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

SUBJECT: LER 91-003-00:on 910201,inadequate air-aersol mixing under test conditions.Caused by procedure error.Surveillance Test Procedure PPM 7.4.6.5.3.5 permanently revised & surveillance for plant procedures will be reviewed.W/910301 ltr.

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 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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

Docket No. 50-397

March 1, 1991

G02-91-042

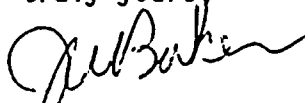
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Washington, D.C. 20555

Subject: NUCLEAR PLANT NO. 2
LICENSEE EVENT REPORT NO. 91-003

Dear Sir:

Transmitted herewith is Licensee Event Report No. 91-003 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.

Very truly yours,



J. W. Baker (M/D 927M)
WNP-2 Plant Manager

JWB:lr

Enclosure:
Licensee Event Report No. 91-003

cc: Mr. John B. Martin, NRC - Region V
Mr. C. Sorensen, NRC Resident Inspector (M/D 901A)
INPO Records Center - Atlanta, GA
Mr. D. L. Williams, BPA (M/D 399)
NRC Resident Inspector - walk over copy



LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Washington Nuclear Plant - Unit 2	DOCKET NUMBER (2) 0 5 1 0 1 0 1 3 1 9 1 7	PAGE (3) 1 OF 14
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TITLE (4) Inadequate Technical Specification Surveillance Testing Of Standby Gas Treatment Due To Procedure Error

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)
0	2	0	1	9	1	0	0	3			0 5 1 0 1 0 1 3 1 9 1 7

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) 1 1 0 1 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)						
	20.406(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)						
	20.406(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	20.406(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)							
	20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)							
	20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)							

LICENSEE CONTACT FOR THIS LER (12)

NAME C. L. Fies, Compliance Engineer	TELEPHONE NUMBER 5 1 0 1 9 3 1 7 1 7 1 - 1 2 1 0 1 3 1 9
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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)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH DAY YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On February 1, 1991 at 2100 hours a review of surveillance procedure for periodic testing of the downstream Standby Gas Treatment (SGT) High Efficiency Particulate Air (HEPA) filters indicated that methods used were not in compliance with the Technical Specifications due to inadequate air-aerosol mixing. The specific method used was not adequate to meet the requirement in Technical Specification Paragraph 4.6.5.3.b. This paragraph requires that at least once per 18 months each SGT subsystem is to be demonstrated to be operable by test. A review of plant records by Plant Engineers showed that the periodic testing to meet the requirements of this surveillance were completed. However, the testing method used did not assure sufficient air-aerosol mixing for the surveillance test of the downstream HEPA filters.

The root causes of this event were inadequate work practices, inadequate procedures, and less than adequate management programs. A Plant Engineer failed to incorporate the detailed methods required to satisfactorily conduct the surveillance test. The surveillance test procedure did not adequately meet the Technical Specification surveillance requirements. Management programs were in place to detect this omission but were not effectively implemented.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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

Abstract (continued)

Immediate corrective action was taken to test the HEPA filter in accordance with Technical Specification requirements. This test, performed on February 2, 1991 showed the SGT HEPA filters were fully capable of performing their design function. Further, a review of plant records showed the downstream HEPA filters have not been changed out since plant startup which indicates they would have been fully functional if required. Therefore, this event posed no threat to the health and safety of either the public or plant personnel since the filters would have functioned per design in the event of an accident condition.

Plant Conditions

Power Level - 100%
Plant Mode - 1

Event Description

On February 1, 1991 at 2100 hours a review of techniques for testing the Standby Gas Treatment (SGT) High Efficiency Particulate Air (HEPA) downstream filters indicated that methods used were not in compliance with the Technical Specifications due to inadequate air-aerosol mixing under test conditions. This condition was discovered by Plant Engineers during a detailed review of techniques used for testing the Charcoal Adsorber Filters during plant startup. The review was accelerated due to concerns raised by the NRC Resident Inspector.

At WNP-2 the SGT, in conjunction with other systems, provides a means of controlling and minimizing leakage from the Primary Containment to the outside atmosphere during Primary Containment accidents such as a Loss of Coolant Accident (LOCA). There are two SGT trains consisting of Moisture Separators, Electric Heaters, Pre-filters, HEPA filters, Carbon Adsorber filters, and downstream HEPA filters followed by redundant fans to draw air through the trains. The purpose of the downstream HEPA filters is to capture any carbon fines that might be carried through by the air flow. The carbon fines, under conditions of an actual demand, could be radioactive. The downstream HEPA filters also serve as a final barrier in the event of failure of the upstream HEPA filters.

The specific methods used in Surveillance Procedure, PPM 7.4.6.5.3.5, SGT System HEPA Dioctyl Phthalate (DOP) Test and Visual Inspection, were not adequate to meet the requirement in Technical Specification Paragraph 4.6.5.3.b. This paragraph requires that at least once per 18 months each SGT subsystem is to be demonstrated to be operable by "...verifying that the subsystem satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978....". A key provision of this requirement is to provide for adequate air-aerosol mixing under test conditions. A review of plant records showed that the periodic testing to meet the requirements of this surveillance were completed. However, the testing method used did not assure sufficient air-aerosol mixing for the test of the downstream HEPA filters. Specifically, the DOP injection manifold established during startup testing for the downstream HEPA filters was not used for the surveillance testing.



LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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

Immediate Corrective Action

The Surveillance Test Procedure, PPM 7.4.6.5.3.5, was modified to allow the downstream HEPA to be tested in accordance with Technical Specification requirements. The modification assured adequate mixing in the air-aerosol stream by removing the upstream HEPA filter during testing of the downstream HEPA filter and using the same injection point used for the upstream HEPA. This testing was completed at 1138 hours on February 2, 1991.

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.....".
2. Further evaluation of the testing conducted during startup in 1983 disclosed that because of the proximity of the downstream HEPA filter to the injection port, special test rigging was required for a successful test. A special injection manifold was manufactured to allow proper mixing of the air and aerosol spray. Conduct of the In-Place Test without the manifold (or similar device) would result in invalid test results.
3. Initial Start-up Testing and Acceptance Testing conducted in October of 1983 prior to plant start-up demonstrated satisfactory compliance to the stated criteria utilizing the Dioctyl Phthalate (DOP) distribution manifold. The Startup Engineer who performed the Startup Test was a contract employee who left the site shortly after the test was completed. The Technical Staff Engineer who received the system after the completion of acceptance testing left the Supply System within a few months without a turnover to the follow-on engineer.
4. After the start-up testing was completed the test was converted to a simplified procedure for periodic Surveillance Testing. The first Surveillance Test (ST) was performed in September 1984. This test was limited to testing one of the upstream HEPA filters which had been replaced. No testing of a downstream HEPA filter was accomplished which precluded the need for the DOP distribution manifold.
5. The Engineer who participated in the first ST was transferred to a different job that placed him outside the review cycle for any changes to the procedure. In the mean time the decision was made to perform the test without the help of the contractor when it came due the next time. However, the procedure was not modified to reflect this decision.
6. The ST was again run in May 1986 with the intent of testing all four HEPA filter banks. Without the guidance of the contractor and without a detailed procedure the test was run without installing the DOP injection manifold. The DOP was injected through a port between the upstream and downstream HEPA filters. This application did not meet the requirements of the ANSI standard.

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

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

- In the absence of any other guidance the procedure was permanently modified to reflect the experience of the last ST and was written without reference to using a contractor. Subsequent testing of the SGT trains was conducted without the DOP injection manifold.
- The root cause of this event was inadequate work practices, inadequate procedures, and less than adequate supervisory oversight. A Plant Engineer failed to incorporate detailed methods required to satisfactorily conduct the surveillance tests. The surveillance test procedure, PPM 7.4.6.5.3.5 did not contain the requirement for, or the direction to, test the downstream HEPA filters in accordance with Technical Specification requirements. Management programs were in place to detect this omission but were not effectively implemented.
- There were no structures, components or systems that were inoperable prior to the start of this event which contributed to the event.

B. Further Corrective Action

- The Surveillance Test Procedure, PPM 7.4.6.5.3.5 will be permanently revised to include the proper method of testing the downstream SGT HEPA filters.
- Other Plant Surveillance procedures associated with HEPA filter testing will be reviewed to assure they meet all applicable requirements as established during startup testing.

Safety Significance

There is no safety significance associated with this event. Initial Startup testing showed the downstream HEPA filters were functional. The filters have never been changed and the recent test conducted on February 2, 1991 showed the filters remained capable of performing to Technical Specification requirements.

Similar Events

There are no similar events. LER 88-009 reports an event where this surveillance (PPM 7.4.6.5.3.5) was not performed at the required time. That event is not similar since it did not involve a problem with the method of testing.

EIIS Information

Text Reference

EIIS Reference

System	Component
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Standby Gas Treatment (SGT)	BH	-
High Efficiency Particulate Air (HEPA)	FLT	Filters
Primary Containment	BT	

