

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 2
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TITLE (4)
Technical Specification/Flow Unit Operation Conflict

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	7	1984	84	009	00	0	8	1984			0 5 0 0 0																																			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (9) N</td> <td colspan="11">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)</td> </tr> <tr> <td rowspan="5">POWER LEVEL (10) 0 9 6</td> <td>20.402(b)</td> <td>20.408(e)</td> <td>50.73(a)(2)(iv)</td> <td>73.71(b)</td> </tr> <tr> <td>20.408(a)(1)(i)</td> <td>50.36(e)(1)</td> <td>50.73(a)(2)(v)</td> <td>73.71(e)</td> </tr> <tr> <td>20.408(a)(1)(ii)</td> <td>50.36(e)(2)</td> <td><input checked="" type="checkbox"/> 50.73(a)(2)(vii)</td> <td rowspan="3">OTHER (Specify in Abstract below and in Text, NRC Form 366A)</td> </tr> <tr> <td>20.408(a)(1)(iii)</td> <td>50.73(a)(2)(i)</td> <td>50.73(a)(2)(viii)(A)</td> </tr> <tr> <td>20.408(a)(1)(iv)</td> <td>50.73(a)(2)(ii)</td> <td>50.73(a)(2)(viii)(B)</td> </tr> <tr> <td>20.408(a)(1)(v)</td> <td>50.73(a)(2)(iii)</td> <td>50.73(a)(2)(x)</td> <td></td> </tr> </table>												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 9 6	20.402(b)	20.408(e)	50.73(a)(2)(iv)	73.71(b)	20.408(a)(1)(i)	50.36(e)(1)	50.73(a)(2)(v)	73.71(e)	20.408(a)(1)(ii)	50.36(e)(2)	<input checked="" type="checkbox"/> 50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)	20.408(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	20.408(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	20.408(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	
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LICENSEE CONTACT FOR THIS LER (12)

NAME P. L. Ballinger, Reactor Engineering Supervisor	TELEPHONE NUMBER AREA CODE 4 0 2 8 2 5 - 3 8 1 1
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS
B	A	D	I M O D G	0 8 2	N				

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

The operation of the APRM flow biased scram and rod block systems is inconsistent with the description given in the CNS Technical Specifications. Technical Specifications, Section 4.1, Bases, indicates that while calibrating the APRM Flow Biasing Network, "... a zero flow signal will be sent to half of the APRM's resulting in a half scram and rod block condition". In actuality, when in the calibrate mode, each reactor recirculation flow unit sends a full flow signal to half of the APRM's and, thus, will not cause a half scram (but does produce a rod block).

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

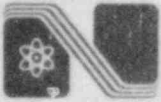
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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
					0 2	OF	0 2

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

During a recent I&C training class, it was discovered that the APRM Flow Biasing Network does not operate as described in the CNS Technical Specification bases. The bases imply that while in the calibrate mode, each flow unit sends a zero flow signal to half of the APRM's, which results in a half scram and a rod block. In actuality, each flow unit sends a full flow signal during calibration. In this condition, a control rod withdrawal block is imposed; however, a flow biased half scram could not occur. The 120% high flux scram remains operative. Since the flow unit in calibration does not cause a half scram, the APRM flow biased scram is less conservative than designed during those periods of calibration at less than full flow conditions.

Research into the history of this system revealed that the design of the reactor recirculation flow unit configuration was in a state of transition within General Electric during the construction of CNS. BWR/3's and early BWR/4's had a single flow unit per RPS channel, while later BWR's had two redundant flow units per RPS channel. The early model flow units produced a zero flow signal when switched to the calibrate mode, which resulted in a half scram and a rod block. In later designs, the output of the redundant flow units is passed through a low value gate to allow the conservative flow signal to go to the APRM's. When one of the units is switched to the calibrate mode, its output is designed to indicate full flow, such that the actual flow signal (low value) is passed. According to General Electric, CNS utilizes a later model flow unit, but retains the earlier single flow unit per RPS channel configuration. Apparently, the CNS configuration changes were not fully incorporated in the development of our Technical Specifications.

General Electric has completely analyzed this problem and has concluded that the system reliability remains unaffected. A substantial margin from fuel damage is provided by the 120% high flux scram. The CNS Safety Analysis, in fact, relies only upon the 120% high flux scram and does not take credit for the APRM flow reference scram. General Electric further concluded that there is no loss of safety function to the extent that there is a reduction in the degree of protection provided public health and safety. A change to the Technical Specifications will be submitted which will accurately describe the operation of the flow units. This LER has no generic implications.



Nebraska Public Power District

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CNSS840289

August 17, 1984

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

Dear Sir:

Cooper Nuclear Station Licensee Event Report 84-009 is forwarded as an attachment to this letter.

Sincerely,

Keith Wine

jet P. V. Thomason
Division Manager of
Nuclear Operations

PVT:lb
Attach.

cc: J. T. Collins
L. G. Kunc1
L. R. Berry
INPO Records Center

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