



L-2016-162
10 CFR § 50.73
AUG 15 2016

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: 2016-001-01
Date of Event: February 8, 2016
Loose Breaker Control Power Fuse Caused the 3B Emergency Containment Cooler to
be Inoperable Longer Than Allowed by Technical Specifications, Supplement

The attached Licensee Event Report 05000250/2016-001-01 is submitted pursuant to 10 CFR
50.73(a)(2)(i)(B) and 10 CFR 50.73(a)(2)(v)(D).

If there are any questions, please call Mr. Mitch Guth at 305-246-6698.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Summers', written over a horizontal line.

Thomas Summers
Vice President
Turkey Point Nuclear Plant

Attachment

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

JE22
NPR



LICENSEE EVENT REPORT (LER)
(See Page 2 for required number of digits/characters for each block)

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 and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@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 4
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4. TITLE
Loose Breaker Control Power Fuse Caused 3B Emergency Containment Cooler to be Inoperable Longer Than Allowed

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
2	8	2016	2016	- 001	- 01	8	15	2016		05000

9. OPERATING MODE 11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

1	<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)

10. POWER LEVEL 100% RTP

<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)
<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

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT Paul F. Czaya	TELEPHONE NUMBER (Include Area Code) 305-246-7150
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX


14. SUPPLEMENTAL REPORT EXPECTED YES (If yes, complete 15. EXPECTED SUBMISSION DATE) NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On February 8, 2016 at approximately 0147 hours, during a surveillance test, control room indications identified that 3B Emergency Containment Cooler (ECC) fan tripped. Troubleshooting found the control power fuse for the fan's power supply breaker was loose in its fuse holder. Investigation revealed that the fuse holder clips had been widened during work activities associated with the installation of the new breaker during the prior Unit 3 refueling and maintenance outage. The most probable cause of the loose fuse was improper insertion. The installation procedure did not validate fuse holder gap, fuse alignment, and fuse tightness after its last removal and insertion prior to placing the new breaker in service. Inadequate contact during the surveillance test caused the fan trip. The 3B ECC would not have reliably met its safety function mission time and so was determined to be inoperable for approximately 72 days exceeding the 72 hour Technical Specification allowed outage time. In addition, on several occasions during the 72-day period one of the other two ECCs was inoperable concurrently for testing. Corrective actions include: 1) The fuse holder clips were adjusted to provide a tight fit. 2) A review determined additional similar breakers will be inspected for fuse tightness. 3) Future installation and preventive maintenance of similar breakers will check for fuse tightness and correct if necessary. Safety significance is considered low based on a risk assessment showing Incremental Conditional Core Damage Probability and Incremental Conditional Large Early Release Probability are below the NRC acceptance criteria for minimal risk impact.

NRC FORM 366A (11-2015)	U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB: NO. 3150-0104	EXPIRES: 10/31/2018
 LICENSEE EVENT REPORT (LER) CONTINUATION SHEET		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 and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@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	2. DOCKET NUMBER	3. LER NUMBER		
Turkey Point Unit 3	05000-250	YEAR	SEQUENTIAL NUMBER	REV NO.
		2016	- 001	- 01

NARRATIVE

DESCRIPTION OF THE EVENT

On February 8, 2016 at approximately 0147 hours, during a surveillance test, control room indications identified that 3B Emergency Containment Cooler (ECC) fan [BK, FAN] tripped. Troubleshooting found that the control power fuse [BK, FAN, FU] for the fan’s power supply breaker [BK, FAN, BKR] was loose in its fuse holder. The fuse would easily spin inside its fuse holder.

Investigation determined that the fuse holder clips had been widened during work activities associated with the installation of the new breaker for the 3B ECC during the prior Unit 3 refueling and maintenance outage.

The loose control power fuse caused the 3B ECC to be inoperable for approximately 72 days exceeding the Technical Specification (TS) 3.6.2.2, Action ‘a’ allowed outage time of 72 hours and the resultant shutdown requirements for one inoperable ECC. Because the inoperability of the 3B ECC was not recognized at the time, the actions required by TS 3.6.2.2, Action ‘a’ were not taken, which is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by the TS. In addition, on several occasions one of the other two ECCs was concurrently inoperable for testing during the 72-day period the 3B ECC was inoperable. The longest period two ECCs were concurrently inoperable was approximately 2.23 hours, which did not exceed the shutdown time requirements of TS 3.6.2.2, Action ‘b’. However, during the periods when two ECCs were inoperable, the ECC system would not have been able to perform its specified safety function to mitigate the consequences of an accident. This condition is reportable in accordance with 10 CFR 50.73(a)(2)(v)(D).

CAUSE OF THE EVENT

The most probable cause of the loose fuse was improper insertion. In addition, the installation procedure did not validate fuse holder gap, fuse alignment, and fuse tightness after its last removal and insertion prior to placing the new breaker in service. Inadequate contact during the surveillance test caused the fan trip.

NRC FORM 366A
(11-2015)

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NARRATIVE

ANALYSIS OF THE EVENT

The ECC System consists of three fan cooling units; each consisting of a motor, fan, bare tube cooling coil, instrumentation and controls. The ECCs, in conjunction with the Containment Spray System (CSS), prevent containment pressure and temperature from exceeding the values calculated in the containment loss of coolant accident (LOCA) analysis and the main steam line break (MSLB) accident analysis, and maintain containment atmosphere below the structural design pressure and temperature.

Two ECCs (3A and 3C) are automatically initiated via the sequencer on a safety injection (SI) signal. The 3B ECC will start on the failure of either 3A or 3C ECC to start and run. The removal of heat and moisture from the containment is accomplished by recirculating the containment air/vapor mixture to the outside of the ECC coils by the fan. Heat is then absorbed by the Component Cooling Water (CCW) System which is circulating through the ECC coils. The condensed moisture is drained to the containment sump.

The CCW inlet valves to each ECC unit remain open during both normal operation and after SI signal initiation. The outlet valves are closed during normal operation, but are opened upon start of the associated ECC unit. The outlet valve is controlled by a solenoid valve powered from the same 3B ECC breaker. The control circuit for the solenoid valve is designed such that a loss of power will result in the closure of the outlet valve. Therefore, if the control power fuse for the 3B ECC breaker were to blow or come loose, then it would result in the failure of the fan to start or remain running and failure of the outlet valve to open or remain open. As a result, the 3B ECC would not have reliably met its safety function mission time.

ANALYSIS OF SAFETY SIGNIFICANCE

The safety significance of having the 3B ECC inoperable for approximately 72 days, as well as having another ECC concurrently inoperable for short periods during that time, was determined to be low. A risk assessment shows Incremental Conditional Core Damage Probability and Incremental Conditional Large Early Release Probability are below the NRC acceptance criteria for minimal risk impact.

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NARRATIVE

CORRECTIVE ACTIONS

Corrective actions are in accordance with Condition Report 2108256 and include:

1. The fuse holder clips on the 3B ECC breaker were adjusted to provide a tight fit.
2. A review of the operating and test history of recently replaced similar breakers on Units 3 and 4 was performed. As a result, certain breakers were identified and scheduled for a contingency inspection of fuse tightness.
3. Future installations and preventative maintenance of similar breakers will check fuse tightness and correct if necessary.

ADDITIONAL INFORMATION

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

FAILED COMPONENTS IDENTIFIED: None

PREVIOUS SIMILAR EVENTS: None