

St. Lucie Units 1 and 2  
Dockets 50-335 and 50-389  
L-2021-159 Enclosure 1

**ENCLOSURE 1**

**CONTENTS OF THE ST. LUCIE PLANT, UNITS 1 AND 2  
IMPROVED TECHNICAL SPECIFICATIONS (ITS) SUBMITTAL**

**(9 TOTAL PAGES, INCLUDING COVER SHEETS)**

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## CONTENTS OF THE ST. LUCIE PLANT IMPROVED TECHNICAL SPECIFICATIONS (ITS) SUBMITTAL

### Executive Summary

The proposed changes from the St. Lucie Plant (PSL) Unit 1 and Unit 2 current Technical Specifications (CTS) to the Improved Technical Specifications (ITS) are based on Revision 5.0 of NUREG 1432, "Standard Technical Specifications – Combustion Engineering Plants." There are no additional NRC approved generic changes (Technical Specification Task Force (TSTF) change travelers) since approval of NUREG-1432, Revision 5, to address in this license amendment request as of September 15, 2021. Additionally, there are no linked PSL submittals associated with this ITS license amendment request. Technical Specification Task Force (TSTF)-GG-13-01, "Improved Technical Specifications Conversion Guidance," Revision 0, was used to prepare the content of the license amendment request.

- The Battery Monitoring and Maintenance Program is included to provide for battery restoration and maintenance per the guidance of IEEE 450-2010, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications." The Notice of Availability for TSTF-500, Revision 2, "DC Electrical Rewrite - Update to TSTF-360," (76FR54510) references the model application and safety evaluation for plant-specific adoption of TSTF-500, Revision 2 (NRC ADAMS Accession No. ML111751792). PSL has verified the applicable information specified in Section 2.2 of the TSTF-500 model application, including applicable UFSAR information. FPL has verified the following information in support of PSL adoption of TSTF-500, Revision 2:
- A letter has been obtained from the manufacturer of the batteries used at PSL Units 1 and 2 verifying the acceptability of using float current monitoring instead of specific gravity monitoring as a reliable and accurate indication of the state-of-charge of the battery and that this will hold true over the life of the battery.
- Measurement equipment used to monitor float current has the necessary accuracy and capability to measure electrical currents in the expected range.
- Spare battery chargers are available and appropriately sized to support each battery. Each 125 VDC battery charger is a full capacity charger. Typically, two battery chargers are operated in parallel to supply the battery and carry the DC loads. However, either connected battery charger can meet full DC bus load demand and recharge its associated battery. In addition, an additional full capacity swing battery charger can be connected to either DC bus.
- Maintaining battery connection resistances below the battery manufacturer specifications keeps the battery bounded by the battery performance data that was used to qualify the cells. The connection resistance readings are maintained within

20% of the baseline resistance values determined during installation for optimum performance of the battery system. IEEE 450-2010 supports this methodology.

Commitments associated with TSTF-500 are provided in Enclosure 5. A description of the UFSAR changes associated with TSTF-500 are provided in Enclosure 6. Commitments and UFSAR revision packages associated with TSTF-500 will be completed prior to implementation of the ITS Amendment.

Several risk informed initiatives incorporated into the Improved Standard Technical Specifications (ISTS) and associated Bases specified in NUREG-1432, Rev. 5.0, have been previously approved and incorporated into the PSL Unit 1 and Unit 2 Technical Specifications. Therefore, information related to the NRC reviewer notes provided in the ISTS and ISTS Bases associated with these risk informed initiatives are provided in the LAR submittals, FPL responses to NRC staff requests for additional information, and accompanying safety evaluations associated with these risk informed license amendments.

PSL adopted a Surveillance Frequency Control Program (SFCP) on June 22, 2015, in License Amendments 223 and 173, for Unit 1 and Unit 2 respectively (NRC ADAMS Accession No. ML15127A066). In the NRC safety evaluation accompanying the SFCP amendments, the NRC concluded that the adoption of TSTF-425, Revision 3, and risk-informed methodology of NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1, as referenced in the Administrative Controls section of the Technical Specifications, satisfies the key principles of risk-informed decisionmaking applied to the relocated Surveillance frequencies as delineated in Regulatory Guide 1.177, Revision 1, and Regulatory Guide 1.174, Revision 2. Changes to Surveillance frequencies listed in the SFCP are made in accordance with NEI 04-10, Revision 1, as specified in CTS Chapter 6 (ITS Chapter 5).

PSL adopted TSTF-422, "Change in Technical Specifications End States (CE NPSD-1186)," Revision 2, with application of site-specific variations and deviations from TSTF-422, on August 30, 2016, in License Amendments 234 and 184, for Unit 1 and Unit 2 respectively (NRC ADAMS Accession No. ML16210A374). As stated in several NRC reviewer notes in the ISTS Bases, the adoption of a MODE 4 end state requires the licensee to make commitments to follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F] and in Revision 2 of WCAP-16364-NP, "Implementation Guidance for Risk Informed Modification to Selected Required Action End States at Combustion Engineering NSSS Plants (TSTF-422)." FPL conducts risk assessments using the procedures and guidance endorsed by Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Regulatory Guide 1.160 endorses the guidance in Section 11 of NUMARC 93-01, Revision 4A. As stated in the safety evaluation accompanying the TSTF-422 End-State amendments, FPL also reviewed the supporting Topical Report WCAP-16364-NP, Revision 2. The NRC staff concluded that PSL's commitment to Regulatory Guide 1.160 guidance is acceptable for application of TSTF-422.

PSL adopted TSTF -505, Revision 1, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b" to include Risk Informed Completion Times (RICTs) for

selected Technical Specification systems. License Amendments 247 and 199, were issued on July 2, 2019, for Unit 1 and Unit 2 respectively, to incorporate the RICTs and an associated administrative program (NRC ADAMS Accession No. ML19113A099). In the NRC safety evaluation accompanying the RICT amendment, the NRC found that the PSL PRA maintenance and change process ensures that the configuration risk management program models used in the RICT calculations will continue to use PRA methods acceptable to the NRC and that the PRA model will be updated as necessary to reflect the as-built and as-operated plant. The NRC also found that appropriate programmatic and procedural controls for the RICT Program are consistent with the guidance of NEI 06-09, Revision 0-A. Controls to calculate Risk Informed Completion Times (RICTs) are provided in the CTS Chapter 6 (ITS Chapter 5) and implemented in accordance with NEI 06-09-A, Revision 0, "Risk-Managed Technical Specifications (RMTS) Guidelines." The LAR submittal, FPL responses to NRC staff requests for additional information, and safety evaluation accompanying the RICT amendment address the implementation of the RICT program to perform a contemporaneous assessment of the overall impact on safety of proposed plant configurations prior to performing and during performance of maintenance activities that remove equipment from service as stated in several NRC reviewer notes in the ISTS Bases.

Enclosure 2 of the submittal for the conversion of the PSL Unit 1 and Unit 2 CTS to the ITS provides the proposed changes to the CTS, discussion of changes for the proposed CTS changes, the PSL Unit 1 and Unit 2 ITS and ITS Bases, as marked up utilizing NUREG-1432, and justification for deviations from the NUREG. Enclosure 2 consists of the following sixteen volumes:

### **Volume Titles**

1. Application of Selection Criteria to the St. Lucie Plant Technical Specifications
2. Generic Determination of No Significant Hazards Considerations and Environmental Assessment
3. ITS Chapter 1.0, Use and Application
4. ITS Chapter 2.0, Safety Limits
5. ITS Section 3.0, Limiting Condition for Operation (LCO) Applicability and Surveillance Requirement (SR) Applicability
6. ITS Section 3.1, Reactivity Control Systems
7. ITS Section 3.2, Power Distribution Limits
8. ITS Section 3.3, Instrumentation
9. ITS Section 3.4, Reactor Coolant System
10. ITS Section 3.5, Emergency Core Cooling Systems (ECCS)
11. ITS Section 3.6, Containment Systems
12. ITS Section 3.7, Plant Systems
13. ITS Section 3.8, Electrical Power Systems
14. ITS Section 3.9, Refueling Operations
15. ITS Chapter 4.0, Design Features
16. ITS Chapter 5.0, Administrative Controls

Volume 1 is provided to assist the Nuclear Regulatory Commission (NRC) in the review and approval of Volumes 2 through 16. Below is a brief description of the content of each of the volumes in this submittal.

## **Volume 1**

Volume 1 provides details concerning the application of the selection criteria to the individual PSL Unit 1 and Unit 2 CTS. Each CTS Specification is evaluated, and a determination is made as to whether the CTS Specification meets the criteria in 10 CFR 50.36(c)(2)(ii) for retention in the proposed ITS.

## **Volume 2**

Volume 2 contains generic evaluations required by 10 CFR 50.91(a), which support a finding of No Significant Hazards Consideration (NSHC). Based on the inherent similarities in the NSHC evaluations, generic evaluations for a finding of NSHC have been provided for the following categories of CTS changes:

- Administrative Changes
- More Restrictive Changes
- Relocated Specifications
- Removed Detail Changes
- Less Restrictive Changes - Category 1 - Relaxation of LCO Requirements
- Less Restrictive Changes - Category 2 - Relaxation of Applicability
- Less Restrictive Changes - Category 3 - Relaxation of Completion Time
- Less Restrictive Changes - Category 4 - Relaxation of Required Action
- Less Restrictive Changes - Category 5 - Deletion of Surveillance Requirement
- Less Restrictive Changes - Category 6 - Relaxation of Surveillance Requirement Acceptance Criteria
- Less Restrictive Changes - Category 7 - Relaxation of Surveillance Frequency
- Less Restrictive Changes - Category 8 - Deletion of Surveillance Requirement Shutdown Performance Requirements
- Less Restrictive Changes - Category 9 - Deletion of Reporting Requirements

For less restrictive changes not covered by a generic Less Restrictive Change category, specific NSHC evaluations have been provided in the applicable Chapter, Section, or Specification in Volumes 3 through 16. Additionally, specific NSHC evaluations have been provided for changes that have been identified beyond the CTS and the ISTS consistent with the guidance of TSTF-GG-13-01.

In addition, Volume 2 contains an evaluation of environmental consideration in accordance with 10 CFR 51.21. It has been determined that the proposed license amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(b), and no environmental impact statement or environmental assessment need be prepared in connection with the proposed license amendment.

## **Volumes 3 through 16**

Volumes 3 through 16 provide the details and justification to support the proposed changes. Each volume corresponds to a Chapter, Section, or Specification of NUREG-1432. Volumes 3, 4, and 15 are arranged by ITS Chapter. Volumes 5 and 16 are arranged by ITS Section. Volumes 6 through 14 are arranged by ITS Specification. Each volume contains the required information to review the conversion to ITS, and include the following:

- Individual Chapter, Section, or Specification, as applicable, in ITS order.
- Relocated/Deleted CTS Specifications (if applicable); and
- ISTS Specifications not adopted in the PSL Unit 1 and Unit 2 ITS (if applicable).

The information for each Chapter, Section, and Specification, as applicable, is organized as follows:

CTS Markup and Discussion of Changes (DOCs)

This section contains a markup of the CTS pages, either for CTS pages associated with an Individual ITS Specification or for Relocated/Deleted CTS Specifications, and the DOCs from the CTS. Other CTS license amendment requests under NRC review, as described in Enclosure 4 of this submittal, are not linked to this license amendment request and have not been incorporated in the proposed change.

The CTS markup pages for each ITS Specification are normally in numerical order. However, more than one CTS Specification is sometimes used in the generation of an ITS Specification. In this case, the CTS pages that are the major contributor to the ITS Specification are shown first, followed by the remaining associated CTS pages in numerical order.

The left-hand margin of the CTS markup pages includes a cross-reference to the equivalent ITS requirement. The upper right-hand corner of the CTS markup pages is annotated with the ITS Specification number to which it applies. Items on the CTS markup pages that are addressed in other proposed ITS Chapters, Sections, or Specifications are annotated with the appropriate reference.

The CTS markup pages are annotated with an alphanumeric designator to identify the differences between the CTS and the proposed ITS. The designator corresponds to a DOC, which provides the description and justification of the change to the CTS. The DOCs are located directly following the associated CTS markup for each Chapter, Section, or Specification, as applicable.

Each proposed change to the CTS is designated as one of the following DOC categories:

<b>Designator</b>	<b>Category</b>
<b>A</b>	ADMINISTRATIVE CHANGES – Changes to the CTS that do not result in new requirements or change operational restrictions or flexibility. These changes are supported in aggregate by a single generic NSHC.
<b>M</b>	MORE RESTRICTIVE CHANGES - Changes to the CTS that result in added restrictions or reduced flexibility. These changes are supported in aggregate by a single generic NSHC.
<b>R</b>	RELOCATED SPECIFICATIONS - Changes to the CTS that relocate specifications that do not meet the selection criteria of

10 CFR 50.36(c)(2)(ii). These changes are supported in aggregate by a single generic NSHC.

- LA** REMOVED DETAIL CHANGES - Changes to the CTS that eliminate detail and relocate the detail to a licensee controlled document. Typically, this involves details of system design and function, or procedural detail on methods of conducting a Surveillance Requirement. These changes are supported in aggregate by a single generic NSHC. In addition, the generic type of removed detail change is identified in italics at the beginning of the DOC.
  
- L** LESS RESTRICTIVE CHANGES - Changes to the CTS that result in reduced restrictions or added flexibility. These changes are supported either in aggregate by a generic NSHC that addresses a particular category of less restrictive change, or by a specific NSHC if the change is not covered by one of the generic categories of less restrictive changes. If the less restrictive change is covered by a generic NSHC, the category of the change is identified in italics at the beginning of the DOC.

The DOCs are numbered sequentially within each letter designator for each ITS Chapter, Section, or Specification. Where a proposed change is applicable to only Unit 1 or Unit 2, it is identified as such at the beginning of the DOC in bold text.

The CTS Bases pages are replaced in their entirety by the proposed PSL Unit 1 and Unit 2 ITS Bases. Therefore, the CTS Bases markup pages are not provided in the ITS submittal.

#### ISTS Markup and Justification for Deviations (JFDs)

This section contains a markup of the NUREG-1432, Volume 1, ISTS pages, either for ISTS pages associated with an Individual ITS Specification or ISTS Specifications not adopted in the PSL ITS, and JFDs from the ISTS. The ISTS pages are annotated with a numeric designator to identify the differences between the ISTS and the proposed ITS. The designator corresponds to a JFD, which provides the justification for the difference. Where a JFD is applicable to only Unit 1 or Unit 2, it is identified as such at the beginning of the JFD in bold text. The JFDs are located directly following the associated ISTS markup for each Chapter, Section, or Specification, as applicable.

The left-hand margin of the ISTS markup pages includes a cross-reference to the equivalent CTS requirement.

#### ISTS Bases Markup and JFDs

This section contains a markup of the NUREG-1432, Volume 2, ISTS Bases pages, either for ISTS Bases pages associated with an Individual ITS Specification or ISTS Specifications not adopted in the PSL Unit 1 and 2 ITS, and JFDs from the ISTS Bases. The ISTS Bases pages are annotated with a numeric designator to identify the differences between the ISTS Bases and the proposed ITS Bases. The designator corresponds to a JFD, which provides the justification for the difference. Where a JFD is applicable to only Unit 1 or Unit 2, it is identified as such at the beginning of the JFD



in bold text. The Bases JFDs are located directly following the associated ISTS Bases markup for each Chapter, Section, or Specification, as applicable. The volumes for ITS Chapters 1.0, 4.0, and 5.0 do not include this section, because NUREG-1432 does not include any Bases for these Chapters.

#### Determination of NSHC

This section contains the determination in accordance with 10 CFR 50.91(a)(1) using the criteria of 10 CFR 50.92(c) to support a finding of NSHC. For changes covered by a generic NSHC, the generic NSHCs are in Volume 2. For less restrictive changes not covered by a generic less restrictive category or have been determined to be a change beyond the CTS and the ITS, a specific NSHC evaluation has been performed. Each evaluation is annotated to correspond to the DOC discussed in the specific NSHC evaluation. For ITS Chapters, Sections, or Specifications for which the changes are covered by a generic NSHC evaluation, a statement that there are no specific NSHCs is provided.

St. Lucie Units 1 and 2  
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**ENCLOSURE 3**

**LICENSEE IDENTIFIED CHANGES THAT MAY REQUIRE  
TECHNICAL BRANCH REVIEW**

**(2 TOTAL PAGES, INCLUDING COVER SHEETS)**

## LICENSEE IDENTIFIED CHANGES THAT MAY REQUIRE TECHNICAL BRANCH REVIEW

Changes included in the Improved Technical Specifications (ITS) conversion submittal that are not consistent with the Current Technical Specifications (CTS) and are not the result of adopting the Improved Standard Technical Specifications (ISTS) as described in NUREG-1432, Rev. 5.0. The following is a list of changes identified in Enclosure 2 that meet this criterion in the St. Lucie Plant (PSL), Unit 1 and Unit 2 ITS conversion submittal, but do not involve a design change to the plant:

1. Change to Engineered Safety Features Actuation System (ESFAS) Main Steam Isolation Signal (MSIS) manual and automatic actuation logic Applicability and action change to match the supported system's Technical Specifications actions. The change is not technical in nature, but rather aligns the MSIS instrumentation actions with the supported system actions. (Refer to Enclosure 2, Volume 8, ITS Section 3.3.4, Discussion of Change (DOC) L01)
2. Add risk informed completion time (RICT) to Unit 1 ESFAS automatic actuation logic and Unit 2 ESFAS MSIS manual actuation. The change is supported by the existing RICT Program and configuration risk management program previously approved in License Amendments 247 and 199, for Unit 1 and Unit 2, respectively. Unit 2 ESFAS automatic actuation logic already applies RICT and both Unit 1 and Unit 2 already apply RICT to manual actuation channels. (Refer to Enclosure 2, Volume 8, ITS 3.3.4 DOCs L04 and L05)
3. Add previously approved program requirements in the Unit 2 Reactor Coolant Pump (RCP) Flywheel Program in addition to the current requirements based on the RCP Flywheel material. In addition, RCP Flywheel Program are proposed for the Unit 1 Technical Specifications and include the same requirements based on RCP flywheel material. Both testing methods have been previously approved by the NRC for PSL. (Refer to Enclosure 2, Volume 16, ITS 5.5, DOCs M01 and L02)
4. The periodic frequency of selected Surveillances in ITS Section 5.5 are proposed to be relocated to the Surveillance Frequency Control Program (SFCP). This deviation from ISTS Rev. 5 and Technical Specification Task Force (TSTF) Traveler TSTF-425 has been previously approved for at least three (3) plants. PSL currently has an approved SFCP. (Refer to Enclosure 2, Volume 16, ITS 5.5, DOC LA01)

St. Lucie Units 1 and 2  
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**ENCLOSURE 4**

**DISPOSITION OF EXISTING LICENSE AMENDMENT REQUESTS**

**(2 TOTAL PAGES, INCLUDING COVER SHEETS)**

## DISPOSITION OF EXISTING LICENSE AMENDMENT REQUESTS

The following License Amendment Request is under NRC review. The following table describes the request, and its effect on the ITS conversion, and its disposition.

<b>DISPOSITION OF EXISTING LICENSE AMENDMENT REQUESTS</b>				
Submittal Date	Description of Change	Affected ITS Submittal Specifications	Affected CTS Pages	Disposition
December 21, 2020	Permit the application of risk-informed completion times (RICT) for the 120-Volt AC Instrument Bus requirements, consistent with TSTF-505, Revision 2, "Provide Risk-Informed Extended Completion Times RITSTF Initiative 4b".	ITS 3.8.7 ITS 3.8.9	Unit 1 pg. 3/4 8-8 Unit 2 pg. 3/4 8-15	Currently with the NRC for review.

St. Lucie Units 1 and 2  
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**ENCLOSURE 5**

**REGULATORY COMMITMENTS**

**(2 TOTAL PAGES, INCLUDING COVER SHEETS)**

## REGULATORY COMMITMENTS

No.	Commitments for TSTF-500	Due Date/Event
1	<p>Revise or develop plant procedures, as applicable, to address the following:</p> <ul style="list-style-type: none"> <li>• minimum required procedural time to measure battery float current is at least 30 seconds or as recommended by the float current measurement instrument manufacturer. This minimum float current measurement time is required to provide a more accurate battery float current reading.</li> <li>• routinely monitor battery room temperature such that a room temperature excursion could reasonably expect to be detected and corrected prior to the average battery electrolyte temperature dropping below the minimum electrolyte temperature.</li> <li>• verification of the selection of the pilot cell or cells when performing the Surveillance that verifies the float voltage of each connected battery cell.</li> <li>• ensure that the modified performance discharge test completely encompasses the load profile of the battery service test and that it adequately confirms the intent of the service test to verify the battery capacity to supply the design basis load profile.</li> </ul>	Upon Implementation
2	<p>Relocate the following requirements to the Battery Monitoring and Maintenance Program and implementing procedures:</p> <ul style="list-style-type: none"> <li>• Battery cell resistance limits in existing Surveillance</li> <li>• Monitoring of battery parameters (i.e., specific gravity, electrolyte level, cell temperature, float voltage, connection resistance, and physical condition)</li> </ul>	Upon Implementation

St. Lucie Units 1 and 2  
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**ENCLOSURE 6**

**LIST OF REQUIRED UPDATED FINAL SAFETY ANALYSIS REPORT (UFSAR)  
DESCRIPTIONS FOR TSTF-500**

**(2 TOTAL PAGES, INCLUDING COVER SHEETS)**



**LIST OF REQUIRED UPDATED FINAL SAFETY ANALYSIS REPORT (UFSAR)  
DESCRIPTIONS FOR TSTF-500**

The following table identifies UFSAR descriptions for the 125 VDC batteries required by St. Lucie Plant (PSL), Units 1 and Unit 2, as part of the adoption of TSTF-500, "DC Electrical Rewrite - Update to TSTF-360," Revision 2. These changes will be included with the required implementation date in the Issuance of Amendment letter.

<b>REQUIRED UFSAR DESCRIPTION</b>	<b>DUE DATE/EVENT</b>
<p>PSL will change or verify that the UFSAR:</p> <ol style="list-style-type: none"> <li>1. Describes how a 5 percent design margin for the batteries corresponds to a 2 amp float current value indicating that the battery is 95 percent charged.</li> <li>2. States that long term battery performance is supported by maintaining a float voltage greater than or equal to the minimum established design limits provided by the battery manufacturer.</li> <li>3. Describes how the batteries are sized with correction margins that include temperature and aging and how these margins are maintained.</li> <li>4. States the minimum established design limit for battery terminal float voltage.</li> <li>5. States the minimum established design limit for electrolyte level.</li> <li>6. States the minimum established design limit for electrolyte temperature.</li> <li>7. Describes how each battery is designed with additional capacity above that required by the design duty cycles to allow for temperature variations and other factors.</li> <li>8. Describes normal DC system operation, i.e., powered from the battery chargers with the batteries floating on the system, and a loss of normal power to the battery charger describing how the DC load is automatically powered from the station batteries.</li> </ol>	<p>Upon implementation (applies to all)</p>