TOLEDO EDISON
A Centerior Energy Company

EDISON PLAZA
300 MADISON AVENUE
TOLEDO, OHIO 43652-0001

AB-94-0025
NP-33-94-002

Docket No. 50-346

License No. NPF-3

July 8, 1994

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Gentlemen:

LER 94-001
Davis-Besse Nuclear Power Station, Unit No. 1
Date of Occurrence - June 8, 1994

Enclosed please find Licensee Event Report 94-001, which is being submitted to provide 30 days written notification of the subject occurrence. This LER is being submitted in accordance with 10 CFR 50.73(a)(2)(i)(B).

Very truly yours,

John K. Wood

John K. Wood
Plant Manager
Davis-Besse Nuclear Power Station

JKW/eld

Enclosure

cc: Mr. John B. Martin
Regional Administrator
USNRC Region III

Mr. Stan Stasek
DB-1 NRC Sr. Resident Inspector

Utility Radiological Safety Board

IE

NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), 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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Davis-Besse Nuclear Power Station, Unit No. 1	05000 -346	1 OF 03

TITLE (4)
Inoperable Safety Features Actuation System Instrument Strings

EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
06	08	94	94	-- 001 --	00	07	08	94	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	1
POWER LEVEL (10)	99

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER
20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)
20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Dale L. Miller, Senior Engineer - Licensing	(419) 321-7264

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)

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

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

On June 8, 1994, with the Reactor operating at approximately 100 percent Rated Thermal Power (RTP), it was discovered that a Technical Specification (TS) Safety Features Actuation System (SFAS-JE) Channel 4 trip setpoint required in Mode 6, Refueling had been calibrated at greater than the required setpoint during past Refueling operations. Technical Specification 3.3.2.1, SFAS Instrumentation, requires a minimum of 3 high containment radiation instrument strings operable. The trip setpoint and allowable value for a containment radiation string is required to be less than 2 times background. The background radiation readings at the location of RE2007 are approximately 2 to 3 millirem per hour. The containment radiation high setpoint for RE2007 during Mode 6, Refueling operations had been calibrated at 15 mrem/hr. Channel 2 SFAS radiation instrument string was inoperable during core alterations conducted between October 1 and 7, 1984. With the channel 4 setpoint incorrectly calibrated, only 2 SFAS containment high radiation strings were operable. The cause of this occurrence is incorrect evaluation of the required setpoint implemented as a result of a facility change in 1982. This occurrence has had no impact on the health and safety of the public or plant personnel. Background radiation for RE2007 was confirmed to be approximately 2.5 mrem/hr on July 1, 1994. Prior to conducting core alterations or movement of fuel in containment, trip setpoints will be adjusted, as necessary to comply with Technical Specifications.

REQUIRED NUMBER OF DIGITS/CHARACTERS
FOR EACH BLOCK

BLOCK NUMBER	NUMBER OF DIGITS/CHARACTERS	TITLE
1	UP TO 46	FACILITY NAME
2	8 TOTAL 3 IN ADDITION TO 05000	DOCKET NUMBER
3	VARIES	PAGE NUMBER
4	UP TO 76	TITLE
5	6 TOTAL 2 PER BLOCK	EVENT DATE
6	7 TOTAL 2 FOR YEAR 3 FOR SEQUENTIAL NUMBER 2 FOR REVISION NUMBER	LER NUMBER
7	6 TOTAL 2 PER BLOCK	REPORT DATE
8	UP TO 18 – FACILITY NAME 8 TOTAL – DOCKET NUMBER 3 IN ADDITION TO 05000	OTHER FACILITIES INVOLVED
9	1	OPERATING MODE
10	3	POWER LEVEL
11	1 CHECK BOX THAT APPLIES	REQUIREMENTS OF 10 CFR
12	UP TO 50 FOR NAME 14 FOR TELEPHONE	LICENSEE CONTACT
13	CAUSE VARIES 2 FOR SYSTEM 4 FOR COMPONENT 4 FOR MANUFACTURER NPRDS VARIES	EACH COMPONENT FAILURE
14	1 CHECK BOX THAT APPLIES	SUPPLEMENTAL REPORT EXPECTED
15	6 TOTAL 2 PER BLOCK	EXPECTED SUBMISSION DATE

Description of Occurrence:

On June 8, 1994, at Davis Besse Nuclear Power Station (DBNPS) with the Reactor operating at approximately 100 percent Rated Thermal Power (RTP), it was discovered that a Technical Specification (TS) Safety Features Actuation System (SFAS-JE) setpoint required in Mode 6, Refueling had been calibrated at greater than the required setpoint during past Refueling operations. This discrepancy was discovered during the performance of a Systems Based Instrument and Control Inspection by DBNPS Independent Safety Engineering. TS 3.3.2.1, SFAS Instrumentation, requires a minimum of 3 high containment radiation instrument strings operable during core alterations or movement of irradiated fuel within containment to be able to automatically close the containment purge and exhaust isolation valves. The Trip Setpoint and Allowable Value for a containment radiation string is required to be less than 2 times background at Rated Thermal Power (RTP). The SFAS channel 4 (RE2007) radiation monitor is installed in containment during refueling operations. Background radiation readings in containment at the location of RE2007 at RTP are approximately 2 to 3 millirem per hour (mrem/hr). The containment radiation high setpoint for RE2007 during Mode 6, Refueling operations had been calibrated at 15 mrem/hr. The setpoints for the other 3 containment high radiation instrument strings meet the requirement of less than 2 times background.

Research into the operability of the other three channels of SFAS high radiation instrument strings revealed that SFAS channel 2 (RE2005) was also inoperable during core alterations conducted from October 1, 1984 until October 7, 1984. Radiation instrument RE2005 was inoperable because readings taken during the channel calibration of the SFAS channel were out of tolerance. The detector was replaced and declared operable on October 11, 1984.

Since only 2 channels of SFAS high radiation instrumentation were operable during core alterations and Technical Specification require a minimum of three channels, the Technical Specifications were inadvertently violated during this period. This LER is being submitted in accordance with 10CFR50.73(a)(2)(i)(B).

Designation of Apparent Cause:

A plant design change implemented by Facility Change Request (FCR) 82-0034 established fixed setpoint values for each individual instrument string. These values were based on an assessment of the fuel handling accident found

Designation of Apparent Cause (Continued):

in the Safety Analysis Report. The Safety Evaluation for FCR 82-0034 calculated the dose rate at RE2007 when located in containment as a result of the fuel handling accident. Conservatively, 25 percent of this value was added to the estimated background in containment when the reactor was shutdown. The final setpoint value was 15 mrem/hr. The Safety Evaluation for FCR 82-0034 incorrectly assumed the background radiation for RE2007 was approximately 200 to 300 mrem/hr at RTP and the 15 mrem/hr setpoint would not approach the requirement of less than 2 times background. Therefore, the cause of this occurrence is incorrect evaluation of the required setpoint.

Analysis of Occurrence:

This occurrence has had no impact on the health and safety of the public or plant personnel. The setpoint of 15 mrem/hr for isolation of containment is conservative with respect to 10 CFR 100 offsite dose guidelines. The fuel handling accident described in the Updated Safety Analysis Report (USAR) takes no credit for automatic containment isolation. Therefore, the consequences of a postulated fuel handling accident inside containment with the inoperable channels are bounded by the USAR analysis.

Corrective Actions:

On July 1, 1994, background radiation dose rate measurements were taken at the location of RE2007 in containment during refueling operations. The background radiation reading at approximately RTP was confirmed to be approximately 2.5 mrem/hr. Prior to conducting core alterations or movement of fuel in containment, trip setpoints will be adjusted, as necessary, to comply with Technical Specifications.

Failure Data:

Licensee Event Report 90-012 was submitted on August 13, 1990 for a non-conservative SFAS containment high radiation setpoint, at 100 percent RTP. However, there have been no LERs in the last seven years for incorrect SFAS radiation setpoints in Mode 6.

NP-33-94-002 PCAQ No. 94-0514