



March 23, 2017  
L-2017-047  
10 CFR 50.55a

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

RE: Turkey Point Nuclear Plant, Units 3 and 4  
Docket Nos. 50-250 and 50-251  
Fifth Ten-Year Inservice Testing Interval Relief Request No. PR-03

Pursuant to 10 CFR 50.55a(z)(1), Florida Power & Light Company (FPL) hereby requests approval of Relief Request PR-03 for the Turkey Point Units 3 and 4 (Turkey Point) Fifth Ten-Year Inservice Testing (IST) Interval. Relief is requested from the applicable American Society of Mechanical Engineers (ASME) Code instrument range requirements, as they relate to Boric Acid Transfer Pump (BATP) inservice testing, on the basis that the proposed alternative would provide an acceptable level of quality and safety.

The enclosure to this letter provides Relief Request PR-03.

This letter contains no new regulatory commitments.

If you have any questions or require additional information, please contact Mr. Mitch Guth, Licensing Manager, at (305) 246-6698.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mitch Guth", is written over a light blue horizontal line.

Mitch Guth  
Licensing Manager  
Turkey Point Nuclear Plant

Enclosure  
Relief Request PR-03

cc: USNRC Regional Administrator, Region II  
USNRC Project Manager, Turkey Point Nuclear Plant  
USNRC Senior Resident Inspector, Turkey Point Nuclear Plant

**ENCLOSURE**

**RELIEF REQUEST NO. PR-03  
FIFTH TEN-YEAR INSERVICE TESTING (IST) INTERVAL - TURKEY POINT UNITS 3 AND 4  
PROPOSED ALTERNATIVE TO ASME OM CODE, ISTB-3510(B)(1),  
FOR BORIC ACID TRANSFER PUMP INSERVICE TESTING**

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**1.0 ASME CODE COMPONENTS AFFECTED**

The components affected by this relief request are listed in the Turkey Point ST Program (Reference 8.1), as follows:

Pump Tag	Pump Function	Pump Type
3-P203A	Boric Acid Transfer	Centrifugal
3-P203B	Boric Acid Transfer	Centrifugal
4-P203A	Boric Acid Transfer	Centrifugal
4-P203B	Boric Acid Transfer	Centrifugal

**2.0 APPLICABLE CODE EDITION AND ADDENDA**

The applicable Code edition and addenda for the Turkey Point Fifth Ten-Year IST Interval are the American Society of Mechanical Engineers (ASME) Code for Operations and Maintenance of Nuclear Power Plants, 2004 Edition with Addenda through 2006 (ASME OM Code-2004).

The Turkey Point Fifth Ten-Year IST Interval began on February 22, 2015, for Turkey Point Unit 3, and on April 15, 2015, for Turkey Point Unit 4.

**3.0 APPLICABLE CODE REQUIREMENT**

The applicable Code requirement for which relief is requested, as it relates to BATP inservice testing, is ASME OM Code-2004, paragraph ISTB-3510(b)(1), which states:

“The full-scale range of each analog instrument shall not be greater than three times the reference value.”

**4.0 REASON FOR REQUEST**

The reason for requesting relief pursuant to 10 CFR 50.55a(z)(1) is that the existing flow rate instrument used for BATP comprehensive testing does not meet the analog instrument range requirement of ASME OM Code-2004, ISTB-3510(b)(1). However, compliance with ISTB-3510(b)(1) would not yield more accurate readings than obtained by the instrument presently installed.

Specifically, the BATP comprehensive test, performed in accordance with ASME OM Code-2004, ISTB-5123, consists of varying the flowrate to an established reference point and comparing the measured pump differential pressure against the requirements of ASME OM Code-2004, Table ISTB-5121-1, Centrifugal Pump Test Acceptance Criteria. In establishing the reference value for flowrate, FPL utilizes analog flow instruments FI-3/4-110, Emergency Boration Flow Indicator, (where “3/4” designates FI-3-110 for Unit 3 and FI-4-110 for Unit 4). However, the gauges for FI-3/4-110 range from zero to 200 gallons per minute (gpm), whereas the BATP flow reference

value for the comprehensive test is 60 gpm. Hence, FI-3/4-110 do not satisfy the analog instrumentation range requirements of ISTB-3510(b)(1) since the 200 gpm full-scale range of FI-3/4-110 exceeds three times the pumps' reference value (i.e. 180 gpm).

Non-compliance with the ISTB-3510(b)(1) instrument range requirement for FI-3/4-110 was first identified in 2016. The issue was entered into the Corrective Action Program (CAP), whereby a request for relief from ISTB-3510(b)(1) was determined to be the appropriate corrective action.

FPL requests relief from the instrument range requirement of ISTB-3510(b)(1), which requires that the full-scale range of each analog instrument shall not be greater than three times the reference value. Relief is requested for flow instruments FI-3/4-110.

## 5.0 PROPOSED ALTERNATIVE AND BASIS FOR USE

FPL proposes as an alternative to ASME OM Code-2004, ISTB-3510(b)(1), continued use of FI-3/4-110 when conducting the B ATP comprehensive test. The basis for the proposed alternative is that compliance with the instrumentation range requirement of ASME OM Code-2004, ISTB-3510(b)(1), would not result in obtaining information more useful than that currently available using the existing flow instrumentation. FPL's determination is based upon the following:

NUREG 1482, Guidelines for Inservice Testing at Nuclear Power Plants (Reference 8.2), states that when the range of a permanently installed analog instrument is greater than three times the reference value but the accuracy of the instrument is more conservative than required by the Code, the staff may grant relief when the combination of the range and accuracy yields a reading at least equivalent to the reading achieved using instruments meeting the Code requirements. NUREG-1482 further states that the use of any available instrument that meets the intent of the Code for the actual reading yield an acceptable level of quality and safety for testing.

ASME OM Code-2004, ISTB-3510(a) states that the instrument accuracy shall be within the limits of Table ISTB-3510-1, Required Instrument Accuracy. For the measured flowrate during comprehensive pump testing, Table ISTB-3510-1 requires an instrument accuracy of +/- 2% of full scale. The accuracy of installed flowrate instruments, FI-3/4-110, is +/- 1.5% and thereby exceeds the requirements of Table ISTB-3510-1 for B ATP comprehensive test flow measurements. Moreover, the overall measured reading using FI-3/4-110, equates to +/- 3.0 gpm (i.e. +/- 1.5% of 200 gpm) whereas the measured reading using a Code compliant flow meter equates to +/- 3.6 gpm (i.e. +/- 2% of 180 gpm). Hence even though the instrument range of FI-3/4-110 is above the limits of ISTB-3510(b)(1), the combination of range and accuracy yield an overall measured reading more accurate than the measured reading for a flow meter compliant with the instrumentation requirements of ISTB-3510(a) and ISTB-3510(b)(1). Accordingly, the installed flow instruments, FI-3/4-110, meet the recommendations in NUREG-1482, Section 5.5.1, Range and Accuracy of Analog Instruments, for requesting relief from ISTB-3510(b)(1). Table 1 to this enclosure summarizes the combined effect of range and accuracy for flow instruments FI-3/4-110 versus a Code compliant instrument.

Based upon the foregoing, FPL asserts that continued use of the installed instruments, FI-3/4-110, yields a measured reading of greater overall accuracy than the reading achieved from a Code compliant instrument, providing thus an acceptable level of quality and safety to the ASME Code ISTB-3510(b)(1) requirements. FPL will use installed flow instruments, FI-3/4-110, when performing B ATP comprehensive inservice testing for the remainder of the Fifth Ten-Year IST Interval as an alternative to ASME Code ISTB-3510(b)(1) requirement.

## **6.0 DURATION OF PROPOSED ALTERNATIVE**

The duration of the proposed alternative from ASME OM Code-2004, ISTB-3510(b)(1), is for the remainder of the Turkey Point Units 3 and 4 Fifth Ten-Year IST Interval. The Fifth Ten-Year IST Interval expires on February 21, 2025, for Unit 3, and on April 14, 2025, for Unit 4.

## **7.0 PRECEDENTS**

In 2016, the NRC Staff approved a similar relief request for Turkey Point's Fifth Ten-Year IST Interval (Reference 8.3).

## **8.0 REFERENCES**

- 8.1 FPL letter L-2016-139, Inservice Testing (IST) Program Plan, dated July 6, 2016 (ADAMS Accession No. ML16202A067)
- 8.2 NUREG-1482, Guidelines for Inservice Testing at Nuclear Power Plants, Revision 2 (ADAMS Accession No. ML13295A020)
- 8.3 NRC letter dated January 22, 2016, Turkey Point Nuclear Generating Unit Nos. 3 and 4 - Safety Evaluation for Relief Request No. PR-02, for the Fifth 10-Year Inservice Testing Interval Regarding Requirements for the Quarterly Testing of the Residual Heat Removal Pumps (CAC NOS. MF6388 AND MF6389), (ADAMS Accession No. ML16011A205)

**Inservice Testing Program Relief Request No. PR-03**

**Table 1**

**Comparison of Flow Instrument (Gauge) Range and Accuracy**

Affected Flowrate Instrumentation:

FI-3-110 EMERGENCY BORATION FLOW INDICATOR  
FI-4-110 EMERGENCY BORATION FLOW INDICATOR

	<b>Gauge Range</b>	<b>Accuracy</b>	<b>Combined Flow Instrument Inaccuracy</b>
Turkey Point Instrumentation	0 - 200 gpm	+/- 1.5 %	+/- 3.0 gpm
ASME CODE	0 - 180 gpm <sup>(1)</sup>	+/- 2.0 % <sup>(2)</sup>	+/- 3.6 gpm

<sup>(1)</sup> ISTB 3510(b)(1) [percent full-scale]

<sup>(2)</sup> Table ISTB-3510-1