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 BAKER, J.W. Washington Public Power Supply System  
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 92-038-00: on 921014, technicians failed to perform main condenser offgas sample analysis per TS 3.3.7.12, due to personnel error & inadequate work mgt methods. C/A included counseling, equipment repair & further training. W/921112 ltr.

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**WASHINGTON PUBLIC POWER SUPPLY SYSTEM**

**P.O. Box 968 • 3000 George Washington Way • Richland, Washington 99352**

November 12, 1992  
G02-92-253

Docket No. 50-397

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

**SUBJECT: NUCLEAR PLANT WNP-2, OPERATING LICENSE NPF-21  
LICENSEE EVENT REPORT NO. 92-038**

Transmitted herewith is Licensee Event Report No. 92-038 for the WNP-2 Plant. This report is submitted in response to the report requirements of 10CFR50.73 and discusses the items of reportability, corrective action taken, and action taken to preclude recurrence.

Sincerely,



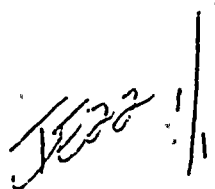
J. W. Baker  
WNP-2 Plant Manager (Mail Drop 927M)

JWB/CLF/lr  
Enclosure

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Mr. W. Ang, NRC Resident Inspector (Mail Drop 901A, 2 Copies)  
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Mr. D. L. Williams, BPA (Mail Drop 399)

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# LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

Washington Nuclear Plant - Unit 2

DOCKET NUMBER (2)

0 5 0 0 0 3 9 7

PAGE (3)

1 OF 6

TITLE (4)

**FAILURE TO PERFORM OFF GAS ANALYSIS WITHIN  
TECHNICAL SPECIFICATION TIME REQUIREMENTS**

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 NUMBERS(S)																
1	0	1	4	9	2	9	2	--	0	3	8	--	0	0	1	1	1	2	9	2	0	5	0	0	0	0

OPERATING MODE (9)

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

POWER LEVEL (10)	1	0	0	20.402(b)	20.405(C)	50.73(a)(2)(iv)	77.71(b)
				20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.73(c)
				20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
				20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
				20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
			20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
C. L. Fies, Compliance Engineer	
	AREA CODE
	5 0 9 3 7 7 - 4 1 4 7

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

☐ YES (If yes, complete EXPECTED SUBMISSION DATE) ☒ NO

ABSTRACT (16)

On October 14, 1992, chemistry technicians failed to perform a main condenser offgas sample analysis within the time required by the Technical Specifications. Technical Specification 3.3.7.12 and Table 3.3.7.12-1, Explosive Gas Monitoring Instrumentation, require an analysis of each sample within four hours of sample time. Contrary to this requirement, the sample collected at 0130 hours on October 14, 1992, was not analyzed until seven hours later at 0820.

Immediate corrective action was taken to analyze the gas sample. The sample was analyzed and the hydrogen level was found to be within limits.

The root cause was a work practice personnel error and inadequate work management methods. Contributing causes included inadequate verbal communication, written direction and training.

Further corrective action included counseling, equipment repair and modification, improvements in written instructions, and further training.

The event posed no threat to the health and safety of either the public or plant personnel.

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							9   2	0   3   8	0   0	2 OF 6	
TITLE (4) FAILURE TO PERFORM OFF GAS ANALYSIS WITHIN TECHNICAL SPECIFICATION TIME REQUIREMENTS											

### Plant Conditions

Power Level - 100%

Plant Mode - 1

On October 14, 1992, chemistry technicians failed to perform a main condenser offgas sample analysis within the time required by the Technical Specifications. Technical Specification 3.3.7.12 and Table 3.3.7.12-1, Explosive Gas Monitoring Instrumentation, require an analysis of each sample within four hours of sample time. Contrary to this requirement, the sample collected at 0130 hours on October 14, 1992, was not analyzed until seven hours later at 0820.

Grab sampling of the main condenser offgas had been initiated on October 4, 1992. On that date WNP-2 entered a Limiting Condition for Operation (LCO) for explosive gas monitoring instrumentation when the Off Gas Analyzer 12A, OG-AY-12A, was taken out of service for maintenance. Grab samples are collected under Plant Procedure PPM 12.5.23A, Recombiner Sampling and Analysis. The samples are analyzed with a Carle Model AGC-111 Gas Chromatograph.

At 0130 hours on October 14, 1992, chemistry technicians collected the next 8 hour gas sample but found the calibration of the chromatograph would not produce acceptable results. After several tries at calibration they decided at 0430 to wait for day shift relief. They thought that Technical Specification allowed them eight hours to analyze and felt no urgency.

### Immediate Corrective Action

At 0630 hours on October 14, 1992, the day shift supervisor arrived and began an investigation of the problem with the instrument. He found that two separate signals were entered into the integrator memory causing an incorrect output. After clearing the memory, he was able to perform a successful calibration of the chromatograph. The sample was analyzed by 0820 with acceptable results.

### Further Evaluation and Corrective Action

#### A. Further Evaluation

1. This event is being reported per the requirements of 10CFR50.73(a)(2)(i)(B) as, "Any operation or condition prohibited by the plant's Technical Specifications."

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2. Further evaluation found the chemistry technicians use an informal guidance sheet to assure that all actions are performed in response to an LCO. The guidance reflects actual Technical Specification requirements with added cautions and information to enhance the technicians ability to meet those requirements. The actions stated in the guidance are:

"A. Either or both Explosive Monitor(s) Inoperable

1. Take grab sample every 4 hours.
2. Analyze each sample within 4 hours of sample time.
3. Maintain the Chemistry LCO Log as per PPM 12.13.33.
4. If recombiner temperature remains constant and the thermal power has not changed, grab sample frequency can be changed to 8 hours."

NOTE: PPM 12.13.33 quoted above refers to the Plant Procedure entitled, "Chemistry LCO Tracking" which provides a method for Tracking Limiting Conditions of Operation (LCOs) and Requirements for Operability (RFOs) requiring Chemistry Department actions or monitoring.

The technicians read step 4, which is also stated in Technical Specifications, and assumed that the analysis time was also extended to 8 hours.

3. Chemistry technicians have been trained on the operation of gas chromatograph equipment as part of their on-the-job training. Training on the use of the new Spectra-Physics integrator was completed early in 1992. However, Plant Procedure PPM 12.7.11, Carle Gas Chromatograph, was not updated to reflect the replacement of the Hewlett-Packard integrator which took place in June 1992.
4. A spare gas chromatograph is available to chemistry personnel but it has not been operational for several months. The chemistry supervisors indicated that manpower limitations have placed repair of the instrument at a low priority. Availability of this instrument may have prevented this event.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION														
FACILITY NAME (1) Washington Nuclear Plant - Unit 2		DOCKET NUMBER (2) 0   5   0   0   0   3   9   7					LER NUMBER (8) Year   Number   Rev. No. 9   2   0   3   8   0   0			PAGE (3) 4   OF   6				
TITLE (4) FAILURE TO PERFORM OFF GAS ANALYSIS WITHIN TECHNICAL SPECIFICATION TIME REQUIREMENTS														

5. A further review found there have been several LCOs due to problems with the explosive gas analyzers. Since 1984, there have been 56 Maintenance Work Requests (MWRs) written against Off Gas Analyzer 12A, OG-AY-12A and 67 MWRs against OG-AY-12B. Some of the MWRs were actions to improve performance of the analyzers but the majority were problems that resulted in LCOs. There have been several improvements to the analyzers that have reduced recent occurrences. A modification to replace the electronics in the analyzers is ready to work and should eliminate timer problems that have been a major concern. Maintenance and Plant Technical are aware of these problems and believe the timer modification will improve the reliability of the equipment.
6. A root cause of this event was a work practice personnel error. The chemistry technicians did not follow their written instructions and implement the Technical Specification required actions. As a result, the gas sample was not analyzed within the time frame allowed.

A second root cause was inadequate work management methods because of management's failure to provide resources to repair the back-up sample analyses instrument and to improve the reliability of the off gas monitors in a timely manner. Means were not provided for ensuring adequate equipment quality, reliability and operability.

The following contributing causes were identified:

- 1) Lack of verbal communication in that the Chemistry Supervisor and Shift Manager were not notified of the problem with the gas analyzer. With the urgency of a four hour LCO, it would be prudent to immediately report any condition that could potentially result in a violation of Technical Specification.
- 2) Less than adequate written direction in that the guidance provided in the Chemistry LCO Log was misinterpreted by the technicians and Plant Procedure PPM 12.7.11 was not updated to reflect the Spectra-Physics integrator.
- 3) Less than adequate training in that the technicians on shift were not able to correct the problem with the analyzer.

#### B. Further Corrective Action

1. Chemistry technicians were counseled on this event regarding the failure to complete an offgas analysis in the allowable time and on the importance of strict compliance to Technical Specifications.
2. Action will be taken to assure backup analysis equipment is available by February 1, 1993.

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		9	2				0	3	8			0	0	5	OF 6
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3. The modification to replace the electronics in the off-gas analyzers will be completed by April 15, 1993.
4. A Chemistry Department practice will be initiated to notify the supervisor and Shift Manager of any condition that could potentially result in a violation of a Technical Specification LCO. This will be completed by January 4, 1993.
5. A clarification was added to the guidance in the Chemistry Department LCO Log for the Main Condenser Offgas Explosive Gas Monitors to make certain it is clear that the analysis must be completed within four hours of sample time.
6. Plant Procedure PPM 12.7.11, Carle Gas Chromatograph, will be updated to reflect the use of the Spectra-Physics integrator. This will be completed by December 1, 1992.
7. Chemistry department management had recognized the need for continued training on the gas chromatograph as a problem and had initiated a continuing training program before this event occurred. Initial training on the gas chromatograph will be completed by January 1, 1993.

#### Safety Significance

There is no safety significance associated with this event. The offgas was analyzed seven hours after the sample was taken. The hydrogen concentration was less than one percent by volume which is within the Technical Specification limit of four percent hydrogen by volume.

#### Similar Events

A review was conducted of previous reportable events associated with the Offgas Explosive Gas monitors and associated sampling. This review found only one previous incident where, during a LCO, offgas grab samples were not collected and analyzed within the Technical Specification allowed time. This event occurred on June 28, 1988, and was reported in the Semi-Annual Effluent Report dated August 26, 1988. This event was caused by inoperable sampling instrumentation which would not allow a sample to be drawn. The instrument was repaired and the sample was taken approximately one hour past the required sample time.

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IIIS Information

Text Reference

Off-Gas Analyzer 12A  
(OG-AY-12A)

Off-Gas Analyzer 12B  
(OG-AY-12B)

IIIS Reference

<u>System</u>	<u>Component</u>
WF	AY
WF	AY