Turkey Point Unit 3 and Unit 4

Reactor Protection System
Engineered Safety Feature Actuation System
Nuclear Instrumentation System
Replacements

Safety System Replacement Project LAR

NRC 2nd Presubmittal Meeting Telecon

January 13, 2021

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Agenda – Open Portion

- Introductions
- Purpose of Meeting
- FPL Vendor Oversight Plan (VOP)
- DI&C-ISG-06 Alternate Review Process (ARP) Approach by Turkey Point
- LAR Outline following ISG-06 Rev 2
- Key Takeaways
- Next Pre-Submittal Meeting Content and Schedule

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Introductions – Project Team

- **FPL Nuclear Licensing**
  - Steve Catron – Licensing Fleet Manager
  - Jarrett Mack – Fleet Licensing Lead
  - David Stoia – Turkey Point Site Licensing Lead
  - Bill Maher – Improved Technical Specification Project Director
- **FPL Nuclear Engineering**
  - Brian Dunn – Fleet Design Director
  - Phil Barnes – Design Engineering Manager
  - Wes Frewin – Fleet Digital Design Supervisor
  - Warren Busch – Project Engineer
- **FPL Nuclear Oversight**
  - Faith Banks – Nuclear Oversight & Assessment Director
- **FPL Information Technology**
  - Max Robertson – Cyber Security Program Manager
- **Framatome**
  - Ron Legrand – Project Manager
  - Brian Haynes – Licensing Lead
  - Taha Abdelnaeem --- Engineering Lead
  - Ted Quinn – Licensing Engineer
  - Jerry Mauck – Licensing Engineer
  - Ron Jarrett – Licensing Engineer
  - Rick Turk – Licensing Engineer (HFE)
  - Bill Hannaman – Licensing Engineer (HFE)

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Pre-Submittal Meeting Purpose

- **Provide an overview of FPL's Vendor Oversight Plan**
- **Discuss the use of ISG-06 Alternate Review Process (ARP) and submittal/review process**
  - Provide justification/benefits of using the ARP
- **Provide Overview of RPS/ESFAS/NIS LAR Content**

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FPL Vendor Oversight Plan

- **Vendor Oversight Plan (VOP), described in DI&C-ISG-06 Section C.2.2.1, summary will be provided in the LAR**
  - Includes Safety Related and Non-Safety Related activities that support functions described in the LAR
- **Oversight activities implemented consistent with existing FPL procedures**
  - Quality Assurance
  - Engineering
  - Licensing
  - Project and Risk Management
  - Cyber Security
  - Information Management
- **Supplemental Expertise added to FPL team**
  - Quality Assurance experience with NUPIC audits and Framatome
  - Human Factors experience from Idaho National Labs (INL) (pending)
  - Licensing and nuclear digital system experience, 3rd party review organization
- **Project is classified as enterprise level risk and the oversight activities are comprehensive, technical, and documented**
- **VOP issued final after independent 3rd party review**

Vendor Oversight Plan – Quality Assurance (including software quality assurance program)

- **Limited Scope Audits of Framatome/BHI based on NUPIC Audit Checklist Template**
  - Organizational changes from Framatome (NUPIC audits in 2018 and 2019) to Framatome/BHI LLC
  - Framatome inclusion of Tricon software development and V&V processes
  - Quality program implementation at facilities other than Lynchburg
  - Additional subjects may be identified during audit planning

- **Planned Surveillance Activities**
  - Qualification and Training of Framatome personnel
  - Implementation of controls on sub-contracted equipment and service providers
  - Corrective Action Program implementation on project activities

- **3rd Party review of audit planning and Framatome programs**

Vendor Oversight Plan – Cyber Security Program & Implementation

- **FPL approved Framatome as a trusted supplier**
- **FPL review and approval of Framatome/BHI developed project specific cyber security plan**
  - 3rd Party Independent review
- **FPL audits of Framatome/BHI facilities for implementation of cyber security controls in a secure development environment**
  - Access controls
  - Configuration Management
  - Portable Media Device controls
  - Media Integrity
- **Technical reviews performed on Framatome deliverables**
  - Cyber Security Hardening Procedure
  - Cyber Security Configuration and Assessment Report
  - Cyber Security Component Vulnerability Assessments
- **Cyber security implementation included in DCP**
  - Reviewed in conceptual, mid-course, and final workshops
  - Approved by Cyber Security Assessment Team prior to DCP approval

Vendor Oversight Plan – Engineering/LAR Documents

- **All documents produced for FPL receive owners review**
  - Documents technically adequate, meet objectives, satisfy plant design basis, and can be used for installation, testing, maintenance, operation
  - Performed by knowledgeable personnel in associated discipline
- **Technical reviews performed on design documents and plans**
  - Critical characteristics described and validated, ~35 document types
  - Includes Verification & Validation and testing documents
- **Stakeholder reviews of all Design Change Package documents**
  - All involved plant departments have mandatory documented review
  - Operations focused reviews of HFE, operator actions, post mod testing, surveillance testing, and preventative maintenance processes
- **Licensing Department review**
  - Responsible for reviewing and approval of UFSAR, Tech Spec changes
  - LAR Validation Package LAR: source documents, evidence of completeness and accuracy, SME comprehensive technical reviews
- **3rd Party Reviews**
  - Reviews of risk significant documents, determined by independent org

Vendor Oversight Plan – Project Management

- **Responsible for all documents are submitted per the contract and are reviewed by the appropriate departments**
  - Calculations, drawings, procedures, certification, training. etc.
- **Responsible for Project Risk Mitigation**
  - Vendor performance and oversight actions
  - Maintains a risk register, periodic reviews with vendor/suppliers
  - Periodic status to executive management
- **Facilitates Challenge Boards with senior management**
  - At milestone points for the LAR submittal and DCP
  - Topics: basis documents , IV&V process, initial scoping, emergent issues
- **Develops Field Activity Monitoring Plan**
  - Defines ownership, conformance to plant procedures, contract, established methods, programmatic, and technical requirements
- **Witnessing critical vendor activities**
  - Stakeholder review/participation in Factory Acceptance Test
- **3rd Party reviews of FPL and Framatome activities**

LAR Proposed Milestones

- **Pre-submittal Meetings (as required prior to LAR submittal)**
- **LAR submitted for NRC review, 2nd Quarter of 2021**
- **NRC approval requested by Sept 30, 2022* to support install and NRC Region Inspections**
  - * dependent on sufficient time for supplement approval post ITS SER
  - LAR supplement to be a Tech Spec format change only
- **Turkey Point Unit 3 Spring 2023 outage installation**
- **Turkey Point Unit 4 Fall 2023 outage installation**

ISG-06 Rev. 2, Alternate Review Process(ARP)

- **Use of existing NRC reviews:**
  - Required NRC approved Tricon platform Topical Report
  - NRC Safety Evaluation Report (SER) for a similar upgrade for Diablo Canyon Plant Protection System
- **The NRC ISG-06 ARP is a newly approved process as part of the NRC Modernization Plan (MP#4) that:**
  - reduces licensee's projects risks, schedules, and costs through better licensee control of the detail design and implementation phases
  - allows for increased efficiency in the NRC review process and resources through reduced documentation supplemented with post LAR inspections
  - ensures required and predefined licensee's oversight of the project through the Vendor Oversight Plan commitment (i.e., involvement with the vendor activities and support of NRC inspections)
  - provides for immediate use of recent lessons learned from the Waterford pilot project to enhance the FPL implementation of the ARP

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Licensee Prerequisites for the Alternate Review Process (ISG-06 Section C.2.2)

- **Description of the Licensee's Vendor Oversight Plan:**
  - Summary section provided in the LAR
  - Specifies 2015 version of NQA-1, Part II, Subpart 2.7
  - Covers series of interactions with the vendor throughout design, test, and implementation, IV&V and QA.
- **Reference to an NRC Approved DI&C Topical Report**
  - With commitment to performing detailed software design, implementation and testing
- **Appropriate Licensee Regulatory Commitments in Consideration of Early NRC Staff Decision**
  - Include appropriate regulatory commitments to complete Project Specific Action Items (PSAI)

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Follow-up on Rationale for ISG-06 AR Process by FPL

- **After review with FPL Licensing, vendor licensing and industry representatives, we provide the following reasons for our approach:**
  - Overall industry emphasis to use the ARP to reduce licensing risk and streamlined review process with approved Topical Report
  - If unable to utilize ARP, there would be impacts to the project resource plan due to supporting extended licensing reviews and additional docketed submittals
  - NRC/Eric Benner presentation from August, 2020 at ANS Utility Working Conference (UWC) on benefits of ARP
    - -- Key Output of the NRC Vision for Digital I&C
  - NEI Lessons learned from Waterford CPC LAR ARP, NRC Workshop in February, 2021 on ARP and Regional Inspection Procedure Updates
  - NRC Commission Brief by ACRS Dec 4, 2020, on NRC Digital Strategic Plan completion and Commissioner comments
    - -- Commissioners emphasis on streamlining digital license reviews

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Proposed LAR Content at Submittal

ISG-06 Rev. 2 Enclosure B

		Tier			Plant-Specific Information Submitted with License Amendment Request (Phase 1 for Tier 1, Tier 2, and Tier 3)
	AR	1	2	3	
1.1	X				**(Summary of) Application Software Planning and Processes** (see D.4)
1.2	X				**(Summary of) Vendor Oversight Plan** (see C.2.2)
1.3	X	X	X		**Approved Topical Report Safety Evaluation** (see D.5)
1.4	X	X	X	X	**System Description** (see D.1)
1.5	X	X	X	X	**System Architecture** (see D.2)
1.6	X	X	X	X	**(Summary of) Hardware Equipment Qualification** (see D.3)
1.7	X	X	X	X	**(Unified Compliance/Conformance Matrix for) IEEE Stds 603-1991 and 7-4.3.2-2003** (see D.6)
1.8	X	X	X	X	**(Changes to) Technical Specifications** (see D.7)
1.9	X	X	X	X	**Setpoint Methodology and Calculations** (see D.7) Provided when technical specification setpoint methodology changes or calculations deviate from or are not addressed in an applicable referenced NRC-approved topical report
1.10	X	X	X	X	**Secure Development and Operational Environment** (see D.8)
1.11		X	X	X	**Software Requirements Specification** (see D.9.1)
1.12		X	X	X	**Software Design Specification** (see D.9.2)
1.13		X	X	X	**Design Analysis Reports for Platform Changes** (see D.9.3)
1.14		X	X	X	**System Response Time Analysis Report** (see D.9.7)
1.15			X	X	**Design Report on Computer Integrity, Test and Calibration, and Fault Detection** (see D.9.7)
1.16				X	**Commercial-Grade Dedication Plan** (see D.9.9)
1.17				X	**Quality Assurance Plan for Hardware** (see D.9.10)
1.18				X	**(Summary of) Hardware Development Process** (see D.9.10)

Submittal to include items 1.1 through 1.10 . Notes and list of additional content below.

← Including SER identified site specific actions evaluation

← All qualification testing may not be complete

← Included by reference, standalone documents

Additional included content:

Surveillance Extension and Reduction Analysis

Additional included by reference, standalone documents:

Defense in Depth and Diversity Analysis
Response Time Analysis Report
Testing including Self-Testing Report
ISG-04 Compliance Matrix

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Proposed RPS/ESFAS/NIS LAR Contents (PER ISG-06 REV 2)

1. **INTRODUCTION**
2. **PLANT SYSTEMS DESCRIPTION (D.1)**
3. **SYSTEM ARCHITECTURE (D.2)**
    1. EXISTING ARCHITECTURE (D.2.1)
    2. NEW SYSTEM ARCHITECTURE (D.2.2)
    3. NEW SYSTEM FUNCTIONS (D.2.3 AND D.2.3.1)
    4. FUNCTIONAL ALLOCATION (D.2.4 AND D.2.4.1)
    5. SYSTEM INTERFACES (D.2.5)
    6. FUNCTIONAL DESIGN PRINCIPLES IN THE NEW ARCHITECTURE (D.2.6)
4. **HARDWARE EQUIPMENT QUALIFICATION (D.3)**
5. **I&C SYSTEM DEVELOPMENT PROCESSES (D.4)**
6. **APPLYING REFERENCED TOPICAL REPORT SAFETY EVALUATION (D.5) AND ISG-04 CLAUSE COMPLIANCE**

Proposed RPS/ESFAS/NIS LAR Contents (PER ISG-06 REV 2)

7. COMPLIANCE/CONFORMANCE MATRIX FOR IEEE STANDARDS 603-1991 AND 7-4.3.2-2003 (D.6)
8. TECHNICAL SPECIFICATIONS CHANGES (D.7)
9. SECURE DEVELOPMENT AND OPERATIONAL ENVIRONMENT (D.8)
10. SUMMARY OF VENDOR OVERSIGHT PROCESS
11. REFERENCES
12. APPENDIX A - TP 3&4 RPS/ESFAS/NIS TECHNICAL SPECIFICATION MARKUP
13. OTHER SUPPORTING DOCUMENTATION AS REQUIRED

Open Items from December 9th Open Meeting

- **Communications with NRC**
  - Open question on Establishment of an E-Reading Room
  - Status on use of bi-weekly telecons NRC-FPL, after LAR Submittal

Key Take Away Messages – Open Meeting

- FPL Vendor Oversight Plan, is supplemental to Framatome verification responsibilities under their QA program, uses existing FPL procedure construct, includes executive oversight and independent 3rd party reviews
- FPL to submit LAR for RPS/ESFAS/NIS replacement 2nd quarter of 2021
- Rationale provided for use of the ISG-06 Rev. 2 ARP
- Reviewed the proposed RPS/ESFAS/NIS LAR content and attachments – description for NRC review

Future Pre-Submittal Recommended Meeting Agenda Items

- **Next Meeting**
  - Follow-up of Open Items
  - Proposed Turkey Point 3&4 RPS/ESFAS/NIS Architecture
  - D3 Overview and Initial Results
- **Future Meetings**
  - Tech Spec Surveillance Extension and Reduction
  - Human System Interface (HSI) Overview
  - Others?

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Thank you!

Questions/Comments?

Action Items and Follow-up

Acronym List

Alternate Review Process	ARP
Defense-In-Depth and Diversity Evaluation	D3
Design Change Process	DCP
Engineered Safety Features Actuation System	ESFAS
Florida Power and Light	FPL
Framatome USA	Framatome
Human Factors Engineering	HFE
Human System Interface	HSI
Idaho National Laboratory	INL
Independent Verification and Validation	IV&V
Institute of Electrical and Electronic Engineers	IEEE
Improved Standard Technical Specifications	ITS
Interim Staff Guidance	ISG
License Amendment Request	LAR

Acronym List

Nuclear Instrumentation System	NIS
Nuclear Procurement Issues Corporation	NUPIC
Plant Specific Action Item	PSAI
Reactor Protection System	RPS
Safety Evaluation Report	SER
Safety Video Display Unit	SVDU
Standard Review Plan	SRP
Subject Matter Expert	SME
Technical Specifications	Tech Spec
Tricon PLC	Tricon
Turkey Point Nuclear Plant Units 3 & 4	T.P. 3&4
United States Nuclear Regulator Commission	NRC
Updated Final Safety Analysis Report	UFSAR
Vendor Oversight Plan	VOP