



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

September 16, 2022

Mr. John Ferrick, Site Vice President
Entergy Operations, Inc.
17265 River Road
Killona, LA 70057

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 – DIGITAL
INSTRUMENTATION AND CONTROL MODIFICATION INSPECTION REPORT
05000382/2022012

Dear Mr. Ferrick:

On August 11, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Waterford Steam Electric Station, Unit 3 and discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

No findings or violations of more than minor significance were identified during this inspection.

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 Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

A handwritten signature in black ink that reads "James F. Drake".

Signed by Drake, James
on 09/16/22

James F. Drake, Chief
Engineering Branch 2
Division of Operating Reactor Safety

Docket No. 05000382
License No. NPF-38

Enclosure:
As stated

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WATERFORD STEAM ELECTRIC STATION, UNIT 3 – DIGITAL INSTRUMENTATION AND CONTROL MODIFICATION INSPECTION REPORT 05000382/2022012 DATED SEPTEMBER 16, 2022

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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Number: 05000382

License Number: NPF-38

Report Number: 05000382/2022012

Enterprise Identifier: I-2022-012-0003

Licensee: Entergy Operations, Inc.

Facility: Waterford Steam Electric Station, Unit 3

Location: Killona, LA

Inspection Dates: May 01, 2022 to July 01, 2022

Inspectors: S. Makor, Reactor Inspector, Team Lead
D. Childs, Resident Inspector
S. Darbali, Electronics Engineer
K. Lawson-Jenkins, IT Specialist (Cyber)
A. Patz, Senior Resident Inspector
C. Stott, Resident Inspector
D. Zhang, Senior Reactor Operations Engineer

Approved By: James F. Drake, Chief
Engineering Branch 2
Division of Operating Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a Digital Instrumentation and Control Modification Inspection at Waterford Steam Electric Station, Unit 3, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

No findings or violations of more than minor significance were identified.

Additional Tracking Items

None.

INSPECTION SCOPES

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

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

52003 - Digital Instrumentation and Control Modification Inspection

Digital Instrumentation and Control Modification Inspection (1 Sample)

(1) Digital Instrumentation and Control Modification Inspection (1 Sample)

The NRC issued Amendment No. 260 to Renewed Facility Operating License No. NPF 38 for the Waterford Steam Electric Station, Unit 3. This amendment revises various technical specifications in order for the licensee to implement a planned modification that will replace the existing core protection calculator (CPC) system and the control element assembly calculator (CEAC) system with a Westinghouse Electric Company (WEC) Core Protection Calculator System (CPCS).

This third and final phase focused on the site installation activities and the purpose of these inspections was to confirm that the upgrade to the system conformed to the plant-specific licensing basis and satisfies applicable guidance for the digital upgrade. The inspectors performed this inspection to evaluate the licensee's performance of installation activities through record review and direct observation.

The inspectors focused on the licensee's conduct and performance of the installation activities and verified open items from the Site Acceptance Testing (SAT) and recommended inspection items. The inspectors evaluated the installation and the continued verification of the licensee's performance of the Vendor Oversight Plan (VOP) activities through direct observation of the licensee's VOP performance on site. The inspectors evaluated, as available, whether the licensee developed, implemented, tested, installed, operated, and maintained the design according to the license amendment, safety evaluation, manufacturer's recommendations, and license commitments, including the commitments provided in the licensee's cyber security plan (CSP).

The inspectors confirmed that the licensee's upgrade to the system conformed to the plant-specific licensing basis and satisfied applicable guidance for this phase of the modification.

INSPECTION RESULTS

Observation: CPCS Site Installation	52003
<ul style="list-style-type: none"><li data-bbox="310 401 1406 596">• In accordance with the Inspection Manual Chapter (IMC) 2515 Appendix C, “Special and Infrequently Performed Inspections” procedure, all the requirements in Inspection Procedure 52003 are not needed to complete the inspection. Inspection completion is determined by the inspection team leader when the applicable sections of the inspection procedure for the modification being inspected according to the inspection plan are complete. <p data-bbox="358 632 1393 863">The inspectors conducted the Site Installation Phase, which is the third and final inspection phase of the digital instrumentation and modification as described below. Previous results from the Factory and Site Acceptance Testing for this digital upgrade are documented in standalone inspection reports, 05000382/2021011 ((Agencywide Document Access and Management System (ADAMS) Accession No. ML21308A066) and 05000382/2021014 (ADAMS Accession No. ML22067A159).</p> <p data-bbox="358 932 984 966">1.1 Licensee’s Vendor Oversight Plan (ref. 2.01)</p> <p data-bbox="358 1001 617 1035">a. Inspection Scope</p> <p data-bbox="358 1068 1417 1535">This portion of the inspection completed all applicable parts in section 02.01 of IP52003 for the Site Installation phase. The inspectors verified that the licensee audited vendor activities to ensure establishment and implementation of each Quality Assurance (QA) program attribute were performed in accordance with the licensee’s NRC-approved QA program and the VOP. The inspectors reviewed the results of Entergy’s oversight activities of WEC’s final implementation phase development activities and corresponding design outputs for the CPCS. Entergy oversight activities of the final implementation phase development activities included reviews of design outputs associated with changes made to the CPCS post factory acceptance testing (FAT). The inspectors also confirmed that Entergy conducted the audit activities identified in the WF3 CPCS VOP Summary, Revision 2, for the implementation phase development activities, including the licensee’s review of design artifacts associated with this lifecycle phase and the CPCS configuration release record documented post FAT.</p> <p data-bbox="358 1570 1390 1801">The inspectors reviewed the commitments made in the VOP and confirmed that the licensee verified that the critical characteristics (i.e., those important design, material, and performance characteristics of a system that once verified, would provide reasonable assurance that the system will perform its intended critical functions), as described in the VOP Summary, Revision 2. The inspectors’ observations of this activity are documented in the Observations and Findings section below.</p>	

- The inspectors reviewed the capture or tracking of commitments made in the VOP and confirmed that the licensee verified that the Technical Manual satisfies the requirements for the Software Operation Plan per the Common Q Software Program Manual.

The inspectors reviewed receipt inspection form OSD&D-0040223, "Assembly, CPC Four Channel Assembly, EA Channel 1 of 4 of the Four Channel Assembly," dated April 28, 2022, which captures several non-conformances identified by the licensee during the receipt inspection process, as well as their resolution. The inspectors reviewed the resolution of the non-conformances and discussed them with the licensee.

The inspectors reviewed WEC documentation highlighted in the Final Independent Verification and Validation (IV&V) VOP Audit Report. The inspectors' review of these documents is associated with NEI 08-09, "Cyber Security Plans for Nuclear Power Plants," Revision 6, Appendix E, for sections E 11.5 Developer Security Testing and E.11.6 Licensee Testing and verified that the licensee satisfied the requirements in their cyber security plan.

b. Observations and Findings

The inspectors reviewed a "VOP Characteristic Validation" table that the licensee generated to demonstrate how each specific critical characteristic (categorized as physical, performance, and environmental in the VOP Summary) was verified in the relevant engineering change documents and validated during the FAT. The inspectors observed that each critical characteristic traced to sections within EC-83843, "Design Change Package for Core Protection Calculator System Replacement," Revision 0, and WNA-TP-06781, "Four Channel System Test Procedure for the Common Q Core Protection Calculator System," Revision 0, except for the confirmations that the central processing unit (CPU) maximum load restrictions are implemented and meet the WF3 CPCS System Requirements Specifications. For the CPU maximum load restrictions, the licensee validated this critical characteristic through references to the following operating procedures:

(1) OP-004-003, Revision 13, "System Operating Procedure Control Element Assembly Calculation System,"

(2) OP-004-006, Revision 309, "System Operating Procedure Core Protection Calculator System," and

(3) OP-500-009, Revision 22, "Annunciator Response Procedure Control Room Cabinet K."

The inspectors determined that these operating procedures, as written, would allow the processor module loading limit to briefly exceed the maximum CPU load limit specified in the license amendment licensing technical report (LTR) and the WF3 CPCS System Requirements Specification during some plant conditions and transients.

- These operating procedures referenced WEC letter, LTR-GIC-21-061, “Discussion on Deterministic Operation and System Load Value.” The inspectors determined the LTR-GIC-21-061 allowed the CPU load limit to exceed the maximum load limit specified in the WF3 System Requirements Specification, which is contrary to the information provided in the license amendment request submittal, WCAP-18484-P, “Licensing Technical Report for the Waterford Steam electric Station Unit 3 Common Q Core Protection Calculator System,” and the NRC staff’s safety evaluation for the license amendment. Section 3.2.7.2. of WCAP-18484-P specifies the maximum CPU load limit, design restrictions, and tests imposed by the manufacturer of the Common Q platform used for the WF3 CPCS replacement project.

The NRC staff’s safety evaluation concluded that because the CPCS system requirements specification addresses the manufacture’s design restrictions and the licensee’s commitment in the VOP to audit the requirements traceability matrix to verify that restrictions have been implemented, the system’s deterministic behavior is maintained for the maximum CPU load limit specified in Section 3.2.7.2.7 of the WCAP-18484-P.

During discussions with Entergy and WEC staff regarding this inconsistency, WEC staff stated that although the CPU load limit can briefly exceed the maximum CPU load limit during certain transients of a theoretical plant, the design of the WF3 plant (e.g., the control rod movement physical limits) prevents conditions that would cause the WF3 CPCS CPU load limit to exceed the maximum specified CPU load limit. In response, Entergy modified the operating procedures to remove the note that allowed the CPU load limit to briefly exceed the maximum CPU load limit specified in the WF3 CPCS System Requirements Specification and any references to WEC LTR-GIC-21-061. Entergy created condition report CR-WF3-2022-05599 to document this issue and its resolution.

1.2 Design and Documentation Verification (ref. 2.02)

a. Inspection Scope

This portion of the inspection completed sections 02.02(a) of IP52003 for the Site Installation phase. The inspectors discussed how the licensee addressed following regulatory commitment included in the LAR. Specifically, “Entergy will evaluate Waterford CPCS Replacement Project Site Acceptance Test (SAT) and Installation Test Plans using the software process testing characteristics described in Branch Technical Position (BTP) 7-14 Section B.3.2.4. This is Plant Specific Action Item #5 per WCAP 16096, Software Program Manual for Common QTM Systems.”

The licensee explained that they used BTP 7-14, Section B.3.2.4 testing characteristics to evaluate the post-installation test plans and to verify the installation matches design drawings, integrity of plant interface, and equipment performance. The post-installation testing includes engineering change test (ECT) Functional Testing (ECT-83843-06), Performance Testing (ECT-83843-07), and Power Ascension Testing (ECT-83843-08). The licensee explained that all required functionality for all operating modes, including error recovery were tested

to satisfy the completeness requirement of BTP 7-14 Section B.3.2.4.

This portion of the inspection completed sections 02.02(b) of IP52003 for the Site Installation phase. The inspectors reviewed annunciator response procedures OP-500-008, Rev. 46, OP-500-009, Revision 22, and OP-500-010, Revision 39, for annunciator panels H, K, and L, respectively. These procedures provide direction to the operators for responding to CPCS trouble alarms caused by a CPC/CEAC failure or trouble, high cabinet temperature, or CPU load exceeding the maximum load limit.

Operating procedures OP-004-006, "Core Protection Calculator System," Revision 309, and OP-004-003, "Control Element Assembly Calculation System," Revision 13, provide direction for operators to respond to CPC and CEAC trouble alarms and to dispatch an I&C maintenance technician to troubleshoot and repair. These procedures also provide direction to generate a condition report to document component failure/trouble alarm and initiate actions to correct.

The inspectors reviewed OI-004-000, "Control Room Logs," Revision 38, which is used for the verification of CPCS system health, and review of CPCS channel system event list and failed sensor stack for conditions that could impact operability. This verification is performed once per shift.

The licensee explained that the CPCS is a tier 1 system that was subject to formal system performance monitoring plan and system health reporting in accordance with EN-DC-159, "System and Component Monitoring," Revision 20. System health reports were developed according to EN-DC-144, "System Health Reporting," Revision 2, and are required every 2 quarters. The CPCS also requires a system walkdown every quarter in accordance with EN-DC-178, "System Walkdowns," Revision 15.

The inspectors verified that the licensee had developed and implemented secure operational environment measures for the installed CPCS in accordance with the secure development and operational environment vulnerability assessment described in the CPCS license amendment request. The inspectors observed that the four Auxiliary Protection Cabinets (APC), which contains the four CPCS channels, incorporate the use of door locks and door alarm switches which provide an annunciator alarm in the control room. The functionality of the APC door alarm switches was verified during the performance of ECT-83843-06, "WF3 Post-Modification Functional Test." The inspectors observed that the APC door keys, and the Maintenance and Test Panel (MTP) software load enable switch keys were controlled by the shift supervisor.

The inspectors reviewed EN-IT-103-15-ATT-9.6_001, "CPC Project Cyber Security Final Attachment 6 Cyber Security Defensive Architecture & Technical Controls Integration Form," to verify implemented security controls were in accordance with the licensee's cyber security plan.

The inspectors reviewed CSWI No. 1280, "Monthly Operational Review and Verification of the SIEM Infrastructure", which is used to verify the health and integrity of the security information and event management (SIEM) system that monitors the health and integrity of critical digital assets.

This portion of the inspection completed section 02.02(d) of IP52003 for the Site Installation phase. The inspectors toured the cable spreading room and observed the cable locations and routing for the AF100 fiber optic cables coming from the CPCs in CP-22 to the operator modules (OMs) in CP-7, to the CEA Position Display System (CEAPDS) in CP-2, and to the printer server (used to collect the print screens) and the cyber security server (used to collect the security log files).

The inspectors reviewed the cables that connect the CPC and CEAC chassis including the grounding scheme for the CPC and CEAC chassis. The inspectors observed the location and routing of the high-speed link (HSL) connections between the channels and the technicians taking electrostatic discharge precautions during testing of the CPCS equipment.

The inspectors reviewed licensee documentation on the performance of vendor oversight activities in accordance with VOP, including documentation that demonstrates how the critical design characteristics were validated. The inspectors confirmed that documentation exists that identifies how the licensee verified physical and environmental critical characteristics, and performance critical characteristics related to input ranges and signal conditioning, video display units, surveillance testing, and on-line and offline self-test and diagnostic capabilities were met in the as-built CPCS.

b. Observations and Findings

No findings were identified.

1.3 Review of Testing, Operations, and Training (ref. 2.03)

a. Inspection Scope

This portion of the inspection completed section 02.03(a) of IP52003 for the Site Installation phase. The inspectors verified that the test procedures for ECT-83843-06, "WF3 Post-Modification Functional Test," Revision 1, ECT-83843-07, "WF3 Post Modification Performance Test," Revision 1, and ECT-83843-08, "WF3 CPCS Power Ascension Test," Revision 0, are sufficiently detailed to perform the required CPCS tests.

The Functional Test (ECT-83843-06) verified that the CPCS correctly inputs and processes signals from plant sensors and correctly outputs this information to the OM, MTP and CEAPDS. The test verified the HSL and AF100 communications and annunciator alarms, including the new reflash unit, and analog outputs to the board indicators.

The Performance Test (ECT-83843-07) verified the CPCS response time, performed maintenance calibrations, verified correct CEA movement position indication, and verified the CEA insertion (drop) time measurement.

The Power Ascension Test (ECT-83843-08) was performed during startup and

power operation conditions to verify correct CEA movement, CEAC limits and Penalty Factor, Departure from Nucleate Boiling Ratio (DNBR), Local Power Density (LPD), and reactor power calculations.

This portion of the inspection completed section 02.03(c) of IP52003 for the Site Installation phase. In the license amendment request application, the licensee stated that it will use procedure EN-TQ-201, "Systematic Approach to Training Process," to develop operations and maintenance training specific to the CPCS replacement. The inspectors discussed with the licensee how EN-TQ-201 was used. The licensee explained that it used the EN-TQ-201 process of analysis, design, development, implementation, and evaluation to determine the knowledge needs and skills for the new system, the licensee staff who needed to be trained, the training curriculum, the method of evaluation, the setting (classroom and simulator), and perform verification of training completion and post-training evaluation of training to identify any gaps.

This portion of the inspection completed section 02.03(d) of IP52003 for the Site Installation phase. During the SAT, the inspectors reviewed a redline version of the One-Channel SAT procedure (ECT-83843-09, Revision 0) that was used to perform the test on the CPC channel A. The licensee explained during the SAT that ECT-83843-09, Revision 1, was under internal review and would be performed on an additional channel (CPC channel C or D). During the site installation inspection, the licensee explained that they had determined that the One-Channel SAT (ECT-83843-09) was optional, as it does not provide any testing that is not already covered by factory acceptance testing or post modification testing. The licensee updated ECT-83843-01, "WF3 CPC System Replacement Governance Test Plan," Revision 1 to document this explanation. The inspectors reviewed ECT-83843-01, Revision 1 and verified that the test activities of ECT-83843-09 are covered by other tests.

The inspectors witnessed selected portions of the Post-Modification Functional Test and verified that the test was performed using the licensee's ECT-83843-06. The inspectors reviewed the results for this test, as well as for the Performance Test (ECT-83843-07) and the Power Ascension Test (ECT-83843-08). The inspectors verified that the test deficiencies identified in the performance of these tests were addressed and all tests passed the acceptance criteria to demonstrate that the CPCS will perform as designed. After completion of ECT-83843-06 and ECT-83843-07, a Return to Service Form for the CPCS (Attachment 9.11 of EN-DC-115, Revision 30) was signed on June 16, 2022.

This portion of the inspection completed section 02.03(e) of IP52003 for the Site Installation phase. The inspectors verified that the operators, technicians, and system engineers have been adequately trained, and understand the system commensurate with their responsibilities. For the operators training, the licensee modified the simulator for training and the inspectors reviewed CPCS lectures that fed into the curriculum. During the CPCS training, the licensee identified new tasks where needed, performed gap training, and plans for the requal training that involved reviewing physical changes and lectures.

This portion of the inspection completed section 02.03(f) of IP52003 for the Site Installation phase. The inspectors verified that the installation of the APC

multiplexer (MUX) was consistent with the resolution of an Equipment Qualification Summary Report test anomaly which called for the APC MUX to be installed with eight 10-32 bolts with lock washers. The inspectors reviewed work order task 00550854-16, "Panel IC ECP22A," which provides instructions for how to install the two new MUXs in each of the four APCs as part of EC-83843. The inspectors reviewed drawing 2E10700, CPCS "Mounting and Installation," Revision 2, Sheets 1 and 4, which identify the eight 10-32 bolts with lock washers. The inspectors also observed that the APC MUXs have been installed with eight bolts and lock washers.

During the site installation inspection, the licensee informed the inspectors that the reflash module which was added to each cabinet in CP-22 was not provided by WEC, and therefore was not included in the equipment qualification tests performed for the CPCS equipment delivered by WEC. The reflash module was successfully tested for electromagnetic interference (EMI) and radiofrequency interference (RFI) in accordance with RG 1.180, Revision 1, as documented in Curtiss-Wright Report Q2137.0, "EMI/RFI and Verification/Validation Test Report for a Rochester Instrument Annunciator," Revision 0. Seismic testing was performed in accordance with IEEE 344-1975 as documented by Curtiss-Wright report number S2131.0, "Seismic Test Report for Ametek Annunciator, Acromag Signal Isolator," Revision 0. Both Q2137.0 and S2131.0 were reviewed and accepted by Entergy in accordance with EN-DC-149. The inspectors discussed with the licensee the reflash module test results and installation drawing 5817-14728 Sheet 1, "Reflash Module for CP-22 Cabinet Mounting."

This portion of the inspection completed section 02.03(g) of IP52003 for the Site Installation phase. Test procedure ECT-83843-06 verified the version of the software loaded into the CPC, AUX CPC, CEACs and CPPs for each channel. This test step verifies the cyclic redundancy checks of the addressable constants to ensure they are the same values that were provided by WEC in the release report.

The inspectors discussed with the licensee the process for controlling and changing addressable constants as described in Section 6.2, Changing Addressable Constants, of OP-004-006, "System Operating Procedure Core Protection Calculator System," Revision 309.

This portion of the inspection completed section 02.03(h) of IP52003 for the Site Installation phase. The inspectors verified that proper indication of system bypass and failure is functional. The inspectors observed portions of ECT-83843-06 which verified that CPCS failure and system bypass conditions are indicated in the control room. The CPCS channel bypass indications are displayed individually in each respective OM in CP-7. The CPCS channel trouble alarms are indicated in annunciator panel K. Conditions that result in CPCS trouble alarms include CPC/CEAC failure or trouble, high cabinet temperature, and CPU load exceeding the maximum load limit.

b. Observations and Findings

No findings were identified.

1.4 Review of Plans for Maintenance and Repair (ref. 2.04)

a. Inspection Scope

This portion of the inspection completed section 02.04(a)(b) of IP52003 for the Site Installation phase. The inspectors reviewed updated maintenance procedure MI-003-125, "Core Protection Calculator Calibration," Revision 19. This procedure provides instructions for performing and documenting the CPCS calibration in accordance with Technical Specifications 4.3.1.1, Table 4.3-1, "Reactor Protective Instrumentation Surveillance Requirements," Items 9a, 9b, 9c, for the CPCS Local Power Density – High, Deviation from Nucleate Boiling – Low, and CEA calculators, respectively.

The inspectors verified that MI-003-125 has been updated with CPCS maintenance requirements specific for the new equipment and surveillance procedures with testing required by the technical specifications. The inspectors verified that the updated procedure MI-003-125 correctly reflects the new system attributes and is sufficiently detailed and clear to allow maintenance personnel to perform calibration of the CPCS.

b. Observations and Findings

No findings were identified.

1.5 Identification and Resolution of Problems

a. Inspection Scope

This portion of the inspection completed section 2.01(e) of IP52003 for the Site Installation phase. The inspectors reviewed the licensee's corrective action program and verified that they were identifying issues related to the Site Installation at an appropriate threshold. The inspectors also reviewed the licensee's condition reports related to the SAT and FAT oversight activities to verify that the licensee documented conditions adverse to quality during previous inspections and implemented appropriate corrective actions to resolve these conditions.

b. Observations and Findings

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On August 11, 2022, the inspectors presented the Digital Instrumentation and Control Modification Inspection results to John Ferrick and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
52003	Corrective Action Documents	CAP-IR-2022-2858	WF3 CPCS site execution of Channel Integration Test (CIT) unable to be completed using existing instructions	03/28/2022
52003	Corrective Action Documents	CR-WF3-2022-01605	Conditional Release of the CPEADS for the new CPC system	03/23/2022
52003	Corrective Action Documents	CR-WF3-2022-01605	Conditional Release of CEAPDs	03/23/2022
52003	Corrective Action Documents	CR-WF3-2022-01690	Discrepancies identified during SAT for ECT-83843-05 Section 7.8.9 – CPC Analog Input Redundancy Testing	03/28/2022
52003	Corrective Action Documents	CR-WF3-2022-01735	Delays from Supplier for delivery of fiber 2-conductor fiber wire	03/29/2022
52003	Corrective Action Documents	CR-WF3-2022-01770	Conditional Release of One Replacement Analog Input Card	03/30/2022
52003	Corrective Action Documents	CR-WF3-2022-01828	Seal kit parts from the warehouse past shelf-life	04/01/2022
52003	Corrective Action Documents	CR-WF3-2022-01851	RTV silicone tube premeasured kits failed the density verification	04/02/2022
52003	Corrective Action Documents	CR-WF3-2022-01894	Stuck connector on cable to receptacle for the incore amplifier bin assembly Channel B	04/03/2022
52003	Corrective Action Documents	CR-WF3-2022-01950	Wiring found in the field that are shown deleted in relib while working on CPC project	04/04/2022
52003	Corrective Action Documents	CR-WF3-2022-03200		
52003	Corrective Action Documents	CR-WF3-2022-05599	Operating procedures corrections for CPC trouble alarm when maximum CPU load is exceeded	08/01/2022
52003	Corrective Action Documents	RITS 76822	UDPSERVER OM Channel A Transfer	02/28/2022
52003	Corrective Action Documents	WF3-2022-02849		
52003	Corrective Action Documents	WF3-2022-02884		
52003	Corrective Action Documents	WF3-2022-02912		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
52003	Corrective Action Documents	WF3-2022-03002		
52003	Corrective Action Documents	WF3-2022-03160		
52003	Corrective Action Documents	WF3-2022-03191		
52003	Drawings	2E10700	APC MUX Mounting and Installation, Sheets 1 and 4	2
52003	Drawings	2E10729	Auxiliary Protective Cabinet (APC) Channel B Electric Schematic	3
52003	Drawings	5817-14728	Reflash Module for CP-22 Cabinet Mounting, Sheet 1	0
52003	Engineering Changes	EC 89616-Summary	Summary of EC 89616 on how PSAI 4 of SPM for CPCS Technical Manual Review was satisfied.	
52003	Engineering Changes	FCR 89616 (ECN 83843)	Planned field change request (FCR) for FAT/SAT, Technical Manual, and Vendor Documentation	04/25/2022
52003	Miscellaneous	Attachment 9.11 of EN-DC-115	Return to Service Form for the CPCS	30
52003	Miscellaneous	AUD-WF3-2019-00236-CA233	Entergy VOP Audit Report: Final IV&V VOP Audit Draft	03/30/2022
52003	Miscellaneous	CDA-2203-00007	Cyber Security Assessment for MTP	05/11/2022
52003	Miscellaneous	Curtiss-Wright Report Q2137.0	EMI/RFI and Verification/Validation Test Report for a Rochester Instrument Annunciator	0
52003	Miscellaneous	Curtiss-Wright Report S2131.0	Seismic Test Report for Ametek Annunciator, Acromag Signal Isolator	0
52003	Miscellaneous	EN-IT-103-15-ATT-9.6_001	CPC Project Cyber Security Final Attachment 6 CYBER SECURITY DEFENSIVE ARCHITECTURE & TECHNICAL CONTROLS INTEGRATION FORM	05/06/2020
52003	Miscellaneous	LM-0311	LM-0311 Qual Matrix	05/04/2022
52003	Miscellaneous	LTR-GIC-21-061	Discussion on Deterministic Operation and System Load value	Revision 0
52003	Miscellaneous	OSD&D-0040223	Assembly, CPC Four Channel Assembly, EA Channel 1 of 4 of the Four Channel Assembly	04/28/2022
52003	Miscellaneous	VOP Characteristics Validation Table	VOP Characteristics Validation Table	05/13/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
52003	Miscellaneous	WLP-LOR-221CPC00	Core Protection Calculators	03/29/2022
52003	Miscellaneous	WNA-RL-06926-CWTR3	Entergy Operation Waterford Steam Electric Station Unit 3 Core Protection Calculator Software Configuration Management Release Report	Revision 7
52003	Procedures	ECT-83843-01	WF3 CPC System Replacement Governance Test Plan	1
52003	Procedures	ECT-83843-06	Waterford 3 Post-Modification Functional Test	Revision 1
52003	Procedures	ECT-83843-07	WF3 Post Modification Performance Test	1
52003	Procedures	ECT-83843-08	WF3 CPCS Power Ascension Test	0
52003	Procedures	EN-DC-144	System Health Reporting	2
52003	Procedures	EN-DC-159	System and Component Monitoring	20
52003	Procedures	EN-DC-178	"System Walkdowns	15
52003	Procedures	EN-IT-103-02	Cyber Security Periodic Activities	Rev. 7
52003	Procedures	MI-003-125	Core Protection Calculator Channel Calibration	19
52003	Procedures	OI-004-000	Control Room Logs	Revision 38
52003	Procedures	OP-004-003	Draft Revisions of System Operating Procedure Control Element Assembly Calculation System	Revision 013
52003	Procedures	OP-004-006	Draft Revision of System Operating Procedure for the Core Protection Calculator System	Revision 309
52003	Procedures	OP-500-008	Annunciator Response Procedure Control Room Cabinet H	46
52003	Procedures	OP-500-009	Annunciator Response Procedure Control Room Cabinet K	Revision 022
52003	Procedures	OP-500-010	Annunciator Response Procedure Control Room Cabinet L	39
52003	Procedures	OP-901-107	Plant Protection System Channel A, B, C, and D Functional Test	318
52003	Work Orders	00550854-16	Panel IC ECP22A	April 15, 2022