



L-2013-072
10 CFR § 50.73

MAR 01 2013

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: 2013-001-00
Procedure Noncompliance Causes Incorrect Instrument Setting and a Condition
Prohibited by Technical Specifications

The attached Licensee Event Report 05000250/2013-001-00 is submitted in accordance with
10 CFR 50.73(a)(2)(i)(B) and 10 CFR 50.73(a)(2)(vii).

If there are any questions, please call Mr. Robert Tomonto at 305-246-7327.

Very truly yours,

Michael Kiley
Vice President
Turkey Point Nuclear Plant

Attachment

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

IE22
NR2

NRC FORM 366 (10-2010)			U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB: NO. 3150-0104			EXPIRES: 10/31/2013														
LICENSEE EVENT REPORT (LER)												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 FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resourse@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.											
1. FACILITY NAME Turkey Point Unit 3						2. DOCKET NUMBER 05000250			3. PAGE 1 of 5														
4. TITLE Procedure Noncompliance Causes Incorrect Instrument Setting and Condition Prohibited by Technical Specifications																							
5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED														
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME			DOCKET NUMBER											
1	3	2013	2013 - 001 - 00			3	1	2013	FACILITY NAME			DOCKET NUMBER											
9. OPERATING MODE Mode 1			11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)																				
10. POWER LEVEL 99.6 %			<table style="width:100%; border: none;"> <tr> <td style="width:25%; vertical-align: top;"> <input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2201(d) <input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 20.2203(a)(2)(vi) </td> <td style="width:25%; vertical-align: top;"> <input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.36(c)(1)(i)(A) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.46(a)(3)(ii)0 <input type="checkbox"/> 50.73(a)(2)(i)(A) <input checked="" type="checkbox"/> 50.73(a)(2)(i)(B) </td> <td style="width:25%; vertical-align: top;"> <input type="checkbox"/> 50.73(a)(2)(i)(C) <input type="checkbox"/> 50.73(a)(2)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(ii)(B) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> 50.73(a)(2)(v)(D) </td> <td style="width:25%; vertical-align: top;"> <input checked="" type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 50.73(a)(2)(ix)(A) <input type="checkbox"/> 50.73(a)(2)(x) <input type="checkbox"/> 73.71(a)(4) <input type="checkbox"/> 73.71(a)(5) <input type="checkbox"/> OTHER <div style="font-size: x-small;">Specify in Abstract below or in NRC Form 366A</div> </td> </tr> </table>									<input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2201(d) <input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.36(c)(1)(i)(A) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.46(a)(3)(ii)0 <input type="checkbox"/> 50.73(a)(2)(i)(A) <input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(i)(C) <input type="checkbox"/> 50.73(a)(2)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(ii)(B) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> 50.73(a)(2)(v)(D)	<input checked="" type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 50.73(a)(2)(ix)(A) <input type="checkbox"/> 50.73(a)(2)(x) <input type="checkbox"/> 73.71(a)(4) <input type="checkbox"/> 73.71(a)(5) <input type="checkbox"/> OTHER <div style="font-size: x-small;">Specify in Abstract below or in NRC Form 366A</div>								
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12. LICENSEE CONTACT FOR THIS LER																							
NAME Paul F. Czaya									TELEPHONE NUMBER (Include Area Code) 305-246-7150														
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT																							
CAUSE	SYSTEM	COMPONENT	MANU- FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU- FACTURER	REPORTABLE TO EPIX														
14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)								<input checked="" type="checkbox"/> NO															
15. EXPECTED SUBMISSION DATE								MONTH	DAY	YEAR													
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) On January 3, 2013, it was discovered that an incorrect meter was used to test two Pressurizer High Water Level reactor trip instrument channels. Technicians used an incorrect multimeter for a Channel I operational test and subsequently adjusted the setpoint prior to returning it to service. Technicians performed the same test on Channel II and when they saw that it was also displaying similar values, they stopped the surveillance and Channel II was placed in trip to comply with a TS Action. The result was that Channel I was inoperable and not tripped for approximately 30.5 hours. TS requirements were exceeded for Channel I being inoperable and not tripped greater than 6 hours (Action duration) and Channel II taken out of service during the same period, which placed the unit in TS 3.0.3. However, that condition was not recognized and the required actions were not completed. The direct cause of the event is procedure noncompliance. Corrective actions include procedure revisions for use of multimeters on the EAGLE 21 system, revision of the Maintenance and Test Equipment (M&TE) procedure to address the use of replacement M&TE, and measures to strengthen Maintenance Department procedure use and adherence. Safety significance is considered low because Channel III remained operable and Channel II was subsequently determined to be functional, so that the safety function was not lost in the 2 out of 3 logic.																							

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NARRATIVE

DESCRIPTION OF THE EVENT

On January 2, 2013 at approximately 1913 hours, Pressurizer [AB, PZR] Level Channel [JC, CHA] I, L-3-459, was declared inoperable as Instrumentation and Control (I&C) Maintenance personnel commenced a surveillance test using a Fluke Model 8846A multimeter [MTR]. Use of this meter was contrary to the requirements of the procedure that specifically required use of a Fluke Model 8842A multimeter. Using the incorrect meter resulted in erroneous as-found readings, which drove recalibration. At approximately 2022 on January 2, 2013, Channel I was determined to be inoperable and placed in the tripped condition using the bistable trip switches [JC, HS] to comply with Technical Specification (TS) 3.3.1, Table 3.3-1, Functional Unit 9, Action 13. Channel I was calibrated using a Fluke Model 8846A multimeter and when complete Channel I was declared operable at approximately 1436 on January 3, 2013 and the bistables were restored to the non-tripped condition.

At approximately 1648 on January 3, 2013, Pressurizer Level Channel II, L-3-460, was declared inoperable to perform a surveillance test also using a Fluke Model 8846A multimeter. Channel II was found outside acceptance criteria and placed in trip at approximately 1720 on January 3, 2013. After Channel II was found out of specification, a Fluke Model 8842A multimeter was used to double-check Channel II and it was found within acceptance criteria. After initial investigation revealed that the Model 8842A multimeter was the correct instrument for this calibration and the differences in instrument characteristics resulted in incorrect readings the first time, Channel II was declared operable at approximately 0915 on January 4, 2013 and the bistable trip switches were restored to the non-tripped condition.

At approximately 2025 on January 4, 2013, Pressurizer Level Channel I was declared inoperable for calibration using a Fluke Model 8842A multimeter. Channel I was found outside acceptance criteria at approximately 2054 and placed in trip. After calibration, Channel I was declared operable at approximately 2205 on January 4, 2013 and the bistable trip switches were restored to the non-tripped condition.

At approximately 0135 on January 5, 2013, I&C Maintenance personnel completed surveillance of Pressurizer Level Channel III, L-3-461, satisfactorily without adjustment using a Fluke Model 8842A multimeter as required by the procedure. This confirmed that this channel had remained operable since the last surveillance test in October 2012.

As a result, Channel I was inoperable and not tripped for a period of approximately 30.5 hours in noncompliance with TS 3.3.1, Table 3.3-1, Functional Unit 9, Action 13, which requires an inoperable channel to be in the tripped condition within 6 hours of inoperability. In addition, during this 30.5 hour period, Channel II was tripped and so inoperable as a result of not meeting acceptance criteria for a period of approximately 16.0 hours. Turkey Point TS do not provide an action for two channels being inoperable concurrently. The previously unrecognized conditions resulted in exceeding the time limits specified in TS 3.3.1, Table 3.3-1, Action 13 and having two channels inoperable should have resulted in entry into TS 3.0.3 and that time limit was also exceeded. This report is submitted in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition which was prohibited by the plant's TS. In addition, the report is submitted in accordance with 10 CFR 50.73(a)(2)(vii) because the use of the incorrect meter resulted in a common cause concurrent inoperability of independent channels.

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CAUSES OF THE EVENT

The direct cause of the event is procedural noncompliance by I&C Maintenance personnel involved with the surveillance tests. Although a new multimeter was made available to I&C Maintenance personnel for use, the meter was put into service without an evaluation for acceptability for use in all applications. The surveillance procedures specified the use of a Fluke 8842A with no approved equivalent. Because the new Fluke 8846A multimeters were made available for use, I&C Maintenance personnel assumed that the equivalency evaluation was performed and that the procedure change was editorial in nature.

The root cause is I&C Maintenance personnel do not consistently adhere to standards for procedure use and have not internalized procedure use and adherence as a core fundamental.

Two contributing causes were identified:

1. There is no formal process for placing new or replacement Measuring and Test Equipment (M&TE) in service. The M&TE procedure does not require an equivalency evaluation that includes differences such as input impedance or other operating characteristics, the determination of affected procedures, and the need for training prior to making new M&TE available for use.
2. A knowledge gap exists in the I&C Maintenance Department regarding use of test equipment and how it can impact plant equipment (i.e., impedance affects on the EAGLE 21 system).

BACKGROUND INFORMATION

Instrument Function

The Reactor Protection System (RPS) [JC] and Engineered Safety Features Actuation System (ESFAS) [JE] have digital electronics modules called EAGLE 21. The EAGLE 21 components are a digital replacement for analog temperature and pressurizer level processing circuitry that receive inputs from Reactor Coolant System (RCS) sensors and digitally process the information. EAGLE 21 is designed to function as a qualified part of the RPS sending outputs to indicators, plant computers, annunciators, RPS, and ESFAS.

EAGLE 21 operation for Pressurizer High Water Level is through the input from the Pressurizer level transmitters LT-459, LT-460, and LT-461 [AC, PRZ, LT]. Loop power supplies [RXX] provide power to the level transmitters and route the signal to the EAGLE 21 system. All three level transmitters function in identical fashion.

The Pressurizer High Water Level Trip is provided as a backup to the Pressurizer High Pressure Trip. The coincidence of two out of the three Pressurizer Level signals trips the reactor [RCT]. This function is not relied upon as a primary trip function in the plant safety analysis. It may perform as a backup trip for any significant heat-up transient which results in a large specific volume change in the RCS.

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The TS Trip Setpoint for the Pressurizer High Water Level Trip is $\leq 92\%$ of instrument span. The Allowable Value is $\leq 92.2\%$ of instrument span.

Multimeter Characteristics

The Fluke Model 8846A multimeter operates in a default low impedance mode and will more accurately measure the parameter of interest, provided the circuit is not affected by the low input impedance. The low input impedance of the Fluke 8846A will cause improper readings when utilized on the EAGLE 21 system. While the Fluke 8846A also has a high impedance setting, it was not used due to unfamiliarity with the meter and a lack of knowledge of the need for high impedance on the EAGLE 21 system.

ANALYSIS OF SAFETY SIGNIFICANCE

After calibration with the incorrect multimeter, Pressurizer Level Channel I trip actuation would have occurred at 92.262% of instrument span exceeding the Allowable Value of $\leq 92.2\%$ of instrument span.

As discussed in the DESCRIPTION OF THE EVENT section above, both Pressurizer Level Channels II and III remained available and were proven to be operable by the performance of their respective surveillance tests. With Channel I inoperable and Channel II in the tripped condition, Channel III provided trip coincidence. Therefore, the reactor trip safety function was not lost although the function was now susceptible to a single failure.

In addition, the Pressurizer High Water Level reactor trip is not a primary safety function in the safety analysis. It is a back up for any significant heat-up transient which results in a large specific volume change in the reactor coolant system.

Based on this analysis, the safety significance of this condition is considered to be low.

CORRECTIVE ACTIONS

Corrective actions are documented in AR 1836648 and include the following:

1. An Engineering Equivalency Evaluation was performed to assess use of the Fluke Model 8846A multimeter on the EAGLE 21 system and determined acceptable only if used in the high impedance mode.
2. The event was reviewed with Maintenance personnel.
3. Other usage of the Fluke Model 8846A on Units 3 and 4 equipment was reviewed to determine if rework is required. One Unit 4 application will be reworked prior to entry into Mode 4. Unit 4 has been in an extended power uprate outage.

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4. Update EAGLE 21 procedures to include:
- Meter approved for use.
 - If no equivalent meter is approved, then note that in the M&TE section of the procedure along with why a specific meter is required such as what is required for a system per the vendor's manual.
 - Voltage
 - Frequency
 - Impedance
 - Accuracy
 - Range
5. Review and reinforce procedure AD-AA-100-1006, Procedure and Work Instruction Use And Adherence, with all Maintenance Department personnel.
6. Develop and administer a case study on procedure use and adherence. Include consistency of procedure adherence and what should be done when an unexpected system response is encountered.
7. Revise the M&TE procedure to define what M&TE requires an engineering equivalency evaluation and include specific guidance for processing new M&TE.

FAILED COMPONENTS IDENTIFIED: None

PREVIOUS SIMILAR EVENTS: None