



**FPL**

DEC 21 2006

10 CFR § 50.73  
L-2006-265

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

Re: Turkey Point Units 3 and 4  
Docket No. 50-250 and 50-251  
Reportable Event: 2006-008-00  
Date of Event: November 1, 2006  
Incorrect Diesel Fuel Oil Testing Program Surveillance Implementation

The attached Licensee Event Report 50-250/2006-008-00 is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(i)(B) to provide notification of the subject event.

If there are any questions, please call Mr. James Connolly at (305) 246-6632.

Very truly yours,

Terry O. Jones  
Vice President  
Turkey Point Nuclear Plant

SM

Attachment

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

TE22

**LICENSEE EVENT REPORT (LER)**

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

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@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.

<b>1. FACILITY NAME</b> Turkey Point Units 3 and 4	<b>2. DOCKET NUMBER</b> 05000250	<b>3. PAGE</b> 1 OF 4
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**4. TITLE**  
Incorrect Emergency Diesel Fuel Oil Testing Program Surveillance Implementation

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
11	1	2006	2006	- 008 -	00	12	21	2006	Turkey Point Unit 4	0500251
									FACILITY NAME	DOCKET NUMBER

<b>9. OPERATING MODE</b>  1	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§:</b> (Check all that apply)											
	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)								
<b>10. POWER LEVEL</b>  100	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)								
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)								
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)								
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)								
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)								
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)								
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER								
	<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)(v)(D)	Specify in Abstract below or in NRC Form 366A								

**12. LICENSEE CONTACT FOR THIS LER**

NAME Stavroula Mihalakea – Licensing Engineer	TELEPHONE NUMBER (Include Area Code) 305-246-6454
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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
D	DE			N					

<b>14. SUPPLEMENTAL REPORT EXPECTED</b> <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	<b>15. EXPECTED SUBMISSION DATE</b> MONTH: _____ DAY: _____ YEAR: _____
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**ABSTRACT** (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On November 1, 2006, during a review of the Diesel Fuel Oil Testing procedures, it was discovered that procedure 0-NCAP-015.4, Fuel Oil Clear and Bright Determination, did not measure proper color. Technical Specification (TS) surveillance requirement 4.8.1.1.2.e. requires the new diesel fuel oil to be tested and verified in accordance with the Diesel Fuel Oil Testing Program. The Diesel Fuel Oil Testing program in TS 6.8.4.e requires that prior to adding new fuel to the storage tanks the sample has been tested in accordance with the American Society for Testing and Materials (ASTM) D4176-82 and verified to have a clear and bright appearance with proper color. This standard is valid for petroleum products with an ASTM color of 5 or less. Contrary to the TS and the ASTM standard, proper color was not verified during the performance of the clear and bright test. The cause of the event was failure to recognize and implement the specific test requirements for proper color. Other contributing factors are lack of technical rigor and lack of sufficient details in the procedures. The procedures have been revised to include the ASTM standard specific testing requirements for proper color and Chemistry Technicians have been trained to the ASTM standards. This condition is reported in accordance with 10 CFR 50.73(a)(2)(i)(B) for a condition prohibited by the TS. The health and safety of the public were not affected by this event.

**LICENSEE EVENT REPORT (LER)**  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Turkey Point Units 3 and 4	05000250	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	Page 2 of 4
		2006	- 008	- 00	

**TEXT** (If more space is required, use additional copies of NRC Form 366A) (17)

**DESCRIPTION OF THE EVENT**

At the time of discovery, Turkey Point Unit 3 was operating in Mode 1 at 100% power and Turkey Point Unit 4 was in Mode 5, at the start of a refueling outage. On November 1, 2006, during a review of the Diesel Fuel Oil Testing procedures, it was discovered that Chemistry procedure 0-NCAP-015.4, Fuel Oil Clear and Bright Determination, did not meet the TS surveillance requirement 4.8.1.1.2.e. This surveillance applies to both Turkey Point Units 3 and 4 and states "Verifying fuel oil properties of new fuel oil are tested in accordance with and maintained within the limits of, the Diesel Fuel Oil Testing Program."

The Diesel Fuel Oil Testing Program is described in the Administrative TS Section 6.8.4.e. and the TS Bases. One of the program's acceptance criteria is to determine the new fuel's clear and bright appearance with proper color when tested in accordance with ASTM-D4176-82, "Standard Test Method for Free water and Particulate Contamination in Distillate Fuels." This Standard defines the testing methodology and it provides the test procedure to perform a field test ensuring that the presence of free standing water and solid particulate contamination are not missed prior to adding the fuel to the storage tanks. With regards to proper color, the ASTM-D4176-82 requires to check the color against an ASTM color scale, provided in ASTM D 1500-82, "Standard Test for ASTM Color of Petroleum Products (ASTM Color Scale)" that measures the tint or color density for un-dyed refined diesel fuel oil against a scale of 0 (very clear) to 8 (very dark).

At Turkey Point, Chemistry Technicians use procedure 0-NCAP-015.4, to determine if the new fuel oil met the acceptance criteria for clear and bright with proper color determination. The procedure contained guidance for rejecting the new fuel shipments when a blue-green or red coloration was evident. Turkey Point has never accepted dyed diesel fuel oil shipments ensuring that the fuel had a natural color and there was no dye present that could potentially prevent the detection of water or particulate contamination. Chemistry personnel believed the color to be a physical color vice a depth of color test as described in the ASTM standard and were unaware that the acceptance criteria in the procedure did not adhere to the ASTM color scale requirements for determining proper color, i.e., ASTM color of 5 or less. As a result, contrary to the Turkey Point TS and the ASTM standard requirements, proper color was not verified during the performance of the test.

**REPORTABILITY**

Failure to verify for proper color per TS surveillance requirements was determined to be reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) for a condition prohibited by the plant's TS.

**ANALYSIS OF THE EVENT**

The Diesel Fuel Oil Testing Program is described in TS section 6.0 and the TS Bases. The Surveillance requirement's periodicity, ASTM standards and acceptance criteria are listed in the Bases for the TS as well as the plant procedures used to test the Emergency Diesel Generator (EDG) fuel oil on initial receipt. The EDG fuel oil must be clean and free of water and particulate to ensure proper operation of the EDGs during accident conditions.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Turkey Point Units 3 and 4	05000250	2006	- 008	- 00	Page 3 of 4

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Turkey Point Chemistry performs testing of the new diesel fuel oil to ensure that the fuel is of the proper quality prior to unloading the shipment into the EDG fuel oil storage tanks. Failure to meet the American Petroleum Institute (API) gravity, kinematic viscosity, flash point or clarity limits is cause for rejecting the new fuel oil prior to addition to the Diesel Fuel Oil Storage Tanks.

The clear and bright test is one of the four analyses performed as required by TS prior to adding new fuel oil to the storage tanks. The test is a pass/fail test based on a visual examination and subjective evaluation by the observer. The test performance consists of obtaining a sample of fuel oil in a clean glass jar and observing the visual sediment or water drops below the vortex formed by swirling. The test was being conducted immediately at the point of sampling and at ambient temperature conditions, and the observer followed procedures to record the absence or presence of water or sediment and to check if a blue green or red coloration was evident. The Turkey Point TS Bases did not have sufficient details to reference the standard ASTM D 1500-82. The diesel fuel oil testing procedure did not require the use of a colorimeter as required by the ASTM D 1500-82.

As part of the extent of condition, Chemistry verified that all the Diesel Fuel Oil Testing Program procedures were in compliance with Technical Specifications and ASTM standards requirements.

**EVENT SIGNIFICANCE**

Although, the clear and bright test is based on a subjective analysis, the other three analyses for specific gravity, kinematic viscosity, and flash point, are quantitative and reflect an adequate and immediate profile of diesel fuel oil quality. Supplemental testing is performed by sending a sample of the new fuel oil for laboratory analysis to validate the site analyses and verify that the fuel added to the storage tanks is of acceptable quality. The laboratory analysis is performed within 30 days following fuel loading to validate the results of the field tests and to complete the analyses of the other fuel oil properties specified in Table 1 of ASTM-975-81 and as referenced in TS Bases. Laboratory results include the water and sediment value which yields more meaningful information regarding the fuel oil quality compared to the clear and bright visual test, verifying that a high quality grade of diesel fuel oil has consistently been used by FPL for Turkey Point Units 3 and 4. Chemistry reviewed and verified from past Laboratory results that the water and sediment results have always been satisfactory for the stored fuel oil and fuel oil deliveries.

Failure to implement correctly the test for proper color had no impact on the quality of diesel fuel oil available in the storage tanks. Based on the diesel fuel oil programmatic controls and redundant testing in place to ensure high quality fuel is used for the EDGs, there is minimal safety significance in failure to verify proper color of the new diesel fuel oil. Therefore, it is concluded that the health and safety of the public were not affected by this event.

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TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Turkey Point Units 3 and 4	05000250	2006	008	00	Page 4 of 4

**TEXT** (If more space is required, use additional copies of NRC Form 366A) (17)

**CAUSE OF THE EVENT**

The event investigation concluded that this condition existed since the development of the diesel fuel oil testing procedures. The TS Bases did not include specific details of the ASTM color scale standard to ensure compliance and the plant personnel did not have a clear understanding of the ASTM color scale requirements. Procedure reviews, self assessments and industry operating experience were missed opportunities to identify the incorrect implementation of the ASTM testing requirements sooner.

The cause of the event is due to human performance, failure to recognize and implement the specific test requirements for proper color. Some of the contributing factors are lack of technical rigor and lack of sufficient details in the procedures.

**CORRECTIVE ACTIONS**

- The required equipment has been purchased and the clear and bright procedure has been revised to test for proper color in accordance with ASTM D1500-82.
- Chemistry reviewed and verified from past Laboratory results that the water and sediment results have always been satisfactory for the stored fuel oil and fuel oil deliveries.
- The TS Bases have been revised to reference ASTM D1500-82 as the standard which will be used to verify that the new fuel oil will be tested for proper color.
- Chemistry Technicians have been briefed and trained on the revised procedures for proper color determination.
- The Chemistry testing procedures used to perform TS diesel fuel oil analyses have been reviewed and verified that they comply with the appropriate ASTM standards as required by the TS surveillance and the Diesel Oil Fuel Testing Program.

**ADDITIONAL INFORMATION**

The Condition Report for this event is 2006-31637.

SIMILAR EVENTS: NONE

FAILED COMPONENTS IDENTIFIED: NONE