



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

October 21, 2015

Mr. Kelvin Henderson
Site Vice President
Duke Energy Carolinas, LLC
Catawba Nuclear Station
4800 Concord Road
York, SC 29745

SUBJECT: CATAWBA NUCLEAR STATION - NRC COMPONENT DESIGN BASES
INSPECTION REPORT 05000413/2015007 AND 05000414/2015007

Dear Mr. Henderson:

On, September 17, 2015, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Catawba Nuclear Station, Units 1 and 2, and discussed the results of this inspection with Tom Simril and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

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

In accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding," of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA: Eric Stamm for/
Jonathan H. Bartley, Chief
Engineering Branch 1
Division of Reactor Safety

Docket Nos.: 50-413, 50-414
License Nos.: NPF-35, NPF-52

Enclosure:
Inspection Report 05000413/2015007 and 05000414/2015007,
w/Attachment: Supplementary Information

cc: Distribution via ListServ

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SIGNATURE	DMK (EMAIL)	SPS (EMAIL)	EJS2	TXS2 (EMAIL)	GHG1 (EMAIL)	SJG3 (EMAIL)	FJE
NAME	DKERN	SSANCHEZ	ESTAMM	TSU	GGARDNER	SGARDNER	FEHRHARDT
DATE	10/6/2015	10/6/2015	10/6/2015	10/6/2015	10/7/2015	10/15/2015	10/21/2015
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
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SIGNATURE	EJS2 FOR JHB1						
NAME	JBARTLEY						
DATE	10/21/2015						
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 050000413, 05000414

License Nos.: NPF-35, NPF-52

Report Nos.: 05000413/2015007, 05000414/2015007

Licensee: Duke Energy Carolinas, LLC

Facility: Catawba Nuclear Station, Units 1 and 2

Location: York, SC 29745

Dates: August 10 – September 17, 2015

Inspectors: E. Stamm, Senior Reactor Inspector (Lead)
D. Kern, Senior Reactor Inspector (Region I)
S. Sanchez, Senior Emergency Preparedness Inspector
T. Su, Reactor Inspector
G. Gardner, Contractor
S. Gardner, Contractor

Approved by: Jonathan H. Bartley, Chief
Engineering Branch 1
Division of Reactor Safety

Enclosure

SUMMARY

IR 05000413/2015-007 and 05000414/2015-007; 08/10/2015 – 09/17/2015; Catawba Nuclear Station, Units 1 and 2; Component Design Bases Inspection.

This inspection was conducted by a team of three Nuclear Regulatory Commission (NRC) inspectors from Region II, one NRC inspector from Region I, and two NRC contract personnel. No findings or violations of more than minor significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using the NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," (SDP), dated April 29, 2015. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process" Revision 5.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R21 Component Design Bases Inspection (71111.21)

.1 Inspection Sample Selection Process

The team selected risk-significant components and related operator actions for review using information contained in the licensee's probabilistic risk assessment. In general, this included risk significant structures, systems, and components (SSCs) that had a risk achievement worth factor greater than 1.3 or Birnbaum value greater than 1E-6. The sample included 15 SSCs, 1 SSC associated with containment large early release frequency (LERF), and 3 operating experience (OE) items.

The team performed a margin assessment and a detailed review of the selected risk-significant components and associated operator actions to verify that the design bases had been correctly implemented and maintained. Where possible, this margin was determined by the review of the design basis and Updated Final Safety Analysis Report (UFSAR). This margin assessment also considered original design issues, margin reductions due to modifications, or margin reductions identified as a result of material condition issues. Equipment reliability issues were also considered in the selection of components for a detailed review. These reliability issues included items related to failed performance test results, significant corrective action, repeated maintenance, maintenance rule status, Inspection Manual Chapter 0326 conditions, NRC resident inspector input regarding problem equipment, system health reports, industry OE, and licensee problem equipment lists. Consideration was also given to the uniqueness and complexity of the design, OE, and the available defense-in-depth margins. An overall summary of the reviews performed and the specific inspection findings identified is included in the following sections of the report.

.2 Component Reviews

a. Inspection Scope

SSCs

- Unit 1/Unit 2 Turbine Driven Auxiliary Feed Water Pumps (1-CAPT and 2-CAPT)
- Unit 1 Component Cooling Heat Exchangers (KCHX-1A and KCHX-1B)
- Unit 1 Diesel Ventilation System (VD)
- Unit 1 Diesel Lube Oil System (LD)
- Unit 1 Diesel Fuel Oil System (FD)
- Unit 1 Charging Pumps (NV-1A and NV-1B)
- Unit 1 Refueling Water Storage Tank (Unit 1 FWST)
- Unit 1 ND to NI and NV Pump Suction Motor Operated Valves (MOVs) (1ND-28A and 1NI-136B)
- Unit 1 4160V Emergency Switchgear (1ETB)
- Unit 1 4160V Component Cooling (KC) Pump Circuit Breakers (1ETB-6 and 1ETB-7)

- Unit 2 Diesel Batteries (2DGBA and 2DGBB)
- Unit 1 125V Vital I&C Power Distribution Center (1EDE)
- Unit 1 Auctioneering Diode Assembly (1VADB)
- Unit 1 Channel D Vital Power (1EID, 1EBD, 1ECD)
- Unit 1 120V AC Panel (1ERPD)

Components with LERF Implications

- Unit 1/Unit 2 Hydrogen Ignition System (EHM)

For the 16 components listed above, the team reviewed the plant technical specifications (TS), UFSAR, design bases documents, and drawings to establish an overall understanding of the design bases of the components. Design calculations and procedures were reviewed to verify that the design and licensing bases had been appropriately translated into these documents. Test procedures and recent test results were reviewed against design bases documents to verify that acceptance criteria for tested parameters were supported by calculations or other engineering documents, and that individual tests and analyses served to validate component operation under accident conditions. Maintenance procedures were reviewed to ensure components were appropriately included in the licensee's preventive maintenance program. System modifications, vendor documentation, system health reports, preventive and corrective maintenance history, and corrective action program documents were reviewed (as applicable) in order to verify that the performance capability of the component was not negatively impacted, and that potential degradation was monitored or prevented. Maintenance Rule information was reviewed to verify that the component was properly scoped, and that appropriate preventive maintenance was being performed to justify current Maintenance Rule status. Component walk downs and interviews were conducted to verify that the installed configurations would support their design and licensing bases functions under accident conditions, and had been maintained to be consistent with design assumptions.

Additionally, the team performed the following specific reviews:

- The team observed a simulator scenario involving time critical operator actions for aligning emergency core cooling system suction from the refueling water storage tank to the containment emergency sump (cold leg recirculation). The team verified that the required operator actions could be accomplished within the required times and as relied upon in design assumptions and in accordance with approved licensee procedures.
- The team observed a simulator scenario involving time critical operator actions to identify and terminate a boron dilution event for Modes 3, 4, or 5. The team verified that the actions could be accomplished as relied upon in design assumptions and in accordance with approved licensee procedures.
- The team performed table-top reviews, with a licensed operator, of several abnormal and emergency procedures to better understand actions to be taken to:
 - 1) throttle auxiliary feedwater (CA) flow to intact steam generators (SGs) after a loss of instrument air
 - 2) manually secure CA flow to a ruptured SG within required times
 - 3) establish safety injection flow from initiation of a shutdown loss of coolant accident (LOCA).

The team also conducted in-field walkdowns of these procedures to verify the actions could be accomplished within the assumed timeframe, that there was sufficient guidance in the procedures to properly complete the tasks, that equipment or tools necessary to assist in accomplishing these tasks were available in the designated locations, and that the areas requiring accessibility were indeed accessible. In addition, the team interviewed operators qualified to these tasks to ensure their knowledge and training was sufficient to successfully accomplish the tasks.

b. Findings

No findings were identified.

.3 Operating Experience

a. Inspection Scope

The team reviewed three operating experience issues for applicability at Catawba Nuclear Station. The team performed an independent review for these issues and, where applicable, assessed the licensee's evaluation and disposition of each item. The issues that received a detailed review by the team included:

- NRC Information Notice 93-64, "Periodic Testing and Preventive Maintenance of Molded Case Circuit Breakers"
- NRC Regulatory Issue Summary 2006-23, "Post-Tornado Operability of Ventilating and Air-conditioning Systems Housed in Emergency Diesel Generator Rooms"
- NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling Decay Heat Removal, and Containment Spray Systems"

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA6 Meetings, Including Exit

On September 17, 2015, the team presented the inspection results to Mr. Tom Simril and other members of the licensee's staff. Proprietary information that was reviewed during the inspection was returned to the licensee or destroyed in accordance with prescribed controls.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

S. Andrews, Senior Engineer
G. Black, Electrical Engineering
J. Brady, Regulatory Affairs, General Office
M. Brigman, Mechanical Systems Engineer
B. Cauthen, System Engineer
W. Coble, SSPS System Engineer
M. Dickson, Design Engineering
K. Fleischer, Consultant
C. Fletcher, Regulatory Affairs Manager
A. Goodman, Regulatory Affairs, General Office
E. Haack, Principle Mechanical Design Engineer
K. Hear, Electrical System Engineer
K. Henderson, Catawba Site Vice President
R. Herring, Mechanical Systems Engineer
C. Holden, Consultant
C. Hood, System Engineer
T. Jackson, Lead Licensing Engineer
D. Kulla, Design Engineering Supervisor
P. Lomoriello, Component Engineer
D. Mason, Component Engineer
A. Michalski, AOMT
M. Miller, System Engineer
T. Pasour, Regulatory Affairs Staff
T. Poetzsch, Director, Mechanical Systems Engineering
D. Shever, System Engineer
P. Simpson, EDG System Engineer
T. Simril, Plant Manager
S. Steele, Mechanical Procurement Engineering Manager
M. Swim, Regulatory Affairs, General Office
R. Treadway, Regulatory Affairs, General Office
R. White, Electrical Engineering
B. Zimmerman, System Engineer

NRC personnel:

J. Bartley, Chief, Engineering Branch 1, Division of Reactor Safety, Region II
R. Bernhard, Senior Reactor Analyst, Division of Reactor Projects, Region II
A. Hutto, Senior Resident Inspector, Division of Reactor Projects, Catawba Resident Office
L. Pressley, Resident Inspector, Division of Reactor Projects, Catawba Resident Office
J. Parent, Acting Resident Inspector, Division of Reactor Projects, Catawba Resident Office

LIST OF DOCUMENTS REVIEWED

Calculations

- CNC-1206.03-00-0101, Tornado Protection Due to Postulated Tornado Event, Rev. 7
- CNC-1210.04-00-0130, Refueling Water Storage Tank (FWST) Narrow Range Level Scaling and Accuracy, Rev. 3
- CNC-1211.00-00-0013, Diesel Generator Building HVAC Calculations, Rev. 27
- CNC-1223.02-00-0005, Minimum Height of Water Above Outlet Nozzle Required to Prevent Vortexing on the Outflow of Tanks, Rev. 0
- CNC-1223.04-00-0107, VCT NPSH and Low-Low Level Auto-swap Setpoint, Rev. 0
- CNC-1223.04-00-0116, Flowserve Overpressure Evaluation of Centrifugal Charging Pumps, Rev. 0
- CNC-1223.11-00-0022, GL 95-07 Pressure Locking and Thermal Binding Review of ND System Valves, Rev. 3
- CNC-1223.11-00-0048, Evaluation of Potential Steam Voids in ECCS Alignments, Rev. 3
- CNC-1223.11-00-0050, Evaluation of Gas Transport in Catawba ND Pump Suctions Piping (NAI-1463-001), Rev. 0
- CNC-1223.12-00-0054, GL 95-07 Pressure Locking and Thermal Binding Review of ND System Valves, Rev. 2
- CNC-1223.12-00-0076, Evaluation of Systems (ND, NI, NV, FW, NS) for Generic Letter 2008-01 Response, Rev. 3
- CNC-1223.12-00-0079, Acceptable Gas Volumes (Suction Side of Pumps) for PT/1(2)/A/4200/006B, Rev. 1
- CNC-1223.21-00-0002, RWST vent sizing, Rev. 2
- CNC-1223.21-00-0004, Level Setpoints for Refueling Water Storage Tank, Rev. 5
- CNC-1223.21-00-0005, Sizing of Refueling Water Storage Tank Missile Shield Wall. Rev. 4
- CNC-1223.21-00-0009, RWST overflow verification, Rev. 2
- CNC-1223.40-01-0003, Determination of Condensate Volume for Cooldown to RHR Conditions, Rev. 0
- CNC-1223.43-02-0009, SA System TDAFWP Steam Supply Pipe Heat Tracing Operability Evaluation, Rev. 6
- CNC-1223.43-02-0012, Calculation of Maximum Operator Response Time for SA Heat Trace System Failure to De-energize Scenario, Rev. 1
- CNC-1223.59-02-0001, DG Lube Oil System, Pressure, Temperature and Level Setpoints, Rev.8
- CNC-1223.59-02-0002, Diesel Generator Prelube Oil Pump NPSH Verification, Rev. 4
- CNC-1223.59-02-0003, Diesel Generator Lube Oil system Verification Calculation, Rev. 9
- CNC-1223.59-02-0005, Clean Lube Oil Storage Tank Level Verification vs NPSH Requirements, Rev.1
- CNC-1223.59-02-0006, LD Minimum Temperature Surveillance Documentation, Rev. 0
- CNC-1223.59-03-0002, Diesel Generator Fuel Oil Storage Tank Low, Tech Spec, and High Level Setpoints, Rev. 6
- CNC-1223.59-03-0004, Diesel Generator Fuel oil Day Tank Level Setpoints, Rev. 7
- CNC-1223.59-03-0005, Diesel Generator Engine Fuel Oil System Filter, Strainer, and system Pressure Alarm Setpoints, Rev. 5
- CNC-1223.59-03-0006, Diesel Generator Engine Driven Fuel Oil Pump NPSHA Verification, Rev. 8
- CNC-1223.59-03-0007, Diesel Generator Fuel Oil System Verification Calculations, Rev. 2
- CNC-1223.59-03-0011, Design Basis Calculation for Fuel Oil Storage Tank Level, Rev. 5
- CNC-1223.59-03-0012, Design Basis Calculation for Fuel Oil Day Tank Level, Rev. 2

CNC-1223.59-03-0014, Operability Evaluation for Diesel Generator Fuel Oil Storage Tank Vent Line, Rev. 2
 CNC-1223.59-03-0015, FD Filter Pressure Setpoint Determination, Rev. 1
 CNC-1223.59-03-0017, Loss of Cylinder Analysis, Rev. 1
 CNC-1341.00-00-0001, Min Voltage from EMXS for H2 Mitigation System to Function, Rev. 0
 CNC-1381.05-00-0012, 4160V Essential Aux Pwr System Switchgear Relay Setting, Rev. 16
 CNC-1381.05-00-0050, 125VDC Diesel Generator Battery and Charger Sizing Calc, Rev. 10
 CNC-1381.05-00-0069, Environmental Qualification of Class 1E Components Located in Duke Designed Enclosures, Rev. 2
 CNC-1381.05-00-0135, U1/2, 125VDC Vital I&C Power System (EPL) Short Circuit Analysis, Rev. 5, Dated 7/19/07
 CNC-1381.05-00-0135-ICC-0001, 5a-Replacement of Unit 1/2 A&B Train 125VDC Vital I&C System (EPL) Cables from 125VDC Vital Battery Distribution Center 1EDA(D) through Auctioneering Diode EADA (B) to 125VDC Distribution Center EDE(F), Dated 04/15/13
 CNC-1381.05-00-0135-ICC-0002, 6A-Replace the 125 VDC Vital I&C Battery Chargers, Rev. 00, Dated 04/15/13
 CNC-1381.05-00-0135-ICC-0003, 6B-Replace Fuses on EPL distribution panels 1(2) EDA, EDB, EDC, and EDD, Dated 04/15/13
 CNC-1381.05-00-0135-ICC-0004, 7A-Replace EPQ Breaker and Cable, Dated 04/15/13
 CNC-1381.05-00-0135-ICC-0005, 7B-Replace EPQ Breaker and Cable, Dated 04/15/13
 CNC-1381.05-00-0135-ICC-0006, 7C-Proposed Modification to Purchase Larger Batteries for the EPL System, Dated 04/15/13
 CNC-1381.05-00-0135-ICC-0007, Add Fuses in Series with Breaker in 2EDE and 2EDF Distribution Centers, Rev. 00, Rev. 0, Dated 12/18/14
 CNC-1381.05-00-0135-ICC-0008, Add Fuses in Series with Breaker in 1EDF Distribution Centers, Rev. 00, Dated 08/11/14
 CNC-1381.05-00-0135-ICC-0009, Add Fuses in Series with Breaker in 2EDE and 2EDF Distribution Centers, Rev. 01, Dated 02/17/15
 CNC-1381.05-00-0135-ICC-0010, Add Fuses in Series with Breaker in 1EDE and 1EDF Distribution Centers, Dated 02/02/15
 CNC-1381.05-00-0150, Essential DG 125VDC Aux Power System SBO Battery Sizing, Rev. 5
 CNC-1381.05-00-0151, Voltage Analysis for 125VDC Essential DG Aux Pwr during SBO, Rev.5
 CNC-1381.05-00-0198, Unit 1 6.9KV & 600V Aux Pwr System SR Voltage Analysis, Rev. 13
 CNC-1381.05-00-0209, 6.9KV, 4.16KV and 600V Aux Power Short Circuit Analysis, Rev. 3
 CNC-1381.05-00-0243, Intercell Resistance Calculation for 125VDC Vital I&C Battery System (EPL) and 125 VDC Essential Diesel Auxiliary Power Battery System (EPQ), Dated 7/26/10
 CNC-1552.08-00-0387, Diesel Generator Room Ventilation Dampers Response to a Design Basis Tornado Event, Rev. 1
 CNC-1552.08-00-4264, RWST Level Setpoints (PIP 06974085) Appendix J., Rev. 11
 CNM-1148.00-0053.001, Seismic Stress Analysis of ASME Section III Class 2 Tanks (RWST), Dated 9/25/86

Completed Procedures

OP/2/A/6550 001, Recirculating Diesel Fuel Oil Tanks, Performed 7/22/15
 PT/0/A/4150/019 B, NC System Dilution following Refueling, Performed 6/18/08
 PT/0/A/4700/061, Time Critical Operator Action Review, Performed 6/9/14
 PT/1/A/4200/004 B, Containment Spray Pump 1A Performance Test, Performed 5/14/15
 PT/1/A/4200/004 C, Containment Spray Pump 1B Performance Test, Performed 8/06/15
 PT/1/A/4200/006 B, ECCS Valve Lineup Verification, Performed 8/04/15
 PT/1/A/4200/006 D, ECCS Throttle Valve Mechanical Stop Position Verification, Performed 5/29/14

PT/1/A/4350/002 A, Diesel Generator 1A Operability Test, Performed 5/20/15 and 8/15/15
 PT/1/A/4350/002 B, Diesel Generator 1B Operability Test, Performed 9/4/13
 PT/1/A/4400/006 C, KC Heat Exchanger 1A Heat Capacity Test, Performed 11/24/12
 PT/1/A/4400/009, Cooling Water Flow Monitoring for Asiatic Clams and Mussels Test,
 Performed 9/28/13, 11/10/13, 12/21/13, 4/26/14, 10/18/14, 12/6/14, 4/18/15, and 6/6/15
 PT/1/A/4550/004, D/G Fuel Oil Storage Tank Water Inspection, Performed 7/20/15
 PT/1/A/4600/002 A, Mode 1 Periodic Surveillance Items, Performed 7/12/15, 7/17/15, & 7/26/15
 PT/2/A/4200/004 B, Containment Spray Pump 2A Performance Test, Performed 7/23/15
 PT/2/A/4200/004 C, Containment Spray Pump 2B Performance Test, Performed 4/30/15
 PT/2/A/4200/006 B, ECCS Valve Lineup Verification, Performed 7/27/15
 PT/2/A/4350/002, Diesel Generator 2A Operability Test, Performed 8/11/15

Completed Work Orders

WO 96066902, Refurbish Spare 5HK Breaker, Performed 2/4/97
 WO 00903504, Perform Inspection of Auctioning Diode Assemblies, Performed 12/10/97
 WO 00934715, 1VD DA DSFD01 - Replace Damper Motor Assy, Performed 7/28/11
 WO 00943538, 1VD DA DSFD03 - Replace Damper Motor Assy, Performed 10/16/12
 WO 00974013, 1VD DA DSFD02 – Pfm. Inspect/PM (Damper & Hydramotor), Performed
 2/23/15
 WO 01026263, Verify Correct Operation of Auctioning Diode Assembly, Dated 08/17/04
 WO 01778619, 2SA145 Replace Screw Spindle & Slip Ring, Performed 4/02/09
 WO 01857952 01, Verify Correct Operation of Auctioning Diode Assembly, Performed
 12/20/11
 WO 01908973, Refurbish Spare 5-HK Breaker, Performed 6/10/10
 WO 01915329, 2SA145* Perform Comprehensive Limitorque PM, Performed 4/15/10
 WO 02090601, 1-R-FW-0002; Perform ISI Visual Inspection (VT-3), Performed 5/14/14
 WO 02094201, Replace D/G-1B Tach Relay Power Supply, Performed 4/30/13
 WO 02099398, 1EHT CA CTCCSA: Inspect SA Heat Trace, Performed 12/31/13
 WO 02111490, 1EHT CA CTCCSA: Calibrate Heat Trace Controller, Performed 6/18/14
 WO 02137493, 1FW TK 0001; Insp. FWST Tank Internals / Bottom Tank Welds, Performed
 5/24/14
 WO 02142787, 1SA145* Perform Comprehensive Limitorque PM, Performed 9/18/14
 WO 02143844, 2EHT – Inspect SA Heat Trace, Performed 9/23/14
 WO 02155226, 2DGGB Perform Battery Service Test, Performed 3/13/15
 WO 02156138, 2EHT PL CTCCSA: Calibrate Heat Trace Controllers, Performed 3/29/15
 WO 02157613, EC 110305 Install U1 FD System Connection for Portable Pump, Performed
 5/14/15
 WO 02159066, EC 110305 Install U2 FD System Connection for Portable Pump, Performed
 11/3/14
 WO 02173938, Refurbish Spare 5-HK Breaker, Performed 8/26/15

Corrective Action Program Documents

AR 00268237	AR 01502895	AR 01521344
AR 00326885	AR 01504346	AR 01522314
AR 01344910	AR 01507930	AR 01523095
AR 01456109	AR 01508031	AR 01523464
AR 01494558	AR 01509948	AR 01526142
AR 01498079	AR 01513815	AR 01526423
AR 01499539	AR 01515261	AR 01526910
AR 01501430	AR 01516493	AR 01528108
AR 01501490	AR 01520233	AR 01529566

AR 01532794	AR 01897471	PIP C-12-07717
AR 01534642	AR 01897850	PIP C-12-09946
AR 01535149	AR 01900921	PIP C-13-05044
AR 01535251	AR 01928776	PIP C-13-06688
AR 01535297	AR 01932558	PIP C-14-00293
AR 01536721	AR 01935401	PIP C-14-01575
AR 01537113	AR 01935545	PIP C-14-03427
AR 01537606	AR 01935625	PIP C-14-05796
AR 01538473	AR 01937903	PIP C-14-06198
AR 01539867	AR 01943385	PIP C-14-06246
AR 01541392	AR 01953722	PIP C-14-07071
AR 01541915	PIP C-99-00691	PIP C-14-09722
AR 01588214	PIP C-06-03314	PIP C-14-10290
AR 01897264	PIP C-08-07140	PIP C-14-10780
AR 01897410	PIP C-11-05581	PIP C-15-00611
AR 01897410	PIP C-12-01063	PIP C-15-01604
AR 01898080	PIP C-12-04000	PIP C-15-03448
AR 01898164	PIP C-12-05457	PIP C-15-04418
AR 01898590	PIP C-12-05464	PIP G-93-00053
AR 01898671	PIP C-12-07121	

Design Basis Documents

CA-2.03, Three-conductor Cable Impedances for Use in ETAP Analyses and Other Power System Calculations, Rev. 1

Catawba Units 1 & 2 Site License Commitment (SLC) 6.17-13, Auxiliary Feedwater Steam Supply Pipe Temperature Monitoring System

CNM-1148.00-30, Unit 1 Data Book Figure 22 – Upper Surge Tank Volume vs. Level, Rev. 1

CNM-1202.00-01, Unit 1 Data Book Figure 11 – Hotwell Volume vs. Level, Rev. 2

CNS-0106.01-EPG-0001, Design Basis Specifications for the 120VAC Vital Instrumentation and Control Power System (EPG), Rev. 7

CNS-0106.01-EPL-001, Design Basis Specifications for the 125 VDC Vital I&C Power System (EPL), Rev. 11

CNS-0106.03-EPQ-0001, Design Basis for EPQ (125VDC DG Aux Pwr) System, Rev. 13

CNS-0115.01-EPC-0001, 4.16KV Essential Power System (EPC) and Class 1E D/G Protective Relaying and Metering System (ERN), Rev. 14

CNS-0165.EHM-00-0001, Hydrogen Mitigation System (EHM), Rev. 14

CNS-0354.05-EHT-0001, Electrical Heat Tracing System (EHT), Rev. 10

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