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SUBJECT: LER 89-003-00:on 890223,auxiliary bldg special ventilation actuation due to procedural inadequacy.W/890327 ltr.
W/8 ltr.

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NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Kewaunee Nuclear Power Plant	0 5 0 0 0 3 0 5	1 OF 0 4

TITLE (4)
Procedural Inadequacy Results in Auxiliary Building Special Ventilation Actuation

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	2 3	8 9	8 9	0 0 3	0 0	0 3	2 7	8 9	NA	0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 0 0	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(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
Thomas J. Webb - Plant Nuclear Engineer	AREA CODE 4 1 4 3 8 8 - 2 5 6 0

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	NA			

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

At 2213, on February 23, 1989, with the plant in refueling shutdown, the auxiliary building special ventilation (ASV) system automatically actuated on a high radiation signal from R-13 and R-14, the auxiliary building ventilation radiation monitors. The ASV system is an engineered safety feature designed to collect and filter leakage that might bypass the shield building during a design basis accident. The monitors reached the actuation setpoint for the ASV system during a planned discharge of the 1C waste gas decay tank (WGDT). In addition to actuating the ASV system, the high radiation signal from R-14 automatically isolated the WGDTs and terminated the discharge.

The event occurred because the procedures for sampling and discharging a WGDT do not include provisions to prevent reaching the ASV radiation monitor setpoints. The procedures are written to ensure that a discharge of a WGDT will not exceed Radiological Effluent Technical Specifications (RETS) limits. The ASV system's actuation setpoint is conservatively set below the RETS limit. To prevent recurrence of this event, a danger tag has been placed on the controller for the isolation valve (WG-36) between the WGDTs and the auxiliary building stack. This valve is opened to discharge a WGDT. The tag instructs the operator to open valve WG-36 slowly while watching an indicator for R-14. If R-14 approaches the setpoint for ASV actuation, the operator is directed to close the valve and call the Shift Supervisor. In the long term a permanent label, with a caution statement similar to the one on the danger tag, will be placed near the controller for valve WG-36. Furthermore, the procedures for analyzing and discharging a WGDT will be reviewed and revised as neccessary.

Since the discharge was only a small fraction of the RETS limit and the ASV system functioned as designed, there are no safety implications associated with the event.

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(9-83)

Description of Event

At 2213, on February 23, 1989, with the plant in refueling shutdown, the auxiliary building special ventilation (ASV) system automatically actuated on a high radiation signal from R-13 and R-14, the auxiliary building ventilation radiation monitors [MON]. The ASV system is an engineered safety feature (ESF) designed to collect and filter leakage that might bypass the shield building during a design basis accident. The monitors reached the actuation setpoint for the ASV system during a planned discharge of the 1C waste gas decay tank (WGDT) [TK]. In addition to actuating the ASV system, the high radiation signal from R-14 automatically isolated the 1C WGDT, terminating the discharge, and shut down the auxiliary building's normal ventilation system.

Control room annunciators [ANN] and indicators immediately alerted the operators to the ASV system's actuation. Upon indication of the ASV system's actuation, the Shift Supervisor contacted the Radiation Protection Group and requested that they quantify the discharge. The WGDT had been sampled prior to the discharge to ensure that it would not exceed the cumulative dose limits set by the Radiological Effluent Technical Specification (RETS). However, the Shift Supervisor wanted to verify that the RETS limits were not exceeded and that an emergency action level specified by the emergency plan had not been reached.

The analysis of the discharge confirmed that the discharge did not exceed the RETS limits on instantaneous and cumulative dose rates and that it did not exceed an emergency action level. Since the ASV system is an ESF function, its actuation was reported to the Nuclear Regulatory Commission at 2318 on February 23, 1989 in accordance with 10 CFR 50.72(b)(2)(ii).

The WGDTs are part of the waste gas disposal system. The waste gas disposal system collects radioactive gases produced as a result of plant operations and processes them for eventual discharge. The waste gas collected by the waste gas disposal system is stored in the four (4) WGDTs. The waste gas stored in the WGDTs is either used as a cover gas for other tanks in the plant or is held for eventual discharge to the auxiliary building vent. Prior to discharge, a WGDT is sampled to ensure compliance with the RETS cumulative dose limits. In addition to the pre-dose analysis, the discharge is monitored by the auxiliary building vent radiation monitors, R-13 and R-14. The setpoints for R-13 and R-14 are conservatively set to maintain off-site doses as low as reasonably achievable (ALARA). To discharge a WGDT, manual valves [HCV] are locally manipulated to align the tank to the discharge header. Then the waste gas release trip valve [ISV], WG-36, which isolates the tank from the auxiliary building vent, is fully opened.

After the Shift Supervisor confirmed that the discharge had not exceeded any RETS limits, the ASV system was reset and the normal auxiliary building ventilation system was re-established with both exhaust fans running. Prior to the event, only one fan was running. The 1C WGDT was then realigned to the auxiliary building vent. However this time, valve WG-36 was slowly throttled to a mid position to prevent re-actuation of the ASV system.

Cause of Event

This event occurred because the procedure for sampling a WGDT, Surveillance Procedure SP32B-116, and the procedure for discharging a WGDT, operating procedure N-GWP-32B are not written to prevent a discharge from actuating the ASV system. They are written to ensure that a discharge of a WGDT will not exceed a RETS limit. Since the ASV system's actuation setpoint is conservatively set, the system will actuate prior to reaching the RETS instantaneous limit.

Due to Kewaunee's history of good fuel performance, past discharges of WGDTs have not resulted in the actuation of the ASV system. However during the past fuel cycle, cycle 14, Kewaunee has had indications of a minor fuel pin leak in one the fuel assembly. This has resulted in increased primary activity levels and therefore higher WGDT activity concentrations.

Analysis of Event

This event resulted in the actuation of an engineered safety feature; i.e. the ASV system; therefore, it is being reported in accordance with 10 CFR 50.73(a)(2)(iv).

There are no safety implications as a result of this event. The initial discharge of the 1C WGDT resulted in instantaneous site boundary dose rates well below the RETS limits. The following table summarizes the RETS allowable dose rates, the actual dose rates, and the fraction of the allowable dose rate reached as a result of the discharge.

	RETS Instantaneous Limit (mrem/yr)	Actual Instanteous Dose Rate (mrem/yr)	Fraction of RETS Limit (Actual/RETS)
Total Body:	500	.637	0.00127
Skin:	3000	1.53	0.00051
Organ:	1500	65.8	0.04386

Furthermore as predicted, the cumulative dose that resulted from the discharge of the WGDT did not exceed the cumulative limits set by RETS. In addition, when the ASV system actuation setpoint was reached, all system functioned as designed. Both ASV system fans started, the associated dampers repositioned to their required position, and the waste gas release trip valve closed terminating the discharge.

Corrective Actions

In the short term, a danger tag was placed on the controller for valve WG-36. The tag instructs the operator to slowly open the valve while watching the indicator for R-14. If R-14 approaches the ASV system's setpoint of 90,000 cpm, the operator is instructed to close the valve and contact the Shift Supervisor. In the long term, a permanent label with a caution statement similar to the one on the danger tag will be placed near the controller for valve WG-36.

The Radiation Protection Group is evaluating the surveillance procedure (SP32B-116) they use to sample a WGDT prior to discharge. The procedure is being evaluated to determine if it can be revised to provide the operator with a valve setting that will prevent the ASV system from actuating during a discharge of a WGDT. Operating procedure N-GWP-32B will be revised to provide the operators with additional guidance to prevent reccurance of this event.

Additional Information

Similar Events: None

Equipment Failures: None

WPSC (414) 433-1598
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NRC-89-37

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WISCONSIN PUBLIC SERVICE CORPORATION
600 North Adams • P.O. Box 19002 • Green Bay, WI 54307-9002

March 27, 1989

10 CFR 50.73

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

Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Reportable Occurrence 89-003-00

The attached Licensee Event Report for reportable occurrence 89-003-00 is being submitted in accordance with the requirements of 10 CFR 50.73, "Licensee Event Report System."

Sincerely,

C. R. Steinhardt
Manager - Nuclear Power

SLB/jms

Attach.

cc - INPO Records Center
Mr. Robert Nelson
US NRC, Region III

IE23
1/1