Nebraska Public Power District
Nebraska's Energy Leader

NLS2000102
November 15, 2000

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

Gentlemen:

Subject: Licensee Event Report No. 2000-010-01
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

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

Sincerely,

J. A. McDonald
Plant Manager

/dwv
Enclosure

cc: Regional Administrator
USNRC - Region IV

Senior Project Manager
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector
USNRC

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NRC FORM 366 (6-1998) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

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

APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the 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. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
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TITLE (4)

Engineered Safety Feature Actuation - Control Room Emergency Filter System

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
09	15	2000	2000	-- 010 --	01	11	15	2000		05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	1
POWER LEVEL (10)	100

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)		50.73(a)(2)(iv)	X	OTHER
	20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Sharon Mahler, Assistant Nuclear Licensing and Safety Manager	402-825-3811

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X	VI	MON	N330	NO					

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

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

On September 15, 2000, at 0446 Central Daylight Time (CDT), the plant was in Mode 1 at approximately 100% steady state power, when the control room received an annunciator for Control Building Gas Activity High and the Control Room Emergency Filter System (CREFS) automatically actuated. At 0450 CDT, the radiation alarm cleared and at 0459 CDT, the CREFS was restored to standby status.

The root cause evaluation concluded the event was not a human performance issue, was not caused by natural phenomenon or man-made radioactivity, but was most likely the result of a malfunction of the Control Building Gaseous Radiation Monitor.

Immediate corrective action was to confirm if a temperature inversion was present during the event. A followup action was completed by the Radiological Protection department which confirmed it was unlikely that the alarm and CREFS actuation occurred as a result of natural or man-made radioactivity.

Long term corrective action is to replace the ratemeter for the gaseous channel of the Control Building Radiation Monitor.

This event is being reported voluntarily based on the lack of a definitive cause. It appears the actuation was caused by a malfunction of the Control Building Radiation monitor. Other credible causes have been eliminated. Given that this CREFS actuation was most likely caused by an equipment malfunction it would be an invalid Engineered Safety Feature (ESF) actuation and not reportable.

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

PLANT STATUS

Cooper Nuclear Station (CNS) was in Mode 1, at approximately 100 percent steady state power at the time of this event.

BACKGROUND

The Control Room Emergency Filter System (CREFS) [EIIS:VI] is designed to provide a radiologically controlled environment to ensure the habitability of the control room for the safety of control room operators under all plant conditions. In the event of a Control Building Air Inlet Radiation-High signal [EIIS:RA], the instrumentation and controls for the CREFS automatically isolate the normal ventilation intake and initiate actions to pressurize the main control room, and filter incoming air to minimize the infiltration of radioactive material into the control room environment.

In the event of a Control Room Air Inlet Radiation-High signal, the normal control room inlet supply damper closes and the CREFS is automatically started in the emergency bypass mode. The air drawn in from the outside passes through a high efficiency filter and a charcoal filter in sufficient volume to maintain the control room slightly pressurized with respect to the adjacent areas.

The CREFS instrumentation consists of a single trip system with three Control Room Air Inlet Radiation-High channels. Exceeding the setpoint of any one of the three channels; particulate, iodine or gaseous, will initiate the CREFS. Analyses have been performed which show that any combination of two channels is sufficient to adequately monitor for all expected nuclides. The Control Room Air Inlet Radiation-High function is arranged in a one-out-of-three logic. The channels include electronic and electrical equipment (e.g., detectors, monitors and trip relays) that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel output relay actuates, which then outputs a CREFS initiation signal to the initiation logic.

EVENT DESCRIPTION

On September 15, 2000, at 0446 CDT (Central Daylight Time), the plant was in Mode 1 at approximately 100% power, when the control room received the annunciator for Control Building Gas Activity High [EIIS:RA], and the CREFS automatically actuated. The Control Room operator ensured proper actions occurred. The Control Room requested Radiological Protection to sample to confirm if a temperature inversion was in effect. At 0450 CDT, the annunciator cleared, and at 0459 CDT the CREFS was restored to standby status. At 0515, the duty Radiological Protection Technician informed the control room that a temperature inversion was in effect. There were no plant activities in progress at the time of the event. Further evaluation determined that a temperature inversion may not have been in effect and the cause of the CREFS actuation most likely can be attributed to an equipment failure in the ratemeter of the Control Building Gaseous Radiation Monitor.

BASIS OF REPORT

A four-hour non-emergency report (Event Report #37347) was made to the NRC on September 19, 2000 due to the cause of the actuation being a temperature inversion. This was reported as a valid actuation under 10CFR50.72(b)(2)(ii). Evaluation of the event has determined that it was most likely caused by a malfunction of the monitor and thus most likely an invalid actuation. This is a voluntary report of the event based on the lack of a definitive cause.

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

CAUSE

The root cause evaluation concluded the event was not a human performance issue and was not caused by natural phenomenon or man-made radioactivity. Analysis determined that the event was most likely a result of a hardware failure of the gaseous ratemeter. Specifically, the failure was most likely a direct result of a malfunction of the relay driver contained in the input/output card of the ratemeter.

SAFETY SIGNIFICANCE

CREFS is not important to risk and there was no effect on Core Damage Frequency or Large Early Release Frequency due to this event. CREFS operated as designed, thus, the safety of the control room operators and the habitability of the control room during this event were not challenged. Therefore, there was negligible impact to the public health and safety from this event.

This event was evaluated to determine if the event should be classified as a Safety System Functional Failure (SSFF). The results of the evaluation demonstrated that CNS retained the ability to:

A. Shutdown the reactor and maintain it in a safe shutdown condition.
B. Remove residual heat.
C. Control the release of radioactive material.
D. Mitigate the consequences of an accident.

Therefore, this event is not reportable as a SSFF in accordance with the guidance contained in Nuclear Energy Institute 99-02, Revision 0, or under the provisions of 10CFR50.73(a)(2)(v).

CORRECTIVE ACTION

Immediate corrective action was to confirm if a temperature inversion was present during the event. A followup action was completed by Radiological Protection department which confirmed it was unlikely the alarm and CREFS actuation occurred as a result of natural or man-made radioactivity.

Long term corrective action is to replace the ratemeter for the gaseous channel of the Control Building Radiation Monitor by December 7, 2000. Note, the replaced ratemeter will be sent to the vendor for diagnostic testing.

PREVIOUS EVENTS

On October 26, 1999, at approximately 0622, the particulate channel of RMV-RM-1 tripped resulting in an automatic start of CREFS due to a temperature inversion.

There were two events that were attributed to electronic spiking.

On October 15, 1996, at approximately 1048, the gaseous channel of RMV-RM-1 spiked resulting in Control Room Ventilation isolation and the start of CREFS.

On October 16, 1996, at approximately 1059, the gaseous channel of RMV-RM-1 spiked resulting in Control Room Ventilation isolation and the start of CREFS.

Correspondence Number: NLS2000102

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 NL&S Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITTED DATE OR OUTAGE
CNS is replacing the gaseous channel ratemeter on the Control Building Intake Radiation Monitor, RMV-RM-1C with a new one (ref: PIR 4-12483).	12/7/00