 2018

Welding and Hardfacing Record dated June 14, 2018

Deviation Notices

WEC DN APP-PV03-GNR-020, "Deviation Notice for Weld End "C" Bore for PV03 Data Sheet 186, Enertech DN 6," Revision 0

WEC DN APP-PV03-GNR-013, "Deviation Notice for PV03-Z0D-186 Butt Weld End dimensions," Revision 0

WEC DN APP-PV03-GNR-026, "Deviation Notice for PV03 for Liquid Penetrant Testing for Data Sheet 186, Enertech DN 7," Revision 0

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Drawings and Procedures

Isometric Construction Drawing No. APP-PXS-PLW-02L, Passive Core Cooling System Containment Bldg. Room 11207, From Containment Recirc. To DVI-B, Revision 3
 Construction Drawing SV4-PXS-PHK-875294, Weld Map for Support SV4-PXS-PH-11R0142, Revision 0
 WECTEC Inspection Plan F-S562-008, "Supports-Welding Inspection ASME Section III Code-Subsection NF (Classes 1, 2 & 3)", Revision 04.00, June 21, 2018
 Stone & Webster Welding Procedure Specification WPS1-1.1GTSM-NF-2, Revision 5, January 30, 2018
 MISTRAS procedure 100-QC-005.2, "Qualification and Certification of Nondestructive Test Personnel," Revision 4.1
 MISTRAS procedure 100-MT-301, Magnetic Particle Examination In Accordance with ASME Section V, Article 7, Revision 2, November 28, 2011
 CB&I Inspection Plan F-S562-006, "Pipe Welding/Brazing ASME B31.3, Power Piping- Visual Weld Inspection (Condenser, Internal Pipe Welds)," Revision 2, Change 0, August 17, 2015

Weld and NDE Records

Weld Data Sheet for field weld SV4-PXS-PH-11R0142-7, in work package SV4-PXS-PHW-800004
 Weld Material Requisition No. 421530 for weld SX4-PXS-PH-11R0142-1, 2, 4, 7, 8, using E7018 electrodes of 3/32-inch diameter, Lot-No. 1351X, August 22, 2018
 MISTRAS NDE Report - Magnetic Particle Examination Report No. V-18-MT-301-4224, August 27, 2018, of Weld SV4-PXS-PH-11R0142

Material Test Records

Lincoln Certificate of Conformance and Certified Material Test Report No. 8105586 for 3/32 x 14-inch E7018 weld electrodes of SFA-5.1, Lot-No. 1351X, November 22, 2017
 Lincoln Certificate of Conformance and Certified Material Test Report No. 8527218 for 1/8 x 14-inch E7018 weld electrodes of SFA-5.1, Lot-No. 1231G, September 13, 2016
 Magnaflux Certificate of Certification for 8A Red Powder Batch No. 14J108, September 26, 2014

Measuring and Test Equipment Records

ATS Certificate of Calibration No. 2334906, dated July 17, 2018, for Mistras Group Magnaflux White Light Meter Serial No. 110703174 calibration due November 11, 2019
 WECTEC Calibration Checklist No. V-AP-0203-3, dated July 24, 2018, for Fluke digital thermometer S/N V-AP-0203 calibrated on July 24, 2018
 WECTEC Calibration Checklist No. V-M-0030-4, dated March 15, 2018, for digital light meter S/N V-M-0030 calibrated on March 15, 2018
 MISTRAS Infrared Thermometer Verification Report dated July 18, 2018, for IR S/N E4092014490, Model No. 22-171, calibrated on July 18, 2018 due January 18, 2019
 MISTRAS Flashlight Verification Form for Model Q5 Serial No. FL-01, verified using Light Meter Serial No. 110703066 on September 29, 2017

Qualification Records

Stone & Webster Record of Welder Performance Qualification Test ASME Section IX Groove Weld Record Test No. 1CS-03 for GTAW/SMAW, 6G position for P1-P1 material, June 4, 2018

MISTRAS NDT Certification Record No. 20271 for Level II Magnetic Particle Yoke Technique certified on February 17, 2017 due February 7, 2020

MISTRAS Visual Acuity Record for Level II MT inspector to Jaeger Number 1 method, August 8, 2018

Section 1A40Drawings

SV4-1230-CCK-840392, "Unit 4 Auxiliary Building Walls Placements from El. 100'-0" to El. 117'-6", Revision 0

SV4-1230-CC-919, "Auxiliary Building Concrete Outline Area 1 El. 100'-0" Sections I & J," Revision 4

SV4-1200-CR-914, "Auxiliary Building Area 1 Concrete Reinforcement Walls P & Q Elevations," Revision 8

Engineering and Design Coordination Reports (E&DCRs)

APP-1240-GEF-850059, "Concrete Hold at El. 117'-6" to 135'-3" on Wall L Due to CAP IR-2018-8808," Revision 0

Nonconformance and Disposition Reports (N&Ds)

SV4-CR01-GNR-000402, "Missing U-Bands on M-Line," Revision 0

SV4-CR01-GNR-00334, "Rebar and Conduit Interference," Revision 0

SV4-CR01-GNR-00319, "Wall 53 Rebar Failed Minimum Concrete Cover," Revision 0

Section 1A41Drawings:

SV4-0000-C9-001, "AP1000 Concrete General Notes," Revision 7

SV4-0000-C9-002, "AP1000 Concrete General Notes," Revision 8

SV4-0000-C9-002A, "AP1000 Concrete General Notes," Revision 2

SV4-1200-CR-991, "Auxiliary Building Concrete Reinforcement Typical Opening Detail," Revision 4

SV4-1200-CR-992, "Auxiliary Building Concrete Reinforcement Typical Opening Detail (Sheet 2)," Revision 6

SV4-1200-CR-910, "Auxiliary Building Areas 1 & 2 Concrete Reinforcement Wall 11 Elevation," Revision 7

SV4-1230-CR-910, "Auxiliary Building Areas 1 & 2 Concrete Reinforcement Wall 11 - Sections & Details El 100'-0" El 109'-0" & El 117'-6"," Revision 8

APP-1200-CE-994, "Auxiliary Building Non-Standard Embedment Plates NSP-11, 1P-12a, NSP-14, NSP-16, NSP-17, NSP-18, NSP-19 & NSP-20," Revision 3

SV4-1231-CE-917, "Auxiliary Building Area 1 Embedments Wall 11 Elevation 100-0 South View," Revision 7

SV4-1231-CEX-917, "Auxiliary Building Area 1 Wall 11 Embedments Index EL 100-0 South View Sheet 1," Revision 6

SV4-CE01-CE-001, "Standard Embedment Plates Headed Anchor (HA) Type (Sheet 1)," Revision 6

Procedures and Specifications:

APP-GW-GAP-420, "Engineering and Design Coordination Reports," Revision 14
 APP-GW-GAP-428, "Nonconformance and Disposition Report," Revision 15
 SV4-CC01-Z0-026, "Safety Related Mixing and Delivering Concrete," Revision 7
 SV4-CC01-Z0-027, "Safety Related Concrete Testing Services," Revision 6
 SV4-CC01-Z0-031, "Safety Related Placing Concrete and Reinforcing Steel," Revision 8
 SV4-CR01-Z0-011, "Furnishing of Safety Related Steel," Revision 4

Work Packages:

Work Package SV4-1230-CRW-800030, Revision 0
 Work Package SV4-1230-CRW-800032, Revision 0
 Work Package SV4-1230-CCW-800030, Revision 0
 Work Package SV4-1230-CCW-800032, Revision 0

Engineering and Design Coordination Reports:

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WECTEC Weld Data Sheets for weld CV8246-15-RW1
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WECTEC Weld Data Sheets for weld CV10892-14-RW
WECTEC Weld Data Sheets for weld CV10892-15-RW
WECTEC Weld Data Sheets for weld CV10892-16-RW
WECTEC Weld Data Sheets for weld 881476-11-RW-1
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WECTEC Weld Data Sheets for weld 880191-18
WECTEC Weld Data Sheets for weld 880191-19
WECTEC Weld Data Sheets for weld 880191-21

LIST OF ACRONYMS

ACI	American Concrete Institute
ADS	Automatic Depressurization System
ANI	Authorized Nuclear Inspector
ASME	American Society of Mechanical Engineers, 1998 Edition including 2000 Addenda
ASTM	American Society for Testing and Materials
AWS	American Welding Society
BPVC	Boiler and Pressure Vessel Code
CAP	Corrective Action Program
CAPAL	Corrective Action Prevention and Learnings
CFR	Code of Federal Regulations
CMT	Core Makeup Tank
CMTR	Certified Material Test Report
CNS	Containment System
COL	Combined License
CR	Condition Report
DTI	Direct Tension Indicator
DVI	Direct Vessel Injection
E&DCR	Engineering and Design Coordination Reports
FCAW	Flux-Cored Arc Welding
FTT	Fuel Transfer Tube
GTAW	Gas Tungsten Arc Welding
HX	Heat Exchanger
ICN	ITAAC Closure Notice
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
IRWST	In-Containment Refueling Water Storage Tank
ITAAC	Inspections, Tests, Analysis, and Inspection Criteria
M&TE	Measuring & Test Equipment
MT	Magnetic Particle Testing
N&D	Nonconformance and Disposition Report
NCV	Non-Cited Violation
NDE	Non-Destructive Examination
No.	Number
NQA	Nuclear Quality Assurance
NRC	Nuclear Regulatory Commission
PCD	Principal Closure Document
PCS	Passive Containment Cooling System
PNQAM	Project Nuclear Quality Assurance Manual
PNQCM	Bechtel Project Nuclear QC Manual
PQR	Procedure Qualification Record

PRHR	Passive Residual Heat Removal
PRHR HX	Passive Residual Heat Removal Heat Exchanger
PT	Liquid Penetrant Testing
QC	Quality Control
RC	Reinforced Concrete
RCS	Reactor Coolant System
RT	Radiographic Testing
SC	Steel Composite
SGTIS	Steam Generator Temporary Installation System
SMAW	Shielded Metal Arc Welding
SNC	Southern Nuclear Operating Company
SSC	Structure, System, and Component
UFSAR	Updated Final Safety Analysis Report
UT	Ultrasonic Testing
VT	Visual Testing
WEC	Westinghouse Electric Company
WPS	Welding Procedure Specification

ITAAC INSPECTED

13	2.1.02.02a	<p>2.a) The components identified in Table 2.1.2-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 2.b) The piping identified in Table 2.1.2-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements. 3.a) Pressure boundary welds in components identified in Table 2.1.2□1 as ASME Code Section III meet ASME Code Section III requirements. 3.b) Pressure boundary welds in piping identified in Table 2.1.2-2 as ASME Code Section III meet ASME Code Section III requirements. 4.a) The components identified in Table 2.1.2-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure. 4.b) The piping identified in Table 2.1.2-2 as ASME Code Section III retains its pressure boundary integrity at its design pressure. 5.b) Each of the lines identified in Table 2.1.2-2 for which functional capability</p>	<p>Inspection will be conducted of the as-built components and piping as documented in the ASME design reports. Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III. A hydrostatic test will be performed on the components and piping required by the ASME Code Section III to be hydrostatically tested. Inspection will be performed for the existence of a report verifying that the as-built piping meets the requirements for functional capability. Inspection will be performed for the existence of an LBB evaluation report or an evaluation report on the protection from dynamic effects of a pipe break. Section 3.3, Nuclear Island Buildings, contains the design descriptions and inspections, tests, analyses, and acceptance criteria for protection from the dynamic effects of pipe rupture.</p>	<p>The ASME Code Section III design reports exist for the as-built components and piping identified in Tables 2.1.2□1 and 2.1.2□2 as ASME Code Section III. A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds. A report exists and concludes that the results of the hydrostatic test of the components and piping identified in Table 2.1.2□1 and Table 2.1.2□2 as ASME Code Section III conform with the requirements of the ASME Code Section III. A report exists and concludes that each of the as-built lines identified in Table 2.1.2-2 for which functional capability is required meets the requirements for functional capability. An LBB evaluation report exists and concludes that the LBB acceptance criteria are met by the as-built RCS piping and piping materials, or a pipe break evaluation report exists and concludes that protection from the dynamic effects of</p>
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		<p>is required is designed to withstand combined normal and seismic design basis loads without a loss of its functional capability. 6. Each of the as-built lines identified in Table 2.1.2-2 as designed for LBB meets the LBB criteria, or an evaluation is performed of the protection from the dynamic effects of a rupture of the line.</p>		<p>a line break is provided.</p>
72	2.1.03.03	<p>3. The components identified in Table 2.1.3-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 4. Pressure boundary welds in components identified in Table 2.1.3-1 as ASME Code Section III meet ASME Code Section III requirements. 5. The pressure boundary components (RV, CRDMs, and incore instrument QuickLoc assemblies) identified in Table 2.1.3-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure.</p>	<p>Inspection will be conducted of the as-built components as documented in the ASME design reports. Inspection of as-built pressure boundary welds will be performed in accordance with the ASME Code Section III. A hydrostatic test will be performed on the components of the RXS required by the ASME Code Section III to be hydrostatically tested.</p>	<p>The ASME Code Section III design reports exist for the as-built components identified in Table 2.1.3-1 as ASME Code Section III. A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds. A report exists and concludes that the results of the hydrostatic test of the pressure boundary components (RV, CRDMs, and incore instrument QuickLoc assemblies) conform with the requirements of the ASME Code Section III.</p>

90	2.2.01.01	1. The functional arrangement of the CNS and associated systems is as described in the Design Description of this Section 2.2.1.	Inspection of the as-built system will be performed.	The as-built CNS conforms with the functional arrangement as described in the Design Description of this Section 2.2.1.
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91	2.2.01.02a	<p>2.a) The components identified in Table 2.2.1-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 2.b) The piping identified in Table 2.2.1-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements. 3.a) Pressure boundary welds in components identified in Table 2.2.1-1 as ASME Code Section III meet ASME Code Section III requirements. 3.b) Pressure boundary welds in piping identified in Table 2.2.1-2 as ASME Code Section III meet ASME Code Section III requirements. 4.a) The components identified in Table 2.2.1-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure. 4.b) The piping identified in Table 2.2.1-2 as ASME Code Section III retains its pressure boundary integrity at its design pressure.</p>	<p>Inspection will be conducted of the as-built components and piping as documented in the ASME design reports. Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III. i) A hydrostatic or pressure test will be performed on the components required by the ASME Code Section III to be tested. A hydrostatic or pressure test will be performed on the piping required by the ASME Code Section III to be pressure tested.</p>	<p>The ASME Code Section III design reports exist for the as-built components and piping identified in Table 2.2.1-1 and 2.2.1-2 as ASME Code Section III. A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds. i) A report exists and concludes that the results of the pressure test of the components identified in Table 2.2.1-1 as ASME Code Section III conform with the requirements of the ASME Code Section III. A report exists and concludes that the results of the pressure test of the piping identified in Table 2.2.1-2 as ASME Code Section III conform with the requirements of the ASME Code Section III.</p>
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109	2.2.01.08	8. Containment electrical penetration assemblies are protected against currents that are greater than the continuous ratings.	An analysis for the as-built containment electrical penetration assemblies will be performed to demonstrate (1) that the maximum current of the circuits does not exceed the continuous rating of the containment electrical penetration assembly, or (2) that the circuits have redundant protection devices in series and that the redundant current protection devices are coordinated with the containment electrical penetration assembly's rated short circuit thermal capacity data and prevent current from exceeding the continuous current rating of the containment electrical penetration assembly.	Analysis exists for the as-built containment electrical penetration assemblies and concludes that the penetrations are protected against currents which are greater than their continuous ratings.
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120	2.2.02.02a	<p>2.a) The components identified in Table 2.2.2-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 2.b) The pipelines identified in Table 2.2.2-2 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 3.a) Pressure boundary welds in components identified in Table 2.2.2-1 as ASME Code Section III meet ASME Code Section III requirements. 3.b) Pressure boundary welds in the pipelines identified in Table 2.2.2-2 as ASME Code Section III meet ASME Code Section III requirements. 4.a) The components identified in Table 2.2.2-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure. 4.b) The pipelines identified in Table 2.2.2-2 as ASME Code Section III retain their pressure boundary integrity at their design pressure. 5.b) Each of the pipelines identified in Table 2.2.2-2 for which functional</p>	<p>Inspection will be conducted of the as-built components and piping as documented in the ASME design reports. Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III. A hydrostatic test will be performed on the components and piping required by the ASME Code Section III to be hydrostatically tested. Inspection will be performed for the existence of a report concluding that the as-built pipelines meet the requirements for functional capability.</p>	<p>The ASME Code Section III design reports exist for the as-built components and piping identified in Table 2.2.2-1 and 2.2.2-2 as ASME Code Section III. A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds. A report exists and concludes that the results of the hydrostatic test of the components and piping identified in Table 2.2.2-1 and 2.2.2-2 as ASME Code Section III conform with the requirements of the ASME Code Section III. A report exists and concludes that each of the as-built pipelines identified in Table 2.2.2-2 for which functional capability is required meets the requirements for functional capability.</p>
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		capability is required is designed to withstand combined normal and seismic design basis loads without a loss of its functional capability.		
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159	2.2.03.02a	<p>2.a) The components identified in Table 2.2.3-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 2.b) The piping identified in Table 2.2.3-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements. 3.a) Pressure boundary welds in components identified in Table 2.2.3-1 as ASME Code Section III meet ASME Code Section III requirements. 3.b) Pressure boundary welds in piping identified in Table 2.2.3-2 as ASME Code Section III meet ASME Code Section III requirements. 4.a) The components identified in Table 2.2.3-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure. 4.b) The piping identified in Table 2.2.3-2 as ASME Code Section III retains its pressure boundary integrity at its design pressure. 5.b) Each of the lines identified in Table 2.2.3-2 for which functional capability is required is</p>	<p>Inspection will be conducted of the as-built components and piping as documented in the ASME design reports. Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III. A hydrostatic test will be performed on the components and piping required by the ASME Code Section III to be hydrostatically tested. Inspection will be performed for the existence of a report verifying that the as-built piping meets the requirements for functional capability. Inspection will be performed for the existence of an LBB evaluation report or an evaluation report on the protection from dynamic effects of a pipe break. Section 3.3, Nuclear Island Buildings, contains the design descriptions and inspections, tests, analyses, and acceptance criteria for protection from the dynamic effects of pipe rupture.</p>	<p>The ASME Code Section III design reports exist for the as-built components and piping identified in Table 2.2.3-1 and 2.2.3-2 as ASME Code Section III. A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds. A report exists and concludes that the results of the hydrostatic test of the components and piping identified in Table 2.2.3-1 and 2.2.3-2 as ASME Code Section III conform with the requirements of the ASME Code Section III. A report exists and concludes that each of the as-built lines identified in Table 2.2.3-2 for which functional capability is required meets the requirements for functional capability. An LBB evaluation report exists and concludes that the LBB acceptance criteria are met by the as-built RCS piping and piping materials, or a pipe break evaluation report exists and concludes that protection from the dynamic effects of a line break is provided.</p>
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		designed to withstand combined normal and seismic design basis loads without a loss of its functional capability. 6. Each of the as-built lines identified in Table 2.2.3-2 as designed for LBB meets the LBB criteria, or an evaluation is performed of the protection from the dynamic effects of a rupture of the line.		
176	2.2.03.08b.02	8.b) The PXS provides core decay heat removal during design basis events.	2. Inspection of the elevation of the PRHR HX will be conducted.	2. The elevation of the centerline of the HX's upper channel head is greater than the HL centerline by at least 26.3 ft.
186	2.2.03.08c.iv.04	8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	iv) Inspections of the elevation of the following pipe lines will be conducted: 4. PRHR HX outlet line to SG connection	iv) The maximum elevation of the top inside surface of these lines is less than the elevation of: 4. PRHR HX lower channel head top inside surface
187	2.2.03.08c.v.01	8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	v) Inspections of the elevation of the following tanks will be conducted: 1. CMTs	v) The elevation of the bottom inside tank surface is higher than the direct vessel injection nozzle centerline by the following: 1. CMTs \geq 7.5 ft

597	2.6.03.02.i	2. The seismic Category I equipment identified in Table 2.6.3□1 can withstand seismic design basis loads without loss of safety function.	i) Inspection will be performed to verify that the seismic Category I equipment identified in Table 2.6.3□1 is located on the Nuclear Island. ii) Type tests, analyses, or a combination of type tests and analyses of seismic Category I equipment will be performed. iii) Inspection will be performed for the existence of a report verifying that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.	i) The seismic Category I equipment identified in Table 2.6.3□1 is located on the Nuclear Island. ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function. iii) A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.
760	3.3.00.02a.i.a	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads.	i.a) A report exists which reconciles deviations during construction and concludes that the as-built containment internal structures, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.

761	3.3.00.02a.i.b	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads.	i.b) A report exists which reconciles deviations during construction and concludes that the as-built shield building structures, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.
762	3.3.00.02a.i.c	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads.	i.c) A report exists which reconciles deviations during construction and concludes that the as-built structures in the non-radiologically controlled area of the auxiliary building, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.

763	3.3.00.02a.i.d	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads.	i.d) A report exists which reconciles deviations during construction and concludes that the as-built structures in the radiologically controlled area of the auxiliary building, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.
820	3.3.00.14	14. The external walls, doors, ceiling, and floors in the main control room, the central alarm station, and the secondary alarm station are bullet-resistant to at least Underwriters Laboratory Ballistic Standard 752, level 4. 15. Deleted	Type test, analysis, or a combination of type test and analysis will be performed for the external walls, doors, ceilings, and floors in the main control room, the central alarm station, and the secondary alarm station.	A report exists and concludes that the external walls, doors, ceilings, and floors in the main control room, the central alarm station, and the secondary alarm station are bullet-resistant to at least Underwriters Laboratory Ballistic Standard 752, level 4.