



L-2022-166  
10 CFR 50.90

**Framatome Inc. Proprietary**  
(Not proprietary when separated from Attachment 1)

October 5, 2022

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington DC 20555-0001

RE: Turkey Point Nuclear Plant, Unit 3 and 4  
Docket Nos. 50-250 and 50-251  
Renewed Facility Operating Licenses DPR-31 and DPR-41

Response to Request for Supplemental Information Regarding  
License Amendment Request 274, Reactor Protection System, Engineered Safety Features  
Actuation System, and Nuclear Instrumentation System Replacement Project

References:

1. FPL Letter L-2022-120 to NRC dated July 30, 2022, Turkey Point Nuclear Plant, Units 3 & 4, License Amendment Request 274, Reactor Protection System, Engineered Safety Features Actuation System, and Nuclear Instrumentation System Replacement Project (ADAMS Accession No. ML22213A045)
2. NRC Letter L-2022-040 to FPL dated September 15, 2022, Turkey Point Nuclear Generating Unit Nos. 3 and 4 – Supplemental Information Needed for Acceptance of Requested Licensing Action RE: License Amendment Requests to Replace Instrumentation with Digital System (EPID L-2022-LLA-0105) (ADAMS Accession No. ML22255A050)

Per Reference 1, and pursuant to 10 CFR 50.90, Florida Power & Light Company (FPL) submitted a request to amend Subsequent Renewed Facility Operating Licenses DPR-31 and DPR-41 for Turkey Point Nuclear Plant Units 3 and 4 (Turkey Point), respectively. The proposed license amendments replace the Reactor Protection System (RPS), Engineered Safety Features Actuation System (ESFAS), and Nuclear Instrumentation System (NIS) with digital systems that are based on the Framatome Tricon Programmable Logic Controller (PLC) Version 10 digital based platform.

Per Reference 2, the NRC notified FPL that the Staff determined that supplemental information was needed to complete its acceptance review of the proposed amendment. Attachment 1 provides FPL's response for the requested supplemental information.

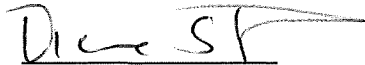
Attachment 1 to this letter provides FPL's response for the requested supplemental information. Attachment 1 contains information that Framatome, Incorporated, considers to be proprietary in nature. Pursuant to 10 CFR 2.390(a)(4), FPL requests that the proprietary information be withheld from public disclosure. The request is supported by an affidavit signed by Framatome, Incorporated, the owner of the information, in Attachment 2. The affidavit sets forth the basis on which the information may be withheld from public disclosure by the Nuclear Regulatory Commission ("Commission") and addresses with specificity the considerations listed in paragraph (b)(4) of Section 2.390 of the Commission's regulations. Correspondence with respect to the proprietary aspects of this information or the supporting Framatome affidavit should be addressed to Mr. Philip Opsal, Manager, Product Licensing for Framatome, 3315 Old Forest Road, Lynchburg, Virginia 24501. Attachment 3 provides a redacted version of Attachment 1 that is suitable for public dissemination.

The response to the request for supplemental information does not alter the conclusions provided in Reference 1 that the proposed change does not involve a significant hazards consideration pursuant to 10 CFR 50.92, and that there are no significant environmental impacts associated with the proposed change.

Should you have any questions regarding this submission, please contact Mr. Kenneth Mack, Fleet Licensing Manager, at 561-904-3635.

I declare under penalty of perjury that the foregoing is true and correct.  
Executed on the 5th day of October 2022.

Sincerely,

A handwritten signature in black ink, appearing to read "Diane Strand", with a horizontal line drawn underneath the signature.

Dianne Strand  
General Manager, Regulatory Affairs

Attachments (3)

cc: USNRC Regional Administrator, Region II  
USNRC Project Manager, Turkey Point Nuclear Plant  
USNRC Senior Resident Inspector, Turkey Point Nuclear Plant  
Ms. Cindy Becker, Florida Department of Health

**Framatome, Incorporated  
Affidavit in Support of Public Withholding  
Pursuant to 10 CFR 2.390**

(2 Pages)

## A F F I D A V I T

1. My name is Philip A. Opsal. I am Manager, Product Licensing for Framatome Inc. (formally known as AREVA Inc.), and as such I am authorized to execute this Affidavit.
2. I am familiar with the criteria applied by Framatome to determine whether certain Framatome information is proprietary. I am familiar with the policies established by Framatome to ensure the proper application of these criteria.
3. I am familiar with the Framatome information contained in Attachment 1 to Turkey Point Nuclear Plant, Unit 3 and 4 letter L-2022-166 to US NRC "Response to Request for Supplemental Information Regarding License Amendment Request 274, Reactor Protection System, Engineered Safety System Features Actuation System, and Nuclear Instrumentation System Replacement Project," (herein referred to as "this Document"). Information contained in this Document has been classified by Framatome as proprietary in accordance with the policies established by Framatome for the control and protection of proprietary and confidential information.
4. This Document contains information of a proprietary and confidential nature and is of the type customarily held in confidence by Framatome and not made available to the public. Based on my experience, I am aware that other companies regard information of the kind contained in this Document as proprietary and confidential.
5. This Document has been made available to the U.S. Nuclear Regulatory Commission in confidence with the request that the information contained in this Document be withheld from public disclosure. The request for withholding of proprietary information is made in accordance with 10 CFR 2.390. The information for which withholding from disclosure is requested qualifies under 10 CFR 2.390(a)(4), "Trade secrets and commercial or financial information."
6. The following criteria are customarily applied by Framatome to determine whether information should be classified as proprietary:
  - (a) The information reveals details of Framatome's research and development plans and programs or their results.

- (b) Use of the information by a competitor would permit the competitor to significantly reduce its expenditures, in time or resources, to design, produce, or market a similar product or service.
- (c) The information includes test data or analytical techniques concerning a process, methodology, or component, the application of which results in a competitive advantage for Framatome.
- (d) The information reveals certain distinguishing aspects of a process, methodology, or component, the exclusive use of which provides a competitive advantage for Framatome in product optimization or marketability.
- (e) The information is vital to a competitive advantage held by Framatome, would be helpful to competitors to Framatome, and would likely cause substantial harm to the competitive position of Framatome.

The information in this Document is considered proprietary for the reasons set forth in paragraphs 6(b), 6(d), and 6(e) above.

- 7. In accordance with Framatome's policies governing the protection and control of information, proprietary information contained in this Document has been made available, on a limited basis, to others outside Framatome only as required and under suitable agreement providing for nondisclosure and limited use of the information.
- 8. Framatome policy requires that proprietary information be kept in a secured file or area and distributed on a need-to-know basis.
- 9. The foregoing statements are true and correct to the best of my knowledge, information, and belief.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on October 5, 2022.



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Philip A. Opsal

**RESPONSE TO REQUEST FOR SUPPLEMENTAL INFORMATION (RSI)  
LICENSE AMENDMENT REQUEST 274  
REACTOR PROTECTION SYSTEM, ENGINEERED SAFETY FEATURES ACTUATION SYSTEM,  
AND NUCLEAR INSTRUMENTATION SYSTEM REPLACEMENT PROJECT**

**(REDACTED)**

(18 Pages)

RESPONSE TO REQUEST FOR SUPPLEMENTAL INFORMATION (RSI)  
LICENSE AMENDMENT REQUEST 274  
REACTOR PROTECTION SYSTEM, ENGINEERED SAFETY FEATURES ACTUATION SYSTEM,  
AND NUCLEAR INSTRUMENTATION SYSTEM REPLACEMENT PROJECT

RSI Section(s)	Issue and Summary of NRC Request	Response – Description and Schedule
DETAILED DESCRIPTIONS OF IMPLEMENTATION ITEMS AND TIMING OF AVAILABILITY		
1.1 and 1.2	<p>Environmental Qualification (EQ) Supplement / Revised Tricon Platform Components</p> <p>1.1 For each of the implementation items listed in the letter dated July 30, 2022, please provide a detailed description of the information that will be provided as a supplement to the license amendment requests or made available for audit, and the date (i.e., month, day, and year) that FPL will either provide the information on the docket as a supplement or make the information available for audit.</p> <p>1.2 The NRC staff does not know what specific EQ summary reports will be provided in the supplement. Also, the license amendment request identifies several Tricon components that have been revised since the</p>	<p><u>Description of Information to be Provided</u></p> <p>Equipment Qualification (EQ) plan (Framatome Document No.: 51-9324222-008) for the Florida Power and Light (FPL) Digital Modernization equipment to be installed at Turkey Point (PTN) Units 3 and 4 is available for NRC review and will be posted to the Electronic Reading Room by October 16, 2022. EQ Summary Qualification Reports summarize test methods, test results and analyses necessary to establish mild environment qualification for conditions inclusive of normal and abnormal environments and Design Basis Event (DBE) seismic conditions for the locations where the equipment will be installed onsite at the Turkey Point facility. Also, in accordance with the EQ Plan, the I&amp;C components and electronic subcomponents are subjected to Electromagnetic Compatibility (EMC) and electrical isolation testing.</p> <p>EQ Summary Qualification Reports document the suitability of the 1E Digital Modernization equipment to meet the safety-related performance requirements set forth in the EQ plan and referenced standards as defined in the RPS/ESFAS/NIS SyRS (LAR Attachment 7.7). The qualification process described in the EQ Plan is performed in accordance with the EQ Plan under the Framatome Quality Assurance Program.</p> <p>There will be multiple EQ Qualification Summary Reports for the RPS/NIS/ESFAS replacement scope. These EQ Qualification Summary Reports will include identification of all equipment qualified, a summary of each test and analysis(es) performed, results of the functional tests performed, any anomalies and resulting design changes made as a result of test anomalies, testing conclusions, and evaluations.</p>

RSI Section(s)	Issue and Summary of NRC Request	Response – Description and Schedule
	<p>topical report was last approved by the NRC, the revised TR does not contain EQ test summary reports for these modified components.</p> <p>The EQ test summary reports should document the results of the qualification testing. The summary should compare the standards and test limits to which the equipment has been qualified and should compare the equipment qualification test limits to the licensee-established plant environmental conditions.</p> <p>Please provide a detailed description of the information mentioned in the first implementation item that will be provided as a supplement to the license amendment request and the date (i.e., month, day, and year) that FPL will provide the information on the docket as a supplement.</p>	<p>Safety Video Display Unit (SVDU), Development Project Equipment Qualification Summary Report, Schneider Electric Document USSVDU2-EQSR-XXSR-001, dated 3/22/2019 – Is included as Attachment 7.3 to the LAR.</p> <p>The following EQ Qualification Summary Reports will be issued:</p> <ul style="list-style-type: none"> <li>a. EQ Qualification Summary Report for Nuclear Instrumentation. This report covers Nuclear Instrumentation Signal Conditioning Chassis (power range, intermediate range, and source range), the Source Range Pre-amplifier, and connection boxes.</li> <li>b. EQ Qualification Summary Report for RPS/ESFAS. This report covers components in the RPS/ESFAS system design not covered by other reports and includes:</li> </ul> <div style="margin-left: 40px;"> <p>[ ]</p> <p>[ ]</p> <p>[ ]</p> <p>[ ]</p> </div> <p>Commercial Ancillary Equipment being integrated into the overall system designs, including but not limited to, the following generic applications. Additional equipment may be specified and included based on the completion of detailed design:</p> <ul style="list-style-type: none"> <li>• Fasteners/Hardware, Standoffs, etc.</li> </ul>



RSI Section(s)	Issue and Summary of NRC Request	Response – Description and Schedule																		
		<ul style="list-style-type: none"> <li>• Cable Management Devices (wireways, zip ties, cable clamps, etc.)</li> <li>• Power distribution equipment (terminal blocks, circuit breakers, line filters, fuses/fuse blocks, disconnects, etc.)</li> <li>• Relays</li> <li>• Isolators</li> <li>• Cabinet Lighting, door switches</li> <li>• Keys switches, toggle switches, and/or pushbuttons</li> </ul> <p>Channel to Voter Tricon™ module Class 1E Isolation Qualification Test – Architecture specific test of hardwired Tricon to Tricon interdivisional communication</p> <p>Tricon Product Line Changes and Supplemental Testing. Engineering evaluations on the changes to the Tricon product line and test reports are available as supplemental information to the existing product qualification and will be made available for audit. These documents include:</p> <table border="1"> <thead> <tr> <th>Document No.</th><th>Title</th><th>Revision</th></tr> </thead> <tbody> <tr> <td>9600164-527</td><td><u>MPR Document</u> “Tricon v10 EMI/RFI Test Report”</td><td>4.0</td></tr> <tr> <td>TR018386-PLC-EMI</td><td><u>NTS Document</u> “Test Report for EMI/RFI Retest of the Tricon v10 Programmable Logic Controller Qualification Test Specimen”</td><td>0.0</td></tr> <tr> <td>TP018386-PLC-EMI</td><td><u>Completed NTS Procedure</u> “Test Procedure for EMI/RFI Retest of the Tricon v10 Programmable Logic Controller Qualification Test Specimen”</td><td>1.0</td></tr> <tr> <td>9600506-510A</td><td><u>Completed MPR Procedure</u> “Invensys Digital Control Equipment EMI/RFI Qualification Retesting Project, Tricon v10 PLC EMI/RFI Retest Procedure”</td><td>0.0</td></tr> <tr> <td>0449-1202-TPR-001</td><td><u>Completed MPR Procedure</u> “Invensys Digital Control Equipment EMI/RFI Qualification Retesting Project, Tricon v10 PLC Conducted Emissions Retest Procedure”</td><td>0.0</td></tr> </tbody> </table>	Document No.	Title	Revision	9600164-527	<u>MPR Document</u> “Tricon v10 EMI/RFI Test Report”	4.0	TR018386-PLC-EMI	<u>NTS Document</u> “Test Report for EMI/RFI Retest of the Tricon v10 Programmable Logic Controller Qualification Test Specimen”	0.0	TP018386-PLC-EMI	<u>Completed NTS Procedure</u> “Test Procedure for EMI/RFI Retest of the Tricon v10 Programmable Logic Controller Qualification Test Specimen”	1.0	9600506-510A	<u>Completed MPR Procedure</u> “Invensys Digital Control Equipment EMI/RFI Qualification Retesting Project, Tricon v10 PLC EMI/RFI Retest Procedure”	0.0	0449-1202-TPR-001	<u>Completed MPR Procedure</u> “Invensys Digital Control Equipment EMI/RFI Qualification Retesting Project, Tricon v10 PLC Conducted Emissions Retest Procedure”	0.0
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RSI Section(s)	Issue and Summary of NRC Request	Response – Description and Schedule		
		9600506-500	MPR Document “Invensys Digital Control Equipment EMI/RFI Qualification Retesting Project, Qualification Retest Plan”	1.0
		0449-1202-QAP-01	MPR Document “Quality Assurance Plan for the Invensys Digital Control Equipment EMI/RFI Qualification Retesting Project”	2.0
		9600506-540	MPR Document “Invensys Digital Control Equipment EMI/RFI Qualification Retesting Project, Master Configuration List”	7.0
			Framatome 8310N2 Tricon™ Power Supply for use with a high voltage DC input voltage Framatome 8310N2 Tricon™ Power Supply for use with a high voltage DC input voltage	0.0
		Commercial Grade Dedication (CGD) Reports will be available for audit in the Electronic Reading Room. The following documents will be included:		
		Framatome Gmbh TXS SCV2, subcomponent of the NI Source Range and Intermediate Range Signal Conditioning Chassis, CGD Report.		
		Framatome Gmbh TXS SSR1, Subcomponent of the NI Source Range Signal Conditioning Chassis, CGD Report.		
		[ ]		
		[ ]		
		<u>Schedule for planned Submittals</u>		
Document Title		Date of Submittal		
EQ Qualification Summary Report for Nuclear Instrumentation.		6/15/2023		
EQ Qualification Summary Report for RPS/ESFAS		9/15/2023		

RSI Section(s)	Issue and Summary of NRC Request	Response – Description and Schedule	
		Schedule for documents available for audit	
		Document Title	Date Available
		Tricon Supplemental Testing (multiple)	10/16/2022
		Framatome Gmbh TXS SCV2 CGD Report	04/01/2023
		Framatome Gmbh TXS SSR1 CGD Report	04/01/2023
		[ ]	9/15/2023
		[ ]	9/15/2023
1.1	Software Installation Plan, Software Maintenance Plan, and Software Operation Plan  For each of the implementation items listed in the letter dated July 30, 2022, please provide a detailed description of the information that will be provided as a supplement to the license amendment requests or made available for audit, and the date (i.e., month, day, and year) that FPL will either provide the information on the docket as a supplement or make the information available for audit.	Description of Information to be Provided  The following plans and reports will be available for audit.  1. Software Installation Plan, 2. Software Maintenance Plan, 3. Software Operation Plan  <u>Schedule for documents available for audit</u>	
		Document Title	Date of Submittal
		Software Installation Plan	6/19/2023
		Software Maintenance Plan	6/9/2023
		Software Operation Plan	6/7/2023

RSI Section(s)	Issue and Summary of NRC Request	Response – Description and Schedule
1.1	<p>System-Level Failure Modes and Effects Analysis (FMEA)</p> <p>For each of the implementation items listed in the letter dated July 30, 2022, please provide a detailed description of the information that will be provided as a supplement to the license amendment requests or made available for audit, and the date (i.e., month, day, and year) that FPL will either provide the information on the docket as a supplement or make the information available for audit.</p>	<p><u>Description of Information to be Provided</u></p> <p>A System Level Failure Modes and Effects Analysis (FMEA), Framatome document 51-9330940 RPS/ESFAS/NIS FMEA, for the RPS/ESFAS/NIS replacement will be submitted. This FMEA applies to the design of the RPS/ESFAS/NIS replacement for Florida Power and Light (FPL) Turkey Point Units 3 and 4. The purpose of this document is to provide a detailed FMEA for the replacement design in accordance with FPL, industry, and regulatory requirements.</p> <p>The System Level FMEA covers the Framatome provided equipment and system interfaces. The FMEA will be a living document throughout the PTN replacement project design and will be updated to address detailed design information required by the RPS/ESFAS/NIS FMEA implementation. Revisions will be reviewed for impacts to the PTN LAR and will be available for NRC inspection.</p> <p>The System Level FMEA is a systematic qualitative analysis of the RPS/ESFAS/NIS design with the primary objectives of identifying credible failure modes, evaluating the consequence and effects of failures, and verifying that the design satisfies single-failure criterion applicable to the replacement RPS/ESFAS/NIS. The guidance of IEEE Std. 352, "IEEE Guide for General Principles of Reliability Analysis of Nuclear Power Generating Station Safety Systems", will be used to perform the FMEA, however, a quantitative analysis will not be included in the document. The FMEA includes consideration of common-cause failures to ensure independence of the D3 support indications and the DAS.</p> <p>The System FMEA addresses:</p> <ol style="list-style-type: none"> <li>1. Regulatory Requirements <ol style="list-style-type: none"> <li>a. Criteria per IEEE 603-1991 <ul style="list-style-type: none"> <li>▪ Single Failure, Clause 5.1 using IEEE 379-2000</li> <li>▪ Control/Protection Interaction, Clause 6.3</li> </ul> </li> </ol> </li> </ol>

		<p>b. Criteria of IEEE 379-2000</p> <ul style="list-style-type: none"> <li>▪ Credible Single Failures in conjunction with any identified non detectable failures, Clause 4</li> <li>▪ Spurious Actuations with any identified non detectable failures, Clause 4</li> <li>▪ Common Cause Failures, Clause 5.5</li> <li>▪ Cascaded Failures, Clause 5.3</li> </ul> <p>2. Design Requirements, including the following:</p> <ul style="list-style-type: none"> <li>a. Define the credible failure modes and ensure their effects have been considered</li> <li>b. Failure modes and isolation capabilities for interdivisional wired and digital communications.</li> <li>c. SVDU Failure Modes and Effects on the Tricon systems and safety applications.</li> <li>d. Potential failures in the DCS, effects on the HSI, and safety related equipment.</li> <li>e. Independence between protection, control, and D3 required components.</li> <li>f. Failure modes of the keyswitch, mitigating factors, and the effects on PTN specific communications identified in ASAI 19 of the LAR</li> </ul> <p>3. Impacts of existing and new field failures on protection system and non-system control system outputs</p> <ul style="list-style-type: none"> <li>a. Protection system inputs (i.e., sensors, relays, etc.)</li> <li>b. Protection system outputs (i.e., relays, analog outputs)</li> <li>c. Electric and Motive power (common power associations that could result in new single points of failures)</li> </ul> <p>Platform FMEAs are used as input into the System FMEA and are available for NRC review. These platform FMEAs include but are not limited to:</p> <p>1. Framatome 38-9327603-001, Failure Modes and Effects Analysis (FMEA) For the Tricon Version 10.2 Programmable Logic Controller dated 04/11/2022 (Tricon Platform FMEA)</p>
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RSI Section(s)	Issue and Summary of NRC Request	Response – Description and Schedule
		<p>2. Framatome Schneider Electric Doc. No. USSVDU2-FMEA-XXSR-0001, Rev. 00, “North America Nuclear, SVDU 2.0 Development Project, Qualification Failure Modes and Effects Analysis,” March 2019 (Framatome Platform FMEA)</p> <p>3. Framatome Doc. No. 51-9328643-000, “DCS Failure Modes and Effects Analysis-Unit 3” (Foxboro IA System FMEA)</p> <p>4. Framatome NIS Chassis FMEAs (Supports RPS System FMEA)</p> <ul style="list-style-type: none"> <li>a. Power Range FMEA (51-9354789)</li> <li>b. Intermediate Range FMEA (51-9354788)</li> <li>c. Source Range FMEA (51-9354787)</li> </ul> <p>5. Framatome Document No.: 51-9332976-000 FPL Digital Modernization Project (F.505454) FMEDA Implementation- RPS/ESFAS, Attachment 7.8 to the LAR (Supports Technical Specification Surveillance Reduction implementation supporting the RPS/ESFAS System FMEA)</p> <p><u>Schedule for Submittal</u></p> <p>The System FMEA will be submitted by January 16, 2023.</p>
1.1	<p>Factory Acceptance Testing – Response Time</p> <p>For each of the implementation items listed in the letter dated July 30, 2022, please provide a detailed description of the information that will be provided as a supplement to the license amendment requests or made available for audit, and the date (i.e., month, day, and year) that</p>	<p><u>Description of Information to be Provided</u></p> <p>A response time analysis has been performed addressing Safety Analysis response requirements from process detection to the being of rod movement for RPS and Master/Slave actuation for ESFAS. The Tricon RPS/ESFAS maximum scan rates for both the Tricon channels and voters have been calculated and are the bases for validation testing requirements to ensure that the existing safety analysis response time allowances are met during Factory Acceptance Test (FAT). The FAT Procedure including the method and acceptance criteria for response time testing will be available for audit.</p> <p>A worst-case time response calculation for the RPS/ESFAS/NIS replacement was performed in Framatome document 152-9324949, "Framatome Response Time Calculations for the Turkey</p>

RSI Section(s)	Issue and Summary of NRC Request	Response – Description and Schedule
	FPL will either provide the information on the docket as a supplement or make the information available for audit.	<p>Point 3 and 4 RPS/ESFAS/NIS Digital Replacement Project” and is available for audit (LAR Reference 5.9). This time response calculation satisfies the plant and application-specific requirements for system response time presented in Chapter 14 of the safety analysis report.</p> <p>The RPS/ESFAS/NIS equipment response time is verified as part of the Factory Acceptance Test (FAT) to verify that Tricon throughput time is bounded by the calculation and in no case exceeds the replacement’s allotment (plus margin).</p> <p><u>Schedule for documents available for audit</u></p> <ol style="list-style-type: none"> <li>1. The Response Time calculation has been issued and is available for NRC review</li> <li>2. Factory Acceptance Test Report - April 8, 2024</li> </ol>
1.1	<p>Supplement to Update Technical Specification and Technical Specification Bases Page Mark-ups Based on the NUREG-1431, Revision 5 Format</p> <p>For each of the implementation items listed in the letter dated July 30, 2022, please provide a detailed description of the information that will be provided as a supplement to the license amendment requests or made available for audit, and the date (i.e., month, day, and year) that FPL will either provide the information on the docket as a supplement or make the information available for audit.</p>	<p><u>Description of Information to be Provided</u></p> <p>Provide a submittal date to NRC for the supplemental Technical Specification and Bases pages in the ITS format. No other information required.</p> <p><u>Schedule for Submittal</u></p> <p>A LAR supplement will be provided 3 months after NRC ITS SER issuance to update the Technical Specification and Technical Specification Bases (information only) page mark-ups pages based on the NUREG-1431, Revision 5, format, following approval of the Turkey Point Improved Technical Specification (ITS) conversion.</p>

RSI Section(s)	Issue and Summary of NRC Request	Response – Description and Schedule
	<p>Note that the description of the fifth implementation item (Technical Specification supplement) is sufficient, so a more detailed description of the fifth implementation item is not needed. However, a date (i.e., month, day, and year) is needed.</p>	
1.1 and 1.3	<p>Activities and Results of Each Human Factors V&amp;V Testing Stage</p> <p>1.1 - For each of the implementation items listed in the letter dated July 30, 2022, please provide a detailed description of the information that will be provided as a supplement to the license amendment requests or made available for audit, and the date (i.e., month, day, and year) that FPL will either provide the information on the docket as a supplement or make the information available for audit.</p> <p>1.3 - To determine whether sufficient technical information, both in scope and depth will be available with an appropriate time frame to support the NRC's</p>	<p><u>Describe at what stage(s) of validation testing, results that will be credited</u></p> <p>This approach consists of three steps/stages of verification and validation activities:</p> <ul style="list-style-type: none"> <li>• Step 1 – PV1: Conceptual Design Test. This test is performed using a simplified mock-up that replicates new control room layout and static, paper-based displays, and marked-up/draft procedures as available with the main objective of validating the conceptual design or novel, complex or critical design elements or testing of important human actions to ensure that the proposed design is being validated from a HFE perspective early in the design process. The Result Summary Report (RSR) for the Conceptual Design Test (PV1) will include the implementing procedure and results of the test.</li> <li>• Step 2 – PV2: Preliminary Design Test. It is an intermediate test to be performed on a limited platform using preliminary versions of the actual HSI design products. The execution of the Preliminary Design Test (PV2) is scheduled for August 16, 2023, through August 22, 2023, and will be performed in the Turkey Point glass top simulator. The RSR for PV2 will include the evaluation of the glass top simulator as a suitable platform, definition of scenarios, implementation procedures and results of the activity. The PV2 RSR will be submitted by October 31, 2023.</li> <li>• Step 3 - ISV – Integrated System Validation. The final integrated validation planned to be performed on a glass panel simulator (or comparable high-fidelity platform) that replicates the MCR, with all the systems affected by the modification implemented and verified. As it is indicated in Section 5.9 of the HFE Plan (LAR Attachment 7.6). The ISV RSR will be available for audit or inspection on March 28, 2024.</li> </ul>



RSI Section(s)	Issue and Summary of NRC Request	Response – Description and Schedule																				
	<p>safety determination regarding the submitted LAR, the following supplemental information is needed:</p> <p>a. Identify what stage of validation will be credited and the completion schedule (i.e., month, day, and year) of the validation testing.</p> <p>b. Provide the schedule (i.e., month, day, and year) for submitting the results summary report (RSR) (or an equivalent report) discussing credited validation testing results.</p> <p>c. Provide the schedule (i.e., month, day, and year) for the availability of supporting documents referenced within the RSR (or equivalent report). This information is needed to enable NRC staff to plan any potential audits.</p>	<p>The activities and results of each human factors V&amp;V testing stage are documented in a Results Summary Report to specifically identify and describe the test and evaluation conditions at each stage as described in the HFE Plan.</p> <p><u>Schedule for submitting the results summary report (RSR)</u></p> <table><tr><th>Document Title</th><th>Date for Submittal</th></tr><tr><td>Preliminary Design Test (PV2) RSR</td><td>10/31/2023</td></tr></table> <p><u>Schedule for the availability of supporting documents referenced within the RSRs</u></p> <table><tr><th>Document Title</th><th>Date Available</th></tr><tr><td>Conceptual Design Test (PV1) RSR</td><td>3/29/2023</td></tr><tr><td>Task Support Verification (TSV1) RSR</td><td>5/15/2023</td></tr><tr><td>Design Verification (DV1) RSR</td><td>5/25/2023</td></tr><tr><td>Task Support Verification (TSV2) RSR</td><td>1/6/2024</td></tr><tr><td>Design Verification (DV2) RSR</td><td>1/26/2024</td></tr><tr><td>Integrated System Validation (ISV) Procedure</td><td>11/3/2023</td></tr><tr><td>Integrated System Validation (ISV) RSR</td><td>3/28/2024</td></tr></table>	Document Title	Date for Submittal	Preliminary Design Test (PV2) RSR	10/31/2023	Document Title	Date Available	Conceptual Design Test (PV1) RSR	3/29/2023	Task Support Verification (TSV1) RSR	5/15/2023	Design Verification (DV1) RSR	5/25/2023	Task Support Verification (TSV2) RSR	1/6/2024	Design Verification (DV2) RSR	1/26/2024	Integrated System Validation (ISV) Procedure	11/3/2023	Integrated System Validation (ISV) RSR	3/28/2024
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2	<p>System Components Not Previously Reviewed by NRC</p> <p>Figures 2.1-1, 2.2-1, and 2.3-1 of Enclosures 1 and 2 to the letter dated July 30, 2022, indicate that</p>	<p><u>Description of Information to be Provided</u></p> <p>1. The following is a listing of the non-Tricon equipment that the NRC has not previously reviewed. Equipment Qualification and Commercial Grade Dedication of the components is addressed above.</p>																				

RSI Section(s)	Issue and Summary of NRC Request	Response – Description and Schedule
	<p>a significant number of new system components are identified by the licensee as “New Scope – Not previously reviewed by NRC.” ... The NRC staff therefore requires additional information as defined in ISG-06 Section D.9 and in Enclosure B for these portions of the replacement RPS, ESFAS, and NIS. This information is not in the request submitted by the licensee.</p> <p>For each of the topics listed below, please provide a detailed description of the information that will be provided as a supplement to the license amendment request for system components that are not within the Tricon topical report scope and the date (i.e., month, day, and year) that FPL will provide the information on the docket as a supplement. The following information will need to be provided for the NRC staff to make an independent assessment regarding the acceptability of the proposed amendment request:</p>	<p>a. NIS Product Line Components (Framatome App B 10CFR50 Design and Manufacturing Process)</p> <ul style="list-style-type: none"> <li>i. PR Chassis</li> <li>ii. IR Chassis</li> <li>iii. SR Chassis</li> <li>iv. SR Pre-amplifier</li> <li>v. Connector Boxes</li> </ul> <p>b. [ ]</p> <p>c. [ ]</p> <p>d. [ ]</p> <p>e. Framatome SVDU (safety-related product)</p> <p>f. [ ]</p> <p>g. Commercial ancillary equipment being integrated into the overall system designs, including but not limited to, the following generic applications:</p> <ul style="list-style-type: none"> <li>i. Fasteners/Hardware, Standoffs, etc.</li> <li>ii. Cable Management Devices (wireways, zip ties, cable clamps, etc.)</li> <li>iii. Power distribution equipment (terminal blocks, circuit breakers, line filters, fuses/fuse blocks, disconnects, etc.)</li> <li>iv. Relays</li> <li>v. Isolators</li> <li>vi. Cabinet Lighting, door switches</li> <li>vii. Keys switches, toggle switches, and/or pushbuttons</li> </ul>

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	<p>a. (Summary of) Application Software Planning and Processes (see D.4)</p> <p>b. System Response Time Confirmation Report (see D.9.7)</p> <p>c. Platform-Level Failure Modes and Effects Analysis (see D.9.8)</p> <p>d. (Summary of) Electromagnetic Interference, Temperature, Humidity, and Seismic Testing Results (see D.3)</p> <p>e. Commercial-Grade Dedication Report(s) (see D.9.9)</p>	<p>2. The following information addresses the Tricon components that have been revised since the issuance of the original Tricon Topical Report, supporting evaluations of traceability/acceptability of existing EQ basis and any new supplemental qualification reports.</p> <p>Since the issuance of the 2012 Topical Report, the Tricon Product line has undergone two (2) Environmental Qualification projects and several evolutionary changes as follows:</p> <p>1- <b>2013: Tricon v10 EMI/RFI Retesting Project</b></p> <p>This project was conducted to address deficiencies and non-compliances noted in the initial EMI/RFI testing and to extend the qualified EMI/RFI susceptibility envelope to meet specific Invensys customer requirements. EMI/RFI testing was performed in accordance with the following documentation set with results documented in test report document no. 9600164-527, revision 4.0. These are readily available for review.</p> <table> <tr> <th>Document No.</th><th>Title</th><th>Revision</th></tr> <tr> <td>9600164-527</td><td><u>MPR Document</u> “Tricon v10 EMI/RFI Test Report”</td><td>4.0</td></tr> <tr> <td>TR018386-PLC-EMI</td><td><u>NTS Document</u> “Test Report for EMI/RFI Retest of the Tricon v10 Programmable Logic Controller Qualification Test Specimen”</td><td>0.0</td></tr> <tr> <td>TP018386-PLC-EMI</td><td><u>Completed NTS Procedure</u> “Test Procedure for EMI/RFI Retest of the Tricon v10 Programmable Logic Controller Qualification Test Specimen”</td><td>1.0</td></tr> <tr> <td>9600506-510A</td><td><u>Completed MPR Procedure</u> “Invensys Digital Control Equipment EMI/RFI Qualification Retesting Project, Tricon v10 PLC EMI/RFI Retest Procedure”</td><td>0.0</td></tr> <tr> <td>0449-1202-TPR-001</td><td><u>Completed MPR Procedure</u> “Invensys Digital Control Equipment EMI/RFI Qualification Retesting Project, Tricon v10 PLC Conducted Emissions Retest Procedure”</td><td>0.0</td></tr> </table>	Document No.	Title	Revision	9600164-527	<u>MPR Document</u> “Tricon v10 EMI/RFI Test Report”	4.0	TR018386-PLC-EMI	<u>NTS Document</u> “Test Report for EMI/RFI Retest of the Tricon v10 Programmable Logic Controller Qualification Test Specimen”	0.0	TP018386-PLC-EMI	<u>Completed NTS Procedure</u> “Test Procedure for EMI/RFI Retest of the Tricon v10 Programmable Logic Controller Qualification Test Specimen”	1.0	9600506-510A	<u>Completed MPR Procedure</u> “Invensys Digital Control Equipment EMI/RFI Qualification Retesting Project, Tricon v10 PLC EMI/RFI Retest Procedure”	0.0	0449-1202-TPR-001	<u>Completed MPR Procedure</u> “Invensys Digital Control Equipment EMI/RFI Qualification Retesting Project, Tricon v10 PLC Conducted Emissions Retest Procedure”	0.0
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		9600506-500	<u>MPR Document</u> “Invensys Digital Control Equipment EMI/RFI Qualification Retesting Project, Qualification Retest Plan”	1.0
		0449-1202-QAP-01	<u>MPR Document</u> “Quality Assurance Plan for the Invensys Digital Control Equipment EMI/RFI Qualification Retesting Project”	2.0
		9600506-540	<u>MPR Document</u> “Invensys Digital Control Equipment EMI/RFI Qualification Retesting Project, Master Configuration List”	7.0
		2- <b><u>2012 – 2022: Tricon v10 Evolutionary Changes</u></b>		
		From 2012 through 2022, a total of 4801 Engineering Change Orders (ECOs) and 1454 Manufacturing Change Orders (MCOs) were issued against the entire Tricon product line (commercial and nuclear Tricon, Priority Logic Modules (not utilized for the Turkey Point RPS/ESFAS/NIS replacement), SVDU, etc.). ECOs/MCOs applicable to the maintenance of the NRC approved nuclear Tricon v10 platform will be identified. A summary of the applicable changes will be produced and individual packages will be made available for review.		
		3- <b><u>2018 – 2019: SVDU 2.0 Development Project Equipment Qualification</u></b>		
		This project was for the generic qualification of the SVDU 2.0 for use in nuclear safety system via technical evaluations and qualification tests. The qualification project was performed in accordance with the following documentation set with results documented in Equipment Qualification Summary Report document no. USSVDU2-EQSR-XXSR-0001, Revision 0.0. These are readily available for review.		
		<b>Document No.</b>	<b>Title</b>	<b>Revision</b>
		USSVDU2-EQSR-XXSR-0001	SVDU 2.0 Development Project Equipment Qualification Summary Report	00
		USSVDU2-MCL-XXSR-0001	Master Configuration List	09
USSVDU2-VTR-XXNS-0001	Schneider Electric SVDU 2.0 Qualification Test Specimen Application Program (TSAP) Validation Test Report	00		

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		USSVDU2-QTR- XXSR-0001	SVDU 2.0 Pre-qualification Acceptance Test Report	00
		USSVDU2-QTR- XXSR-0002	SVDU 2.0 Qualification Radiation Exposure Withstand Test Report	00
		USSVDU2-QTR- XXSR-0003	SVDU 2.0 Qualification Environmental Test Report	00
		USSVDU2-QTR- XXSR-0004	SVDU 2.0 Qualification EMI/RFI Test Report	00
		USSVDU2-QTR- XXSR-0005	SVDU 2.0 Qualification Electrical Fast Transient Test Report	00
		USSVDU2-QTR- XXSR-0006	SVDU 2.0 Qualification Surge Withstand Test Report	00
		USSVDU2-QTR- XXSR-0007	SVDU 2.0 Qualification Electrostatic Discharge Test Report	00
		USSVDU2-QTR- XXSR-0008	SVDU 2.0 Qualification Seismic Test Report	00
		USSVDU2-QTR- XXSR-0009	SVDU 2.0 Qualification Performance Proof Test Report	00
		4- <b><u>2019 – 2022: SVDU 2.0 Evolutionary Changes</u></b>		
From 2019 through 2022, following the SVDU 2.0 qualification project, a total of 995 Engineering Change Orders (ECOs) and 417 Manufacturing Change Orders (MCOs) were issued against the entire Tricon product line (commercial and nuclear Tricon, PLM, SVDU, etc.) ECOs/MCOs applicable to the maintenance of the SVDU will be identified. A summary of the applicable changes will be produced and individual packages will be made available for review.				
5- <b><u>2022: 8310N2 PSM Supplemental EMC Qualification Project</u></b>				
This project was conducted to qualify the DC recommended (120 VDC) and extended (95 VDC – 180 VDC) input voltage operating modes of the 8310N2 Power Supply Module used to power				

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		<p>Tricon v10 chassis modules. These operating modes are not currently included in the 2012 Topical Report. The qualification was achieved by the performance of an engineering evaluation and limited supplemental EMC tests. The project was executed in accordance with the following documentation set with results documented in EQ Summary Report document no. 128-9338138, Revision 000. These are readily available for review and the Supplemental Qualification EQ Summary Report will be provided as part of the project supplemental Equipment Qualification package.</p> <table border="1"> <thead> <tr> <th>Document No.</th><th>Title</th><th>Revision</th></tr> </thead> <tbody> <tr> <td>128-9338138</td><td>8310N2 PSM Supplemental Qualification EQ Summary Report</td><td>000</td></tr> <tr> <td>51-9340720</td><td>8310N2 PSM Supplemental EMC Qualification Engineering Evaluation</td><td>002</td></tr> <tr> <td>38-9338135</td><td>AMS Document TEST REPORT EMC Qualification Testing of an 8310N2 Power Supply Module (PSM) – Electrical Fast Transient Immunity</td><td>000</td></tr> <tr> <td>38-9338132</td><td>AMS Document TEST REPORT EMC Qualification Testing of an 8310N2 Power Supply Module (PSM) – Conducted Interference Immunity</td><td>000</td></tr> <tr> <td>38-9338133</td><td>AMS Document TEST REPORT EMC Qualification Testing of an 8310N2 Power Supply Module (PSM) – Combination Wave and Ring Wave Immunity</td><td>000</td></tr> <tr> <td>185-9338143</td><td>8310N2 PSM Supplemental EMC Qualification Master Configuration List</td><td>004</td></tr> <tr> <td>51-9338112</td><td>8310N2 PSM Supplemental EMC Qualification Master Test Plan</td><td>001</td></tr> <tr> <td>56-9338111</td><td>8310N2 PSM Supplemental EMC Qualification Nuclear Qualification Quality Plan</td><td>000</td></tr> </tbody> </table> <p><u>Schedule for Availability</u></p> <p>The availability of Tricon platform changes and supplemental testing information is addressed in the EQ section.</p>	Document No.	Title	Revision	128-9338138	8310N2 PSM Supplemental Qualification EQ Summary Report	000	51-9340720	8310N2 PSM Supplemental EMC Qualification Engineering Evaluation	002	38-9338135	AMS Document TEST REPORT EMC Qualification Testing of an 8310N2 Power Supply Module (PSM) – Electrical Fast Transient Immunity	000	38-9338132	AMS Document TEST REPORT EMC Qualification Testing of an 8310N2 Power Supply Module (PSM) – Conducted Interference Immunity	000	38-9338133	AMS Document TEST REPORT EMC Qualification Testing of an 8310N2 Power Supply Module (PSM) – Combination Wave and Ring Wave Immunity	000	185-9338143	8310N2 PSM Supplemental EMC Qualification Master Configuration List	004	51-9338112	8310N2 PSM Supplemental EMC Qualification Master Test Plan	001	56-9338111	8310N2 PSM Supplemental EMC Qualification Nuclear Qualification Quality Plan	000
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		<div>1- <b>2013</b>: Tricon v10 EMI/RFI Retesting Project – These are readily available for review.</div> <div>2- <b>2012 – 2022</b>: Tricon v10 Evolutionary Changes – These will be available for review on March 1, 2023.</div> <div>3- <b>2018 – 2019</b>: SVDU 2.0 Development Project Equipment Qualification – These are readily available for review.</div> <div>4- <b>2019 – 2022</b>: SVDU 2.0 Evolutionary Changes – These will be available for review on March 1, 2023.</div> <div>5- <b>2022</b>: 8310N2 PSM Supplemental EMC Qualification Project – These are readily available for review.</div>																
3	<div>Availability of HFE Results Summary Reports (RSR)</div> <div>NUREG-0711 specifies, for each program element, the information that should be included in the RSR. NUREG-0711 also clarifies that summaries may be used to address any of the information to be included in each RSR, if references are given for more detailed documents.</div> <div>The LAR, dated July 30, 2022, includes the Human Factors Engineering Analysis IP and the Human System Interface Design IP as Attachments 5 and 10, respectively.</div>	<div>Description of Information to be Provided</div> <div>The Result Summary Reports are described in the HSI Analysis and HSI Design Interface Implementation Plans attached to the LAR.</div> <div>Schedule for submitting HFE Analysis and Human System Interface Design RSR(s)</div> <table><tr><th>Document</th><th>Date Available</th></tr><tr><td>Operating Experience (OER) RSR</td><td>01/16/2023</td></tr><tr><td>Function Requirements (FRA)/Function Allocation (FA)/ Task Analysis(TA) RSR</td><td>01/16/2023</td></tr><tr><td>Treatment of Important Human Actions (TIHA) RSR</td><td>01/16/2023</td></tr><tr><td>Human System Interface Design RSR</td><td>6/5/2023</td></tr></table> <div>Schedule for the availability of supporting documents referenced within the RSR(s).</div> <table><tr><th>Document</th><th>Date Available</th></tr><tr><td>HSI Style Guide</td><td>11/30/2022</td></tr><tr><td>Conceptual Control Room Design Description</td><td>11/30/2022</td></tr></table>	Document	Date Available	Operating Experience (OER) RSR	01/16/2023	Function Requirements (FRA)/Function Allocation (FA)/ Task Analysis(TA) RSR	01/16/2023	Treatment of Important Human Actions (TIHA) RSR	01/16/2023	Human System Interface Design RSR	6/5/2023	Document	Date Available	HSI Style Guide	11/30/2022	Conceptual Control Room Design Description	11/30/2022
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	<p>To determine whether sufficient scope of information will be available with an appropriate time frame to support the NRC's acceptance of the submittal LAR, the following additional information is required:</p> <ul style="list-style-type: none"> <li>a. For each of the IPs listed above, provide the schedule (i.e., month, day, and year) for submitting the RSRs (or equivalent reports).</li> <li>b. Provide the schedule (i.e., month, day, and year) for the availability of supporting documents referenced within the RSRs (or equivalent reports). This information is needed to enable NRC staff to plan any potential audits.</li> </ul>	