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SUBJECT: LER 92-010-00:on 920303,a nonconservative setpoint was being used on Standby Gas Treatment.Caused by Analysis Deficiencies.A plan to extend WNP-2 Setpoint Methodology Program to review selected nonharsh setpoints.W/920402 ltr.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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

April 2, 1992
G02-92-078

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. 92-010-00

Transmitted herewith is Licensee Event Report No. 92-010-00 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/lc
Enclosure

cc: Mr. J. B. Martin, NRC - Region V
Mr. C. Sorensen, NRC Resident Inspector (Mail Drop 901A, 2 Copies)
INPO Records Center - Atlanta, GA
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Mr. D. L. Williams, BPA (Mail Drop 399)

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Washington Nuclear Plant - Unit 2	0 5 0 0 0 3 9 7	1 OF 5

TITLE (4)

Standby Gas Treatment System Differential Pressure Controller Setpoint 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 NUMBERS(S)
0 3	0 3	9 2	9 2	0 1 0	0 0	0 4	0 2	9 2		0 5 0 0 0
										0 5 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)				
4					
POWER LEVEL (10) 0	20.402(b)	20.405(C)	50.73(a)(2)(iv)	77.71(b)	
	20.405(a)(1)(i)	50.36(c)(1)	X 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)	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
R. E. Fuller, Compliance Engineer	AREA CODE 5 0 9 / 3 7 7 - 4 1 4 8

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)	X NO				

ABSTRACT (16)

On March 3, 1992, a reportability evaluation was completed which concluded a nonconservative setpoint was being used on the Standby Gas Treatment (SGT) System differential pressure controllers (SGT-DPIC-1A1, 1A2, 1B1, and 1B2). The reportability evaluation concluded that the condition identified by a Design Engineer on August 28, 1991 was reportable. The condition was determined to have the potential to prevent the SGT System from performing its safety function in response to a highly unlikely accident condition coincident with adverse environmental conditions and with instrument loop uncertainty at the 95% confidence level. This condition was identified as a result of the WNP-2 Setpoint Methodology Program.

The SGT System was not required when the condition was identified. The Plant was in Mode 4. No activities requiring SGT were allowed until the condition was corrected on September 10, 1991.

The root cause of this condition was **Analysis Deficiencies.**

Further corrective actions include: 1) a plan to extend the WNP-2 Setpoint Methodology Program to review selected nonharsh environment setpoints, and 2) perform an independent assessment of the Reportability Evaluation process.

The safety significance of this condition is considered insignificant. The probability of extremely unlikely design conditions occurring coincident with the instrument loop uncertainty being at the 95% confidence level is considered to have a negligible impact on the probability of exceeding 10CFR100 guidelines.

Plant Conditions

Power Level - 0%
Plant Mode - 4 (Cold Shutdown)

Event Description

On March 3, 1992, a reportability evaluation was completed which concluded a nonconservative setpoint was being used on the Standby Gas Treatment (SGT) System differential pressure controllers (SGT-DPIC-1A1, 1A2, 1B1, and 1B2). The reportability evaluation concluded that the condition identified by a Design Engineer on August 28, 1991 was reportable. The condition was determined to have the potential to prevent the SGT System from performing its safety function in response to a highly unlikely accident condition coincident with adverse environmental conditions and with instrument loop uncertainty at the 95% confidence level. This condition was identified as a result of the WNP-2 Setpoint Methodology Program.

The setpoint for the SGT System differential pressure controllers of negative 1.0-inch w.g. did not include a proper evaluation of the instrument loop uncertainties. The differential pressure controller setpoint was determined to be insufficiently negative because calculations showed that the combined uncertainties were larger than previously evaluated. The negative 1.0-inch w.g. setpoint could prevent the SGT System from drawing all areas of Secondary Containment down to negative 0.25-inch w.g. under the combination of extremely unlikely design conditions, with only one train of SGT operating and with the instrument loop uncertainty at the 95% confidence level.

Immediate Corrective Action

The SGT System was not required when the condition was identified. The Plant was in Mode 4. No activities requiring SGT were allowed until the condition was corrected on September 10, 1991.

Further Evaluation and Corrective Action

A. Further Evaluation

1. This event is considered reportable per 10 CFR 50.73(a)(2)(v)(C) as a condition alone that could have prevented the fulfillment of the safety function of structures and systems that are needed to control the release of radioactive material. The SGT System may not have performed its safety function under the combination of extremely unlikely design conditions.

Reportability of the differential pressure controller setpoint error was determined on March 3, 1992 while reviewing the regulatory compliance issue backlog. The controller setpoint error was believed to be virtually equivalent to the SGT System flow limiter setpoint error described in LER 92-08, which had been verbally reported on March 1, 1992. Hence, it was concluded that verbal notification was not necessary and that both issues would be discussed in a common LER.

When developing the LER for the setpoint errors, it was determined that the conditions were not closely linked and should be reported separately. Verbal notification regarding the controller setpoint error was made to the NRC at 1628 hours PST on March 27, 1992 per 10 CFR 50.72(b)(2)(iii)(C) as a condition alone that could have prevented the fulfillment of the safety function of structures or systems needed to control the release of the radioactive material.

2. The reportability evaluation completed on March 3, 1992 concluded the condition identified by a Design Engineer on August 28, 1991 was reportable. The setpoint was conservatively changed on September 10, 1991, prior to formal completion of the setpoint calculations for the differential pressure controllers. The calculations were formally completed on March 15, 1992, which confirmed the reportable condition.

   The delay in the reportability evaluation was due to the backlog of items requiring evaluation. This evaluation was part of the Reportability Evaluation backlog reduction effort. Recently Management attention has been focused on this issue. A goal has been established to maintain the number of items at a very low level.

3. There were no structures, components, or systems inoperable prior to the discovery of the condition which contributed to the condition.

4. As described in LER 88-23, Revision 1, dated September 30, 1988, the setpoint for the SGT System differential pressure controllers was changed from negative 0.25-inch w.g. to negative 0.6-inch w.g. to account for instrument loop uncertainties.

5. LER 89-40, Revision 1, dated June 19, 1990, indicated that significant pressure gradients as a function of elevation could occur in the Reactor Building from high wind and/or low outside temperature conditions. For extreme environmental conditions, analyses determined that the lower portion of the Reactor Building must be held at a differential pressure of negative 0.75-inch w.g. to ensure the upper portion of the Reactor Building is maintained at the required negative 0.25-inch w.g. This is due to the difference in density of the air inside and outside the Reactor Building during cold weather conditions. The differential pressure transmitters (REA-DPT-1A1 through 1A4 and REA-DPT-1B1 through 1B4) that provide the signal to the SGT System differential pressure controllers for Secondary Containment are

located at the 572-foot elevation of the Reactor Building. Analyses further determined that the transmitters must sense a negative 0.66-inch w.g. differential pressure to ensure the upper portion of the Reactor Building is at a negative 0.25-inch w.g. This is defined to be the analytical limit for the differential pressure controllers. The previous analytical limit had been negative 0.25-inch w.g.

As a result of the new analytical limit for the SGT System differential pressure controllers, the setpoint was changed from negative 0.6-inch w.g. to negative 1.0-inch w.g. on September 1, 1989. The magnitude of the instrument loop uncertainties was determined to be the same and went unchanged.

6. Evaluation of the instrument loop uncertainties for the SGT System differential pressure controllers was performed per the WNP-2 Setpoint Methodology Program. The new methodology determined the uncertainties are larger than previously evaluated.

   In conjunction with the new setpoint calculations, a new analytical limit of negative 0.71-inch w.g. was determined based on 95% of the meteorological data for wind and temperature. The previous analytical limit of negative 0.66-inch w.g. was based on the average monthly low temperatures.

   For the new analytical limit on the controllers of negative 0.71-inch w.g., the minimum allowable differential pressure controller setpoint value was calculated to be negative 1.637-inches w.g. with instrument loop uncertainties.

7. The root cause of this condition was Analysis Deficiencies. The analyses that supported the controller setpoint changes from negative 0.25-inch w.g. to negative 0.6-inch w.g. and from negative 0.6-inch w.g. to negative 1.0-inch w.g. did not properly evaluate the instrument loop uncertainties under harsh environment conditions.

B. Further Corrective Action

1. The differential pressure controllers were subsequently changed with the setpoint set at negative 1.70-inch w.g. $\pm$0.05-inch w.g. on September 10, 1991. This provides a margin of 0.013-inch w.g. between the minimum differential pressure controller setpoint of negative 1.65-inch w.g. with controller uncertainty error, and the minimum allowable differential pressure setpoint of negative 1.637-inch w.g. with instrument loop uncertainties.

2. Evaluation of setpoints for equipment in harsh environments has been completed per the WNP-2 Setpoint Methodology Program. Although beyond the scope of our original Setpoint Methodology Program, the Supply System is planning to extend its review to selected nonharsh environment setpoints. Based on current planning, this is estimated to be a 4-1/2 year effort.

3. An independent assessment will be performed on the Reportability Evaluation process. This evaluation will determine how improvements can be made in the overall process taking into account information obtained from other utilities. The independent assessment will be completed by July 1, 1992.

Safety Significance

The safety significance of this condition is considered insignificant. The probability of adverse environmental conditions occurring that would require a differential pressure at the analytical limit coincident with accident conditions that would require the SGT System to perform its safety function is small. This probability combined with the probability that 1) the instrument loop uncertainty is at the 95% confidence level and that 2) only one SGT train is available is considered to have a negligible impact on the probability of exceeding 10CFR100 guidelines.

Similar Events

The similar events are described in the text above.

EIIS Information

Text Reference	EIIS Reference System	EIIS Reference Component
Standby Gas Treatment System	BH	PDT
Standby Gas Treatment System	BH	PDIC
Reactor Building HVAC	VA	PDT