

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Cooper Nuclear Station										DOCKET NUMBER (2) 0 5 0 0 0 2 9 8				PAGE (3) 1 OF 0 3	
TITLE (4) Reactor Trip															
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 1 3	0 8 4	8 4	0 0 3	0 0 0	2 2 4	8 4					0 5 0 0 0				
OPERATING MODE (9) N		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8: (Check one or more of the following) (11)													
POWER LEVEL (10) 0 1 0		20.402(b)				20.406(e)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)		73.71(b)			
		20.406(a)(1)(i)				50.36(e)(1)				<input type="checkbox"/> 50.73(a)(2)(v)		73.71(c)			
		20.406(a)(1)(ii)				50.36(e)(2)				<input type="checkbox"/> 50.73(a)(2)(vii)		OTHER (Specify in Abstract below and in Text, NRC Form 366A)			
		20.406(a)(1)(iii)				50.73(a)(2)(i)				<input type="checkbox"/> 50.73(a)(2)(viii)(A)					
		20.406(a)(1)(iv)				50.73(a)(2)(ii)				<input type="checkbox"/> 50.73(a)(2)(viii)(B)					
		20.406(a)(1)(v)				50.73(a)(2)(iii)				<input type="checkbox"/> 50.73(a)(2)(ix)					
LICENSEE CONTACT FOR THIS LER (12)															
NAME Robert Brungardt, Operations Supervisor										TELEPHONE NUMBER AREA CODE 4 0 2 8 2 5 - 3 8 1 1					
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)															
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC					
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR	
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)										<input checked="" type="checkbox"/> NO					
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)															
<p>The reactor protection system generated a high Average Power Range Monitor (APRM) high flux reactor trip as a result of a reactor feedwater flow transient during reactor startup. The transient was caused by a trip of the reactor feedwater pump while an Instrument & Control Technician was troubleshooting a loss of feed pump speed indication. The reactor feed pump was immediately restarted, however, the feedwater addition rate was then excessive. The positive reactivity added due to the rapid feedwater injection caused reactor power to increase to the trip setting. This event will be discussed with Operators and Instrument Technicians in order to improve communications such that alternate methods of operating and testing are employed to prevent recurrence of similar events. This LER will be routed to the appropriate supervisors and all the licensed operators. Additionally, during seminars with all licensed operators, the Operations Supervisor will discuss alternate methods of plant operation that could have prevented this event. Personnel errors identified were lack of specific controls on troubleshooting, failure to provide direction and effective communication, and not utilizing the available redundant equipment.</p>															

1022

8402280355 840224
PDR ADOCK 05000298
S PDR

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104
EXPIRES 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Cooper Nuclear Station	0 5 0 0 0 2 9 8	8 4	— 0 0 3	— 0 0 0	2	OF	0 3

TEXT (If more space is required, use additional NRC Form 365A's) (17)

On January 30, 1984, reactor startup was in progress. Reactor power was approximately ten percent, reactor pressure approximately 800 psig, and intentions at this point in the startup were to shift from the "STARTUP" to the "RUN" operating mode. At about 2300, reactor feed pump "A" speed indication failed downscale. Feed pump control was not affected although the reactor startup was halted pending resolution of the indication problem. Instrument & Control (I&C) personnel were informed and came to the control room to look at the indicator to assure all wiring leads were intact. They left the control room at about 2310. No discussion between the Operators and the I&C Technicians ensued at this point. Thus the mutual intentions of the I&C Technicians and the Operators were not known to each other. The operators did not proceed further with the startup. Alternate methods of reactor feed such as starting the second feed pump were not considered. At this time, only an indication problem was apparent rather than a feed pump control problem. The I&C personnel, using appropriate drawings and test equipment, continued troubleshooting at the local instrument rack outside the reactor feed turbine room. The Control Room Operators were unaware of exactly what effect this troubleshooting could have on the reactor feed pump controls.

I&C personnel removed the input wires at the speed transmitter and connected a signal generator into the speed indicating circuit in order to simulate various feed pump speeds for testing the Revolutions Per Minute (RPM) indication circuit. Immediately upon connecting the signal generator, the I&C Technician heard the feed pump trip. He immediately removed the signal generator and reconnected the input wires from the signal pickup probe. The I&C Technician then realized the signal generator had been set at such a high RPM setting that the simulated high speed signal had activated the feed pump electric trip device which has its input from the speed indication circuit. The I&C Technician had intended to jumper out the trip circuit and/or have the signal generator set low enough in order to not trip the feed pump. Thus, although the I&C Technician's knowledge of the system was adequate, his intentions were not implemented correctly. The feed pump tripped at 2331 with RPM indication pegged high.

Shortly after communicating with the I&C Technician, the Control Room Operator then reset the feed pump. The feed pump restarted and operated as would be expected in this circumstance. Due to the period with no feed flow, a reactor level demand signal existed which caused the reactor feedwater system to respond in a way to quickly restore normal reactor level. The resulting feedwater transient overshoot added enough positive reactivity to cause reactor power to increase. The operator response to the transient, reducing feedwater flow rate, was correct, however, not fast enough to prevent a reactor trip. Thus at 2333, two minutes after the reactor feed pump turbine was reset, the reactor protection system initiated an Average Power Range Monitor (APRM) high flux trip. Since the reactor mode switch was in startup, the trip occurred at the nominal 15 percent power setting as reactor power increased from ten percent during the transient.

Subsequent to the trip, the reactor plant was stabilized without further difficulty. After determination that no Technical Specification safety limits had been exceeded and that all required systems responded as required, a reactor startup was completed and the reactor plant was returned to normal operation.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0101

EXPIRES 8/31/85

FACILITY NAME (1) Cooper Nuclear Station	DOCKET NUMBER (2) 0 5 0 0 0 2 9 8 8 4	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		— 0 0 3	— 0 0	0 3	OF	0 3	

TEXT (If more space is required, use additional NRC Form 365A's) (1.7)

Some personnel errors were identified. The Operators and I&C Technicians did not communicate their intentions to each other. Overall direction on how and when the troubleshooting was to take place was not provided. Not enough thought was given to starting the second feed pump or perhaps setting plant conditions in order to utilize a condensate booster pump to feed the reactor. Troubleshooting could have been done after the affected feed pump was not required. Sufficient thought was not given to the effects of restarting the feed pump in the situation described. Throttling feed flow prior to restarting the pump could also have avoided the transient.

This event was thoroughly discussed with the personnel involved. Alternate methods of troubleshooting and plant operation which could have been employed were discussed. This LER will be routed to all licensed Operators, cognizant supervisors, and I&C Technicians. Seminars led by the Operations Supervisor will be conducted with all operating crews as well as with I&C personnel led by the I&C Foremen. The speed indicating circuit has been repaired; however, the root cause of this event was not the speed indication problem, rather it was the errors in troubleshooting that led up to this event. This occurrence presented no adverse consequences from the standpoint of public health and safety.



Nebraska Public Power District

COOPER NUCLEAR STATION
P.O. BOX 98, BROWNVILLE, NEBRASKA 68321
TELEPHONE (402) 825-3811

Docket Number 05000-298
CNSS840058

February 24, 1984

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

Dear Sir:

Cooper Nuclear Station Licensee Event Report 84-003 is forwarded as an attachment to this letter.

Sincerely,

P. V. Thomason

P. V. Thomason
Division Manager of
Nuclear Operations

PVT:lb

cc: J. T. Collins
L. G. Kunc1
J. M. Pilant
INPO Records Center

IE22
1/1