



Nebraska Public Power District

COOPER NUCLEAR STATION
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NLS970136
July 14, 1997

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Gentlemen:

Subject: Licensee Event Report No. 97-007
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

The subject Licensee Event Report is forwarded as an enclosure to this letter.

Sincerely,

M. F. Peckham
Plant Manager

/rar
Enclosure

cc: Regional Administrator
USNRC - Region IV

Senior Project Manager
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector
USNRC

NPG Distribution

INPO Records Center

W. Turnbull
MidAmerica Energy

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LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) COOPER NUCLEAR STATION (CNS)	DOCKET NUMBER (2) 05000298	PAGE (3) 1 OF 3
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TITLE (4)
Opening of a Torus to Drywell Vacuum Breaker

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 NAME	DOCKET NUMBER
06	14	97	97	-- 007	-- 00	07	14	97	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9) N	POWER LEVEL (10) 018	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)								
		20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)					
		20.2203(a)(1)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	50.73(a)(2)(x)					
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71					
		20.2203(a)(2)(ii)	20.2203(a)(4)	X 50.73(a)(2)(iv)	OTHER	Specify in Abstract below or in NRC Form 366A				
	20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)							
		20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)						

LICENSEE CONTACT FOR THIS LER (12)

NAME Roy A. Radloff, Licensing Engineer	TELEPHONE NUMBER (Include Area Code) (402) 825-3811
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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)				EXPECTED SUBMISSION DATE (15)		
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO		MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On June 14, 1997, at 0918, while inerting the Primary Containment, one of the twelve Torus to Drywell Vacuum Breakers, PC-AOV-NRV25, opened. The Primary Containment was being inerted in accordance with the standard operating procedure. The Torus was being inerted first with the 24 inch purge inlet being used for purging and the 2 inch bypass around the outboard 24 inch vent valve, being used for venting. Due to the difference in the flow capacities of these paths, the Torus was slightly pressurized with respect to the Drywell thereby causing the vacuum breaker to come off its closed seat to relieve the pressure difference.

Once alerted to this condition, the control room operator lowered the nitrogen flow rate and the vacuum breaker fully reclosed at 0925 as the pressure difference between the Torus and the Drywell equalized.

Opening of a Torus to Drywell vacuum breaker is a possibility when the Primary Containment is being inerted, however, Procedure 2.2.60 which governs this evolution, did not contain either guidance appropriate to preclude this occurrence nor any note to alert the operator to the possibility. Thus, the cause of this event is procedural inadequacy.

Procedure 2.2.60 has been revised to provide the option of using the 24 inch vent valve for Containment inerting when using the Standby Gas Treatment (SGT) system. A note has been added to Procedure 2.2.60 to alert the operator to the possibility of a Torus to Drywell vacuum breaker opening during Containment inerting when using the SGT system. Procedure 2.2.60 will be evaluated to determine if the potential for challenging the Torus to Drywell vacuum breakers can be further reduced.

This event has minimal safety significance since the PC-AOV-NRV25 valve functioned as designed and the other Engineered Safety Features (ESF) systems remained capable of fulfilling their safety function.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL	REVISION	
COOPER NUCLEAR STATION	05000298	97	-- 007	-- 00	2 OF 3

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

PLANT STATUS

Cooper Nuclear Station (CNS) was at a power level of 18% power at the time of this event.

EVENT DESCRIPTION

At 0905 on June 14, 1997, CNS began inerting the Primary Containment in accordance with Operating Procedure 2.2.60, "Primary Containment Cooling and Nitrogen Inerting System." Reactor power had been decreased and Containment had been de-inerted to facilitate an entry into the Drywell. Technical Specifications require the inerting process to be accomplished using the Standby Gas Treatment (SGT) system unless the reactor has been shutdown for greater than 24 hours. The procedure required that a 24 inch valve be used for purging and that the 2 inch bypass around the 24 inch vent valve be used for venting and that the Torus be inerted first. Because of the difference in capacity between the 24 inch supply line and the 2 inch vent line, the Torus became pressurized with respect to the Drywell. At 0918, when this pressure difference reached the pressure setpoint of PC-AOV-NRV25, about 0.25 psid, this vacuum breaker lifted off its fully closed seat to relieve the pressure differential. One valve was sufficient to prevent any further pressurization of the Torus with respect to the Drywell and no other Torus to Drywell vacuum breakers were effected. The control room operator lowered the nitrogen flow rate into the Torus and PC-AOV-NRV25 closed at 0925 on June 14, 1997, when the pressure began to equalize between the Torus and the Drywell.

CAUSE

CNS Technical Specifications require venting of Primary Containment through the SGT system unless the reactor has been shutdown for greater than 24 hours. The Technical Specifications also require both trains of SGT to be operable if a vent path other than the 2 inch bypass line is utilized. Additionally, the Technical Specifications allow only a limited time for reactor operation with Containment de-inerted. With the flow paths used in the existing procedure guidance for venting through the SGT system, there was a distinct possibility that a Torus to Drywell vacuum breaker would open. However, there was no note in procedure 2.2.60 to alert the operator of this possibility nor guidance to preclude this occurrence. Most reactor shutdowns at CNS are for greater than 24 hours, and inerting is accomplished using the Reactor Building Ventilation System. This results in initial inerting utilizing the SGT system being an infrequently performed evolution. The procedure failed to recognize and provide guidance appropriate to preclude this valve operation during this infrequently performed evolution and the potential to pressurize the Torus with respect to the Drywell. Thus, the cause is considered a procedural inadequacy.

SAFETY SIGNIFICANCE

The Torus to Drywell vacuum breaker functioned as designed and there is minimal safety significance associated with the operation of PC-AOV-NRV25 to relieve the pressure differential between the Torus and the Drywell. The other eleven Torus to Drywell vacuum breakers remained capable of fulfilling their safety function if required. Had an accident occurred (although highly unlikely due to the short duration) which pressurized the containment, e.g., a LOCA, the increased drywell pressure would immediately close any open Torus to Drywell vacuum breaker and the accident conditions would be the same as those analyzed in the USAR, Chapter XIV.

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		YEAR	SEQUENTIAL	REVISION	
COOPER NUCLEAR STATION	05000298	97	-- 007	-- 00	3 OF 3

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

CORRECTIVE ACTIONS

Procedure 2.2.60 has been revised to provide the operator with the option to use the 24 inch vent valve, instead of the 2 inch bypass, when venting with the SGT system. This leads to a shorter time period to inert the Torus and also reduces the possibility of opening a vacuum breaker. A note has been added to the procedure to alert the operator to the possibility of a Torus to Drywell vacuum breaker opening to relieve overpressure of the Torus with respect to the Drywell during Containment inerting when using the SGT system.

Procedure 2.2.60 will be evaluated to determine if the potential for challenging the Torus to Drywell vacuum breakers can be further reduced.

PREVIOUS EVENTS

There have been no previous unplanned actuations of the Torus to Drywell vacuum breakers at CNS.

ATTACHMENT 3 LIST OF NRC COMMITMENTS

Correspondence No: NLS970136

The following table identifies those actions committed to by the District in this document. Any other actions discussed in the submittal represent intended or planned actions by the District. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Licensing Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITTED DATE OR OUTAGE
Procedure 2.2.60 will be evaluated to determine if the potential for challenging the Torus to Drywell vacuum breakers can be further reduced.	N/A