Northern States Power Company

Monticello Nuclear Generating Plant
2807 West County Road 75
Monticello, MN 55362

March 29, 2000

10 CFR Part 50
Section 50.73

US Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

LER 2000-006
Procedural Inadequacy Results In Loss of Isolation Signal To Secondary Containment Dampers When Standby Gas Treatment System Train Control Power Deenergized

The Licensee Event Report for this occurrence is attached. This report contains no new NRC commitments.

Contact David Musolf, Consulting Production Engineer, at (763) 295-1201 if you require further information.

Byron Day
Plant Manager
Monticello Nuclear Generating Plant

c: Regional Administrator - III NRC
NRR Project Manager, NRC
Sr Resident Inspector, NRC
Minnesota Department of Commerce

Attachment

IE22

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

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 the industry. Forward comments regarding burden estimate to the Records Management Branch(T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 205555-0001, 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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
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TITLE (4) Procedural Inadequacy Results In Loss of Isolation Signal To Secondary Containment Dampers When Standby Gas Treatment System Train Control Power Deenergized

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 05000
02	28	00	00	-- 006 --	00	03	29	00	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10)	000		20.2201(b)		20.2203(a)(2)(v)	X	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)		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)
David Musolf	763-295-1201

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

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)

During the 2000 refueling outage, as a consequence of preparing electrical isolations, it was discovered that deenergizing Standby Gas Treatment System (SBGT) Train A or Train B control power also prevents the automatic closure of several Secondary Containment (SCT) isolation dampers which are closed by a single relay. In the past, SBGT control power has been deenergized for periods of up to three days for SBGT train testing or maintenance as permitted by Limiting Condition for Operation (LCO) 3.7.B.1.a. However, LCO 3.7.C.3 only allows SCT dampers to be inoperable for eight hours. Therefore deenergizing SBGT train control power for more than 8 hours represents a condition which is prohibited by the Monticello Technical Specifications. This condition was caused by procedural inadequacies which failed to recognize that removing the control power for a SBGT train can also result in the inoperability of certain SCT isolation dampers.

Description

During the 2000 refueling outage, a modification was made to the flow controls for the stack dilution fans[1]. This modification required electrical isolations for several plant fans. During preparation of these isolations, it was realized that dampers[2] associated with fans could lose control power[3] and become inoperable when the fan is isolated. Further engineering investigation found that a similar situation existed with control power for the Standby Gas Treatment System[4] (SBGT) filter trains.

Deenergizing control power for SBGT Train A was found to result in the loss of power to the isolation relays[5] for Secondary Containment[6] (SCT) dampers[6] V-D-11, V-D-13, V-D-23, and V-D-25. Deenergizing the control power for SBGT Train B results in the loss of power to the isolation relays for dampers V-D-12, V-D-14, V-D-24, V-D-26, and V-D-40. These are redundant dampers which isolate the SBGT Room and the SCT from the normal Reactor Building[7] ventilation supply and exhaust ducts. Per design, each of these dampers requires its associated isolation relay to be energized to deenergize its associated solenoid valve to close. The design is fail-safe on loss of solenoid valve power. Other SCT isolation dampers also lose power to their associated isolation relays, however, redundant safety related interlocks with associated fan power supply circuits will automatically close them.

The power supplies for the isolation relays are divisionally separated. Isolation relays for redundant dampers are supplied with control power from different SBGT trains. Therefore, deenergizing the control power for one SBGT train affects only one of two redundant dampers in each affected duct.

One SBGT train at a time is removed from service for maintenance and testing as allowed by Technical Specification (TS) Limiting Condition for Operation (LCO) 3.7.B.1.a. This LCO permits one SBGT train to be inoperable for up to seven days. When this is done, procedures call for the control power for the affected train to be deenergized. TS LCO 3.7.C.3, however, establishes an 8-hour allowable out of service time for SCT isolation dampers. Inoperable SCT dampers must be restored to operable status within eight hours, or the affected duct isolated by use of a closed damper or blind flange, or a plant shutdown must be initiated. Therefore, deenergizing control power for one SBGT

[1] EIIS Component Code: FAN
[2] EIIS Component Code: DMP
[3] EIIS System Code: ED
[4] EIIS System Code: BH
[5] EIIS Component Code: RLY
[6] EIIS System Code: BD
[7] EIIS System Code: NG

train for more than 8 hours represents a condition which is prohibited by the Monticello Technical Specifications.

Six procedures were found to require deenergizing SBGT control power. These procedures are for circuit breaker maintenance, which is performed at three to four year intervals, and SBGT system tests, which are performed at 18 month intervals. Each test typically requires SBGT control power to be deenergized for approximately six to eight hours. A review indicates that the longest period a single SBGT train has been deenergized was for three days.

Event Analysis

Analysis of Reportability

This event was determined to be reportable under 10 CFR 50.73(a)(2)(i)(B) on 2/28/2000. Deenergizing control power for one SBGT train for more than eight hours results in a violation of TS 3.7.3.C.3 because certain SCT dampers associated with that train are made inoperable.

Although this event represents a condition prohibited by the Technical Specifications, the SCT and SBGT would be capable of performing their safety function due to redundancy in design. The event is therefore not reportable in accordance with 10 CFR 50.73(a)(2)(v).

Safety Significance

Deenergizing the control power for one SBGT train affects only one of two redundant damper in each affected duct. The remaining redundant damper will remain operable.

The amount of time that SBGT control power has been deenergized during plant operation has usually been limited to six to eight hours per occasion and at intervals of 18 months or longer.

A review of past inoperable dampers did not identify any instance where SBGT control power was isolated making both dampers in one duct inoperable.

For these reasons, we believe this condition has limited safety significance.

Cause

The cause of this event was inadequate procedures. Procedures failed to recognize that deenergizing control power for a SBGT train also resulted in the inoperability of several SCT dampers receiving isolation relay power from the same supply breaker.

Corrective Actions

Immediate corrective actions consisted of issuing a change to the Monticello Operations Manual to describe the effect on SCT damper operability of opening the control power supply breaker for a SBGT train. Information tags have been attached to the control switches for the SBGT control power supply breakers.

Holds have been placed on written procedures which control positioning of the SBGT control power supply breakers until the appropriate LCO conditions can be added.

The computerized equipment control database has been revised to include instructions for entering an 8-hour LCO for inoperable SCT dampers when the SBGT control power supply breakers are opened for work order isolations.

The potential for a similar condition exists in the primary containment isolation logic. Operations and engineering personnel have been alerted to this potential. Procedures and the computerized equipment control database will be reviewed and revised as necessary to prevent similar events involving primary containment isolations.

Administrative work instructions related to equipment isolations will be reviewed. Where necessary, additional guidance will be provided to ensure similar control power supply issues are specifically recognized and addressed in procedures and work orders.

Upcoming operations and engineering retraining sessions will advise personnel of the equipment isolation concerns addressed in this report.

Failed Component Identification

Not applicable.

Similar Events

None