



JUN 10 2015

L-2015-099  
10 CFR 50.55a

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

RE: Florida Power and Light Company  
Turkey Point Units 3 and 4  
Docket Nos. 50-250 and 50-251  
Fifth Ten-Year Interval Inservice Testing (IST) Program  
Relief Request No. PR-02

Pursuant to 10 CFR 50.55a(z)(1), Florida Power & Light (FPL) hereby requests approval of the attached Relief Request No. PR-02, for the Fifth Ten-Year Interval Inservice Testing Program.

FPL requests relief from the instrument range requirements of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code), Section ISTB-3510(b)(1), which requires that the full scale range of each analog instrument not to exceed three times the reference value. Relief is requested for the Turkey Point Units 3 and 4 suction and discharge pressure instruments for the Residual Heat Removal (RHR) pumps during the quarterly testing. As an alternative, FPL is proposing to use the existing RHR Pump instrumentation, without meeting the 1/3 range requirements of the Code, but which exceeds the Code required accuracy that will be applied to the quarterly tests of the RHR pumps. The details of the 10 CFR 50.55a request are provided in the attached Relief Request PR-02.

FPL has determined that the proposed alternative as described in attached relief request provides an acceptable level of quality and safety.

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 black ink, appearing to read 'Michael Kiley', is written over a horizontal line.

Michael Kiley  
Site Vice President  
Turkey Point Nuclear Plant

Attachment

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

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**Inservice Testing Relief Request No. PR-02  
Turkey Point Units 3 and 4  
Residual Heat Removal Pump Suction and Discharge Pressure Gauges**

**Proposed Alternative  
In Accordance with 10 CFR 50.55a(z)(1)  
Alternative Provides Acceptable Level of Quality and Safety**

**1. ASME Code Components Affected**

3P210A	3A Residual Heat Removal Pump
3P210B	3B Residual Heat Removal Pump
4P210A	4A Residual Heat Removal Pump
4P210B	4B Residual Heat Removal Pump

**2. Applicable Code and Addenda**

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

The Code of Record for the Turkey Point Units 3 and 4, Fifth Ten-Year Interval Inservice Testing (IST) Program is the 2004 Edition with the 2005 and 2006 Addenda of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code).

**3. Applicable Code Requirement**

ASME OM Code ISTB-3510(b)(1), 2004 Edition with the 2005 and 2006 Addenda – The full-scale range of each analog instrument shall not be greater than three times the reference value.

**4. Reason for Request**

For Group A and Group B tests, the Code requires instrument accuracy to be within 2% of full-scale and the full scale range of each instrument to be no greater than three times the reference value.

At Turkey Point the Residual Heat Removal (RHR) Pumps are considered Group A pumps. The installed suction and discharge pressure gauges are sized to accommodate pressures up to 600 psig expected under standby, cold shutdown, and emergency operation modes. The instrument range is 0 to 600 psig. During the quarterly testing the typical RHR pump differential pressure (delta-P) is approximately 142 psig (discharge pressure approximately 160 psig and suction pressure approximately 18 psig) and as a result the installed suction and discharge pressure instrument ranges exceed the maximum Code allowed range of three times the reference value for the quarterly surveillances.

Pursuant to 10 CFR 50.55a, "Codes and Standards," paragraph (z)(1) Florida Power & Light Company (FPL) requests relief from the instrument range requirements of ISTB-3510(b)(1), which requires that the full scale range of each analog instrument to exceed three times the reference value. Relief is requested for the suction and discharge pressure instruments for the RHR pumps during the quarterly testing.

## 5. Proposed Alternative and Basis for Use

As an alternative, FPL is proposing to use the existing Turkey Point RHR Pump instrumentation, without meeting the requirements of ISTB-3510(b)(1), but which exceed the Code required accuracy that will be applied to Group A quarterly tests of the RHR pumps. This relief request does not apply to comprehensive RHR pump testing.

Table 1 presents a comparison between the permanently installed pressure gauges on the suction and discharge piping of the RHR pumps along with the Code required ranges and accuracies for both Group A quarterly tests.

Figure 1 presents the existing RHR Suction and Discharge Pressure Gauges to be used. These suction and discharge pressure instruments are calibrated to an accuracy of +/- 0.25 % and are of the "twice around" type such that they may accurately indicate pressure over all modes of RHR operations (Shutdown Cooling and Emergency Core Cooling). The instrument range on the first revolution is 0 to 300 psig and 300 to 600 psig on the second revolution.

### Suction Pressure

Suction pressure measurements are recorded and used to derive the pump differential pressure through calculation. The accuracy of the suction pressure measurement normally has little or no effect on the results of this calculation since, generally, the pump discharge pressure exceeds the suction pressure by 6 to 7 times the reference value. When determining pump differential pressure (DP), the RHR pump DP is approximately 142 psi (discharge pressure approximately 160 psig, while suction pressure is approximately 18 psig). The maximum effect of suction pressure inaccuracies is  $0.25\% \times 600$  psig, or 1.5 psig. The Code required gauge range for this suction pressure reference value (18 psig) would be 0 to 54 psig. The Code accuracy requirement of 2% would cause a maximum inaccuracy of  $2.0\% \times 60$  psig, or 1.1 psig, as presented in Table 1.

### Discharge Pressure

Discharge pressure measurements are also recorded and used to derive the pump differential pressure through calculation. The RHR pump differential pressure (DP) is approximately 142 psig (discharge pressure approximately 160 psig while suction pressure is approximately 18 psig). The maximum effect of the discharge pressure inaccuracies is  $0.25\% \times 600$  psig, or 1.5 psig. The Code required gauge range for this discharge pressure reference value (160 psig) would be 0 to 480 psig. The Code accuracy requirement of 2% would cause a maximum inaccuracy of  $2.0\% \times 480$  psig, or 9.6 psig, as presented in Table 1.

### Combination

Based on the inaccuracies of the suction and discharge pressure gauges (+/- 1.5 psig), the largest possible error in the differential pressure calculation is +/- 3 psig. Use of gauges with Code

required ranges, and applying the Code accuracy requirements, the largest possible inaccuracies would be 1.1 psig + 9.6 psig, or 10.7 psig, as presented in Table 1.

Therefore, the use of permanently installed pressure instruments would reduce the overall instrument inaccuracies with respect to the differential pressure for the quarterly test from 10.7 psig to 3.0 psig.

Based on the overall instrument inaccuracies, the proposed alternative to use the permanently installed pressure instrumentation provides an acceptable level of quality and safety.

**6. Duration of Proposed Alternative**

This proposed alternative will be utilized for the duration of the Fifth Ten Year Inservice Testing Interval for Turkey Point Units 3 and 4. The Fifth Ten-Year Interval start dates are February 22, 2015 for Unit 3 and April 15, 2015.

**7. Precedents**

This request was previously approved by the Nuclear Regulatory Commission for the Fourth Ten Year Interval at Turkey Point (ML042820470).

**Turkey Point Units 3 and 4**  
**Inservice Testing Program Relief Request No. PR-02**

**Table 1**

**Comparison of Pressure Instrument (Gauge) Ranges and Accuracies**

**Suction Pressure**

	<b>Gauge Range</b>	<b>Accuracy</b>	<b>Suction Pressure Inaccuracy</b>
Turkey Point	0 – 600 psig	0.25 %	1.5 psig
Group A	0 – 54psig	2.0 %	1.1 psig

**Discharge Pressure**

	<b>Gauge Range</b>	<b>Accuracy</b>	<b>Discharge Pressure Inaccuracy</b>
Turkey Point	0 – 600 psig	0.25 %	1.5 psig
Group A	0 – 480 psig	2.0 %	9.6 psig

**Combination – Differential Pressure**

	<b>Suction Gauge Range</b>	<b>Suction Pressure Accuracy</b>	<b>Discharge Gauge Range</b>	<b>Discharge Pressure Accuracy</b>	<b>Total Inaccuracy</b>
Turkey Point	0 – 600 psig	0.25 % (1.5 psig)	0 – 600 psig	0.25 % (1.5 psig)	3.0 psig
Group A	0 – 54 psig	2.0 % (1.1 psig)	0 – 480 psig	2.0 % (9.6 psig)	10.7 psig

**Turkey Point Units 3 and 4**  
**Inservice Testing Program Relief Request No. PR-02**

**Figure 1**

**RHR Suction and Discharge Pressure Gauge**

