

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Wolf Creek Generating Station	DOCKET NUMBER (2) 0 5 0 0 0 4 8 2 1	PAGE (3) 1 OF 0 5
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TITLE (4) Inattention To Detail Leads To Failure To Perform Cloud Point Analysis Of Fuel Oil Causing Technical Specification Violation

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)
03	08	89	89	006	00	04	05	89			0 5 0 0 0

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more of the following) (11)																				
POWER LEVEL (10) 11010	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.36(e)(1)	<input type="checkbox"/> 50.36(e)(2)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 50.73(a)(2)(v)	<input 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)	<input type="checkbox"/> 73.71(b)	<input type="checkbox"/> 73.71(e)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)

LICENSEE CONTACT FOR THIS LER (12)									
NAME Merlin G. Williams - Manager Plant Support							TELEPHONE NUMBER 3 1 6 3 6 4 - 8 8 3 1		

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)										
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)							EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO											

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On March 8, 1989, Quality Assurance (QA) personnel performing a QA Chemistry audit discovered that the Chemistry procedure for the performance of Emergency Diesel Generator (D/G) new fuel oil sampling did not meet Technical Specification (T/S) Surveillance Requirement 4.8.1.1.2.d.2 for the performance of cloud point analysis. Subsequent review determined that although the procedure for D/G new fuel oil sampling did not meet the T/S surveillance requirements, the requirements had been met through off-site laboratory analysis until April 14, 1986, when the purchase order for the off-site laboratory analyses was revised. Therefore, T/S Surveillance Requirement 4.8.1.1.2.d.2 has not been met since April 14, 1986.

The root cause of this event has been attributed to inattention to detail by Chemistry supervisory personnel who failed to include the requirement to analyze cloud point in the Chemistry surveillance procedure, STS CH-015. On March 9, 1989, Chemistry personnel performed analysis ASTM D2500-1981, as required by T/S 4.8.1.1.2.d.2 for D/G 'A' and D/G 'B' fuel oil. The cloud point was determined to be less than -7 degrees Celsius for each storage tank. To prevent recurrence of this event, the purchase order for off-site laboratory analyses and STS CH-015 were revised to include cloud point analysis.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

INTRODUCTION

On March 8, 1989, Quality Assurance (QA) personnel performing a QA Chemistry audit discovered that the Chemistry procedure for the performance of Emergency Diesel Generator (D/G) [EK-DB] new fuel oil sampling did not meet Technical Specification (T/S) Surveillance Requirement 4.8.1.1.2.d.2 for the performance of cloud point analysis. Subsequent review determined that although the procedure for D/G new fuel oil sampling did not meet the T/S surveillance requirements, the requirements had been met through off-site laboratory analysis until April 14, 1986. Therefore, T/S Surveillance Requirement 4.8.1.1.2.d.2 has not been met since April 14, 1986. This event is being reported pursuant to 10CFR50.73(a)(2)(i)(B) as a violation of the plant's T/S.

DESCRIPTION OF EVENTS

Technical Specification Surveillance Requirement 4.8.1.1.2.d.2 requires that each D/G shall be demonstrated operable by sampling new fuel oil in accordance with ASTM D4057 prior to addition to storage tanks and by verifying within 30 days of obtaining a sample that the properties specified in Table 1 of ASTM D975-1981 are met when tested in accordance with ASTM D1552-1979 or ASTM D2622-1982. Table 1 of ASTM D975-1981 specifies cloud point as one of the properties to be analyzed.

On March 8, 1989, during a QA Chemistry audit, QA personnel discovered that surveillance procedure STS CH-015, Revision 1, "Emergency Diesel New Fuel", did not require analysis of cloud point for new fuel oil samples. A review of the previous Chemistry procedures and revisions for D/G new fuel oil sampling revealed that cloud point had never been included in the procedures as one of the properties to be analyzed.

A review of the previous performances of the D/G new fuel oil surveillances showed that the cloud point analysis had been performed by off-site laboratory analysis until April 14, 1986. The purchase order for the off-site laboratory analyses was worded such that it required the performance of analyses on the D/G new fuel oil samples in accordance with ASTM D975-1977 requirements. On April 14, 1986, a new purchase order for the off-site laboratory analyses was issued. This purchase order was written by Procurement Engineering and worded such that it required the performance of analyses on the D/G new fuel oil samples in accordance with the applicable portions of ASTM D975-1981. The new purchase order then listed the analyses to be performed by the off-site laboratory in accordance with ASTM D975-1981. This list included all the analyses from ASTM D975-1981 except for cloud point. As a result of this omission, the cloud point analysis was not performed on D/G new fuel by an off-site laboratory after April 14, 1986.

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ROOT CAUSE AND CORRECTIVE ACTIONS

The root cause of this T/S violation has been attributed to inattention to detail by Chemistry supervisory personnel who failed to include the requirement to analyze cloud point in the Chemistry surveillance procedure. In addition, Chemistry supervisory personnel failed to identify the omission of the cloud point analysis from the revised purchase order and the off-site laboratory analyses performed after April 14, 1986. In addition to these cognitive personnel errors, a personnel error occurred when the purchase order was revised on April 14, 1986. A detailed recreation of the circumstances surrounding the revision of the purchase order could not be made. From a review of the incorrect purchase order and the Chemistry surveillance procedure, and discussions with the personnel involved in the revision of the purchase order, it appears that the purchase order was written using the surveillance report form provided in the surveillance procedure. The form lists the analyses to be performed on D/G new fuel oil and the limits to be used for each of the analyses. The form lists the analyses to be performed by on-site analysis as well as those analyses to be performed by off-site laboratory analysis. The list of analyses on the purchase order to be performed by the off-site laboratory appears to have been written using this surveillance report form as the guide. Therefore, it is believed that the omission of cloud point analysis from the purchase order would not have occurred had the surveillance report in the Chemistry surveillance procedure included cloud point analysis.

On March 9, 1989, Chemistry personnel performed the analysis ASTM D2500-1981, "Test for Cloud Point of Petroleum Oils", as required in ASTM D975-1981, for D/G 'A' and D/G 'B' fuel oil to ensure operability of the D/G with the fuel oil being used. The cloud point was determined to be less than -7 degrees Celsius for each storage tank [DC-TK]. These results are well below the maximum cloud point of 15 degrees Celsius, as determined through discussions with the fuel oil supplier. As a confirmatory measure, samples were also sent to the off-site laboratory for cloud point analysis. The laboratory's results received March 20, 1989, indicate the cloud point to be -14 degrees Celsius for each storage tank.

To prevent recurrence of this event, the purchase order for the off-site laboratory analyses was revised on March 13, 1989, to include cloud point analysis. In addition, a procedure revision to STS CH-015 was issued on March 14, 1989, to add cloud point to the surveillance report. Also, a procedure revision to ADM 04-029, "Control of Chemical Supplies", has been issued to add a Chemistry supervisory review to check for changes in purchase order specifications upon renewal of Chemistry blanket purchase orders. As part of an in-depth review of the entire T/S surveillance requirements being conducted, a detailed review of Chemistry surveillance procedures is being performed to ensure all T/S surveillance requirements are included in the procedures.

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

ADDITIONAL INFORMATION

The purchase order that was used to obtain off-site laboratory analyses of D/G new fuel oil samples until April 14, 1986, required the performance of analyses in accordance with ASTM D975-1977 requirements. Technical Specification Surveillance Requirement 4.8.1.1.2.d.2 requires the performance of the analyses in accordance with ASTM D975-1981. Although the incorrect revision of this specification was referenced in the purchase order, the analyses required and the applicable acceptance criteria given in the two different revisions of the specification are the same. Therefore, although the incorrect revision was referenced in the purchase order, the requirements of T/S Surveillance Requirement 4.8.1.1.2.d.2 were being met.

From the time the cloud point analysis of D/G new fuel oil was removed from the purchase order on April 14, 1986, until the time this event was discovered, the plant has operated in Mode 6, Refueling, through Mode 1, Power Operations, up to approximately 100 percent.

The cloud point analysis of D/G new fuel oil is performed to define the temperature at which a cloud or haze of wax crystals appears in the fuel oil under prescribed test conditions which generally relates to the temperature at which wax crystals begin to precipitate from the fuel oil in use. At Wolf Creek Generating Station, the Emergency Diesel Generators and the D/G day tanks [EK-TK] are located in the D/G Building [NB] and the D/G fuel oil storage tanks are located underground well below the frost line. With the D/G fuel oil storage tanks located underground, it is unlikely that the fuel oil would be subjected to temperatures near the cloud point range. Therefore, cloud point is not a critical parameter of the fuel oil when stored underground. In addition, upon receipt of D/G new fuel oil Chemistry personnel verify a clear and bright appearance with proper color when tested in accordance with specification ASTM D4176-1982, "Standard Test Method for Free Water and Particulate Contamination in Distillate Fuels", as required by T/S Surveillance Requirement 4.8.1.1.2.d.1.d. ASTM D4176-1982 provides the methods to be used to verify a clear and bright appearance, a condition in which the fuel contains no visible water drops or particulates, and is free of haze or cloudiness. Because this analysis is performed in the field, any anomalous cloud point indications could have been identified upon receipt of the D/G new fuel oil. Therefore, failure to perform the cloud point analysis on D/G new fuel oil has not compromised operability of the Emergency Diesel Generators.

There was no damage to plant equipment or release of radioactivity as a result of this event. At no time did conditions develop that may have posed a threat to the health or safety of the public.

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A previous occurrence of this purchase order revision causing a violation of T/S Surveillance Requirement 4.8.1.1.2.d.2 is discussed in Licensee Event Report (LER) 86-033-00. LER 86-033-00 discusses an event in which the verification of fuel oil properties required by the surveillance was completed late due to various personnel errors. The personnel errors discovered during the analysis of the LER 86-033-00 events included a purchase order error which specified that the results were required within 31 days rather than 30 days. The corrective actions taken as a result of the events discussed in LER 86-033-00 were specific to those events and had no effect on the events discussed in this report.

WOLF CREEK

NUCLEAR OPERATING CORPORATION

Bart D. Withers
President and
Chief Executive Officer

April 5, 1989

WM 89-0102

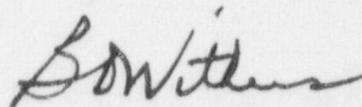
U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-137
Washington, D. C. 20555

Subject: Docket No. 50-482: Licensee Event Report 89-006-00

Gentlemen:

The attached Licensee Event Report (LER) is submitted pursuant to 10 CFR 50.73 (a) (2) (i) concerning a Technical Specification violation.

Very truly yours,



Bart D. Withers
President and
Chief Executive Officer

BDW/jad

Attachment

cc: B. L. Bartlett (NRC), w/a
E. J. Holler (NRC), w/a
R. D. Martin (NRC), w/a
D. V. Pickett (NRC), w/a

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