



10 CFR 50.73  
L-2020-112  
June 24, 2020

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

RE: Turkey Point Unit 3  
Docket No. 50-250  
Reportable Event: 2020-001-00  
Date of Event: May 7, 2020  
Technical Specification Action Not Taken for Unrecognized Inoperable Reactor Protection System (RPS) and Engineered Safety Feature Actuation System (ESFAS) Instrument Channel Functional Units.

The attached Licensee Event Report 05000250/2020-001-00 is submitted pursuant to 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by the Technical Specifications, and 10 CFR 50.73(a)(2)(v)(D) as a condition that could have affected equipment required for event mitigation.

If there are any questions, please call Mr. Robert Hess at 305-246-4112 or e-mail Robert.Hess@fpl.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'B. Stamp'.

Brian Stamp  
Site Director – Turkey Point Nuclear  
Florida Power & Light Company

Attachments: USNRC Forms 366 and 366A, current revision

cc: USNRC Project Manager, Turkey Point Plant  
USNRC Site Resident Inspector, Turkey Point Plant  
Chief, Florida Bureau of Radiation Control



# LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form

<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/>)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Information Services Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to [Infocollects.Resource@nrc.gov](mailto:Infocollects.Resource@nrc.gov), and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503; e-mail: [oir\\_submission@omb.eop.gov](mailto:oir_submission@omb.eop.gov). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

|  |                                      |                          |
|--|--------------------------------------|--------------------------|
| <b>1. Facility Name</b><br>Turkey Point Unit 3 | <b>2. Docket Number</b><br>05000 250 | <b>3. Page</b><br>1 OF 4 |
|--|--------------------------------------|--------------------------|

**4. Title**  
Technical Specification Action Not Taken for Unrecognized Inoperable Reactor Protection System (RPS) and Engineered Safety Feature Actuation System (ESFAS) Instrument Channel Functional Units.

|                      |     |      |                      |                   |         |                       |     |      |                                     |               |
|----------------------|-----|------|----------------------|-------------------|---------|-----------------------|-----|------|-------------------------------------|---------------|
| <b>5. Event Date</b> |     |      | <b>6. LER Number</b> |                   |         | <b>7. Report Date</b> |     |      | <b>8. Other Facilities Involved</b> |               |
| Month                | Day | Year | Year                 | Sequential Number | Rev No. | Month                 | Day | Year | Facility Name                       | Docket Number |
| 05                   | 07  | 2020 | 20                   | - 001             | - 00    | 06                    | 24  | 2020 | Facility Name                       | Docket Number |
|                      |     |      |                      |                   |         |                       |     |      |                                     | 05000         |

|                          |  |   |  |   |
|--------------------------|--|---|--|---|
| <b>9. Operating Mode</b> | <b>11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)</b> |   |  |   |
| <b>1</b>                 | <input type="checkbox"/> 20.2201(b)  | <input type="checkbox"/> 20.2203(a)(3)(i)             | <input type="checkbox"/> 50.73(a)(2)(ii)(A)                                    | <input type="checkbox"/> 50.73(a)(2)(viii)(A) |
|                          | <input type="checkbox"/> 20.2201(d)  | <input type="checkbox"/> 20.2203(a)(3)(ii)            | <input type="checkbox"/> 50.73(a)(2)(ii)(B)                                    | <input type="checkbox"/> 50.73(a)(2)(viii)(B) |
|                          | <input type="checkbox"/> 20.2203(a)(1)   | <input type="checkbox"/> 20.2203(a)(4)                | <input type="checkbox"/> 50.73(a)(2)(iii)                                      | <input type="checkbox"/> 50.73(a)(2)(ix)(A)   |
|                          | <input type="checkbox"/> 20.2203(a)(2)(i)  | <input type="checkbox"/> 50.36(c)(1)(i)(A)            | <input type="checkbox"/> 50.73(a)(2)(iv)(A)                                    | <input type="checkbox"/> 50.73(a)(2)(x)       |
| <b>10. Power Level</b>   | <input type="checkbox"/> 20.2203(a)(2)(ii)   | <input type="checkbox"/> 50.36(c)(1)(ii)(A)           | <input type="checkbox"/> 50.73(a)(2)(v)(A)                                     | <input type="checkbox"/> 73.71(a)(4)          |
| <b>100</b>               | <input type="checkbox"/> 20.2203(a)(2)(iii)  | <input type="checkbox"/> 50.36(c)(2)                  | <input type="checkbox"/> 50.73(a)(2)(v)(B)                                     | <input type="checkbox"/> 73.71(a)(5)          |
|                          | <input type="checkbox"/> 20.2203(a)(2)(iv)   | <input type="checkbox"/> 50.46(a)(3)(ii)              | <input type="checkbox"/> 50.73(a)(2)(v)(C)                                     | <input type="checkbox"/> 73.77(a)(1)          |
|                          | <input type="checkbox"/> 20.2203(a)(2)(v)  | <input type="checkbox"/> 50.73(a)(2)(i)(A)            | <input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)                          | <input type="checkbox"/> 73.77(a)(2)(i)       |
|                          | <input type="checkbox"/> 20.2203(a)(2)(vi)   | <input checked="" type="checkbox"/> 50.73(a)(2)(i)(B) | <input type="checkbox"/> 50.73(a)(2)(vii)                                      | <input type="checkbox"/> 73.77(a)(2)(ii)      |
|                          |  | <input type="checkbox"/> 50.73(a)(2)(i)(C)            | <input type="checkbox"/> Other (Specify in Abstract below or in NRC Form 366A) |   |

|  |   |
|--|---|
| <b>12. Licensee Contact for this LER</b> |   |
| <b>Licensee Contact</b><br>David Stoia   | <b>Telephone Number</b> (Include Area Code)<br>305-246-6538 |

|   |        |           |              |                    |                                     |        |           |              |                    |      |
|---|--------|-----------|--------------|--------------------|-------------------------------------|--------|-----------|--------------|--------------------|------|
| <b>13. Complete One Line for each Component Failure Described in this Report</b>                                    |        |           |              |                    |                                     |        |           |              |                    |      |
| Cause   | System | Component | Manufacturer | Reportable to ICES | Cause                               | System | Component | Manufacturer | Reportable to ICES |      |
| <b>14. Supplemental Report Expected</b>   |        |           |              |                    | <b>15. Expected Submission Date</b> |        |           | Month        | Day                | Year |
| <input type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date) <input checked="" type="checkbox"/> No |        |           |              |                    |                                     |        |           |              |                    |      |

**Abstract** (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines)

On 5/7/2020 with Unit 3 at 100% power, during scheduled calibration of the Eagle 21 system, it was discovered that the deviation between indicated and reference Delta-T exceeded acceptance criterion. The affected instrument channel provides temperature readings to specific Reactor Protection System (RPS) and Engineered Safety Features Actuation System (ESFAS) functions. The two redundant instrument channels were unaffected. Upon discovery, the affected instrument channel was declared inoperable and the associated bi-stables were placed in the tripped (safe) condition in accordance with Technical Specification (TS) Table 3.3-1 Action 13 and Table 3.3-2 Action 25. The condition was corrected and instrument channel declared operable on 5/7/2020 at 2107 hours. During investigation, it was recognized that the condition existed since the baseline calibration that was performed during the recently completed refueling outage, exceeding the time limit specified in TS. The event is reportable under 10 CFR 50.73(a)(2)(i)(B) since TSAS AOTs were not met, and 10 CFR 50.73(a)(2)(v)(D) since the condition was found to be a loss of safety function for the affected ESFAS Functional Units.



## LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

(See NUREG-1022, R.3 for instruction and guidance for completing this form  
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Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Information Services Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to [Infocollects.Resource@nrc.gov](mailto:Infocollects.Resource@nrc.gov), and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503; e-mail: [oira\\_submission@omb.eop.gov](mailto:oira_submission@omb.eop.gov). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

| 1. FACILITY NAME    | 2. DOCKET NUMBER | 3. LER NUMBER |                             |                  |
|---------------------|------------------|---------------|-----------------------------|------------------|
| Turkey Point Unit 3 | 05000- 250       | YEAR<br>2020  | SEQUENTIAL<br>NUMBER<br>001 | REV<br>NO.<br>00 |

### NARRATIVE

#### EVENT DESCRIPTION

On 5/7/2020 at 0948, during a Nuclear Instrument channel check, it was discovered that the difference between indicated Delta-T and reference Delta-T on one channel exceeded acceptance criterion. This condition resulted in the affected Eagle 21 Channel II [JC, CHA] Functional Units (FU) being declared inoperable. The bistables of the affected functions were placed in the tripped condition on 5/7/2020 at 11:25 to satisfy the applicable TS Action Statements. On 5/7/2020 at 21:07 the affected Eagle 21 functions were declared operable after the condition was corrected.

Eagle 21 Channel II provides temperature input to ESFAS functions that are required by TS Table 3.3-2 to be operable in Modes 3 and above, and to Reactor Protection System (RPS) functions that are required by TS Table 3.3-1 to be operable in Modes 2 and above. During investigation, it was recognized that the condition was caused by calibration activities performed during a recently completed refueling outage. During initial calibration of Eagle 21 Channel II while Unit 3 was shutdown, an inaccurate streaming constant was uploaded to the Eagle 21 Channel II processor, affecting the RCS temperature calculations. This rendered three ESFAS Functional Units (FU) described in Tech Spec Table 3.3-2 inoperable from the time Unit 3 entered Mode 3 until the first 100% power calibration was completed on 5/6/2020. Because inaccurate OTDT and OPDT setpoint constants were installed during the 100% power calibration, OTDT and OPDT allowable setpoints listed in TS Table 2.2-1 were exceeded, rendering the OTDT and OPDT RPS functions inoperable at that point until the condition was discovered during a subsequent channel check on 5/7/2020. The condition was corrected and all functions returned to service on 5/7/2020 at 2107. During the period the condition was unrecognized, TSAS directed in Tables 2.2-1, 3.3-1, and 3.3-2 were not met within the AOTs:

| FU-        | Description-  | TSAS-                                      | Period TSAS Not Met-   |
|------------|---|--|--|
| 1f (ESFAS) | Hi Steam Flow/Low Tav input to Safety Injection     | Table 3.3-2 Action 25                      | 4/21 04:37 - 5/6 10:35   |
| 4d (ESFAS) | Hi Steam Flow/Low Tav input to Steam Line Isolation | Table 3.3-2 Action 25                      | 4/21 04:37 - 5/6 10:35   |
| 8b (ESFAS) | Low Tave Input to ESFAS actuation interlocks        | Table 3.3-2 Action 19                      | 4/26 09:59 - 4/26 13:35<br>4/26 17:14 - 4/26 19:20<br>4/27 14:20 - 4/27 15:38<br>4/27 16:27 - 4/27 17:05 |
| 5 (RPS)    | Overtemperature Delta-T (OTDT)                      | TS 2.2-1 Action b<br>Table 3.3-1 Action 13 | 5/6 15:00 - 5/7 11:25  |
| 6 (RPS)    | Overpressure Delta-T (OPDT)                         | TS 2.2-1 Action b<br>Table 3.3-1 Action 13 | 5/6 15:00 - 5/7 11:25  |

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| Turkey Point Unit 3 | 05000-250        | 2020          | 001               | 00      |

**NARRATIVE****CAUSE**

A technical error in the shutdown calibration procedure caused an incorrect streaming constant to be installed for one RCS hot leg RTD [AB, TE], resulting in an inaccurate Tave input to the Eagle 21 Channel II ESFAS functions. The inaccurate Tave value caused a setpoint calculation error during the subsequent 100% power calibration, causing the Eagle 21 Channel II OTDT and OPDT RPS setpoints to exceed the allowable values described in Tech Specs.

**SAFETY ANALYSIS**

During the periods where the TSAS were not met for the Channel II ESFAS functions, the functions would have been delayed, but not completely inhibited, in response to an actual low Tave condition. During the TSAS non-compliant intervals where Channel I or Channel III was being calibrated (total of 7 hours, 38 minutes), the respective bistables were placed in the tripped (safe) status, making up a portion of the logic for ESFAS actuation. This would have allowed ESFAS actuation to occur at the correct Tave value. However, in normal channel alignment, ESFAS actuation would have occurred at the incorrect Tave value. This condition is therefore considered a loss of safety function for the 3 affected ESFAS Functional Units. Since the period of time that the Tave input value was affected is of small duration, and that the function was not completely inhibited, the safety significance of exceeding the AOTs of the affected ESFAS functions is considered low.

During the periods where the TSAS were not met for the Channel II OTDT and OPDT RPS functions, Channels I and III remained operable and available. Since the minimum number of channels to initiate RPS was met, the condition did not cause a loss of safety function of the OTDT and OPDT Functional Units.

A PRA risk assessment concluded that during the period that the specified safety function was not available, the risk probability was well below the NRC acceptance criteria. As a result, the safety significance of this event is considered low.

**CORRECTIVE ACTIONS**

Corrective Actions are in accordance with AR 2355849. The correct streaming constant was installed for the Eagle 21 Channel II RCS hot leg RTD. All RPS and ESFAS functions are operable. The calibration procedure has been revised and corrected.

**ADDITIONAL INFORMATION**

EIIS Codes are shown in the format [IEEE system identifier, component function identifier, second component function identifier (if appropriate)].

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|                     |                  | YEAR          | SEQUENTIAL NUMBER | REV NO. |
| Turkey Point Unit 3 | 05000- 250       | 2020          | - 001             | - 00    |

**NARRATIVE****FAILED COMPONENTS IDENTIFIED**

None.

**SIMILAR EVENTS**

LER 2016-001-00 describes an event at Turkey Point Unit 4 where an incorrect calibration coefficient was installed for a Channel III RCS RTD, adversely affecting the Channel III OTDT and OPDT RPS setpoints. Channel III OTDT and OPDT had been inoperable for approximately 5 days with no Tech Spec-directed actions taken. The cause of the event described in LER 2016-001-00 was found to be the absence of a controlled engineering document describing the derivation of RTD coefficient data. Conversely, the cause of the event described in LER 2020-001-00 was an error in the approved implementing procedure that affected the accuracy of a calculated streaming constant.