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W3F1-97-0066
A4.05
PR

April 21, 1997

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

Subject: Waterford 3 SES
Docket No. 50-382
License No. NPF-38
Reporting of Licensee Event Report

Gentlemen:

Attached is Licensee Event Report (LER) Number 97-010-00 for Waterford Steam Electric Station Unit 3. This LER involves exceeding the TS flow requirement for Shield Building Ventilation Train B for a period longer than allowed by TS and is submitted in accordance with 10 CFR50.36(c)(2) and 10CFR50.73 (a)(2)(i)(B).

Very truly yours,

T R Leonard

T.R. Leonard
General Manager
Plant Operations

TRL/DFL/tjs
Attachment

IE22

9704230305 970421
PDR ADOCK 05000382
S PDR

cc: E.W. Merschoff, NRC Region IV
C.P. Patel, NRC-NRR
A.L. Garibaldi
J.T. Wheelock - INPO Records Center
R.B. McGehee
N.S. Reynolds
NRC Resident Inspectors Office
Administrator - LRPD

NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND 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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
WATERFORD STEAM ELECTRIC STATION UNIT 3	05000 382	1 OF 7

TITLE (4)

FAILURE TO MEET SHIELD BUILDING VENTILATION TS FLOW CRITERIA

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
									N/A	05000
03	05	97	97	010	00	04	21	97	FACILITY NAME: N/A	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)	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)	X	50.36(c)(2)	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
TIM GAUDET, LICENSING MANAGER	(504) 739-6666

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)			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 March 5, 1997 in-place filter testing and flow testing of Shield Building Ventilation (SBV) System Train B was performed per Technical Specification (TS) 4.6.6.1.b. The results of the in-place testing were acceptable with the exception that the TS-required flow of 10,000 cfm +/- 10 percent was not met. However, the test engineer and vendor failed to recognize that the acceptance criteria had not been met and the system was considered to remain operable until March 20, 1997, when the error was finally noted. The root cause of this event is personnel error with a contributing factor of needed procedural human factor enhancements. Short term corrective actions included readjusting the SBV Train B flow rate to within the TS acceptable range and re-performing the in-place testing at the TS flow rate. Long term actions include reviewing surveillance procedures for human factors improvements and reviewing the surveillance process for tests which take longer than one day to complete. This event did not compromise the health and safety of the public. SBV Train B could have performed its safety function at all times.

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

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
WATERFORD STEAM ELECTRIC STATION UNIT 3	05000 382	97	010	00	2 OF 7

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

REPORTABLE OCCURRENCE

On March 5, 1997 in-place filter testing and flow testing of Shield Building Ventilation (SBV, EIIS Identifier BH) System Train B was performed per Technical Specification (TS) 4.6.6.1.b. The results of the in-place testing were acceptable with the exception that the TS-required flow of 10,000 cfm +/- 10 percent was not met. The failure to meet the TS flow requirement was not detected and the system remained in this condition until March 20, 1997, when the error was recognized. This time period of approximately 15 days exceeds the TS Allowed Outage Time (AOT) of 7 days for one train of SBV inoperable. Exceeding the AOT of TS 3.6.6.1 is a condition prohibited by TS and is reportable per 10CFR50.36(c)(2) and 10CFR50.73 (a)(2)(i)(B). In addition, SBV Train A was removed from service for maintenance from 0402 hours on 3/19/97 to 1620 hours on 3/20/97. During that time period, Waterford 3 is technically considered to have been in TS 3.0.3, which is also a condition prohibited by TS and is reportable as such per 10CFR50.73 (a)(2)(i)(B).

INITIAL CONDITIONS

At the time this event occurred, Waterford 3 was operating in Mode 1 at approximately 100% power. SBV Train A was out of service per TS LCO 3.6.6.1 for approximately 36 hours while SBV Train B exceeded the TS flow requirement.

EVENT DESCRIPTION

On March 5, 1997, TS Surveillance 4.6.6.1.b in-place filter testing was performed on Shield Building Ventilation System (SBV) Train B. This test was being implemented per procedure PE-005-003, "SBV System Surveillance, " which requires a flow to be established within the TS allowed band of 10,000 +/- 10 percent acfm. System flow was established and a flow of 11,911 acfm was calculated and verified by both the system engineer and the vendor representative performing the test. The flow of 11,911

acfm was erroneously determined to be within the TS acceptance criteria. The system was considered to remain operable as it was determined that the test results were satisfactory. The heater performance test portion of the surveillance, which could not be completed on March 5, was scheduled to be performed on March 31. The surveillance package remained open awaiting completion of all sections.

On March 20, 1997, at approximately 1500 hours, the Waterford 3 NRC Resident Inspector, upon review of the subject surveillance results, discovered the error and notified the system engineer. The system engineer verified the error and initiated corrective action document, Condition Report CR-97-0664, at approximately 1600 hours. This CR was brought to the control room and SBV Train B was declared inoperable at 1645 hours on March 20, 1997. SBV Train B flow was adjusted to within the TS required value per Work Authorization 01158046 and the system was declared operable at 2300 hours on March 20, 1997. Although the vendor determined that the in-place filter test results at the higher flow rate (11,911 acfm) were valid, a conservative action was taken to re-perform the in-place filter testing at the TS flow rate on March 26, 1997. The results of this testing were satisfactory.

CAUSAL FACTORS

The root cause of this event is personnel error in that self-checking was not applied by the system engineer when making required verification of flow in accordance with Section 7.3, "Airflow Capacity and HEPA/HECA DP Check," of PE-005-003. In addition, self-checking was not applied by the vendor representative involved with the testing when making required verification of flow in accordance with vendor form FT-13, "Acceptance For In-Place Testing."

Several additional causes are also considered to have contributed to this event:

Human factoring deficiencies of the test procedure, PE-005-003, may have contributed to the System Engineer not recognizing the flow acceptance criteria was not met. The

flow acceptance criteria value is listed in Section 7.3, Airflow Capacity and HEPA/HECA DP Check. However, the actual measured value is recorded in a different section: Section 8.3, Airflow Capacity and HEPA/HECA DP Check. In addition, the acceptance criteria value is stated in the procedure as 10,000 ±10% acfm rather than a more clear range such as 9,000 acfm to 11,000 acfm.

Human factoring deficiencies of vendor form FT-13, "Acceptance For In-Place Testing," did not aid the vendor in recognizing the flow acceptance criteria was not met. The actual flow measured was not recorded on the form to compare to the acceptance criteria which was recorded on the form.

The length of the surveillance PE-005-003 resulted in the required Operations review, Supervisor review, and final review by the Technical Specification Coordinator not being performed in a timely manner. The surveillance contains eight sections that need to be completed prior to closure. The surveillance is started 30 days before the vendor arrives because one section involves sending a carbon sample off site for analysis. Four of the sections are performed when the vendor arrives. The remaining two sections are completed as soon as possible depending on system outage schedules and the availability of Maintenance/Operations personnel. In this case the package was opened on February 13, 1997 and completed on April 1, 1997. The review and approval process for this surveillance allowed the mistake to go undetected for a period longer than the TS Allowed Outage Time.

The system engineer and vendor encountered a one-hour delay before starting flow measurement due to a ladder not being staged at work site. In addition, the initial flow measurement had to be re-performed due to a leaking hose on the instrument which was not properly connected. These delays caused the engineer to feel rushed and may have contributed to not recognizing the flow did not fall within the acceptance criteria.

CORRECTIVE MEASURES

Upon discovery of the error, the system engineer initiated CR 97-0664 to implement the Waterford 3 Corrective Action Program. SBV Train B was declared inoperable until flow was adjusted to within the TS value.

A review of other partially-completed surveillances which were currently open was performed. Each of these surveillances was found to have met the acceptance criteria for the completed portions.

A review of the last two SBV Train B surveillances was performed to determine if similar errors had been made in the past. No errors were found.

In-place filter testing of SBV Train B was re-performed with the TS-required flow rate. The results of this testing were satisfactory.

The Systems Engineering Superintendent performed a Human Performance Debriefing for the system engineer that was involved.

PE-005-003 will be revised to enhance the human factors aspects of this procedure.

As stated previously, Operations and Maintenance TS surveillance procedures have been reviewed in the past from a human performance aspect. Other procedures which implement TS surveillance requirements will be reviewed from a human factors aspect and necessary improvements will be made.

A review of all TS surveillance procedures which have the potential to remain open for longer than one day will be performed to determine if adequate barriers exist to ensure a timely review of test results. Procedure changes will be made where adequate barriers do not exist.

Waterford 3 has performed a review of TS and TRM surveillances to determine which ones involve vendor support. This review revealed 13 TS and 6 TRM surveillances. Waterford 3 is confident that sufficient oversight of the vendor support for these surveillances is being exercised. A review of the subject surveillance procedures will be performed to confirm this.

The vendor (NUCON) field service manager was contacted and requested to provide recommendations/actions to prevent recurrence from their end of involvement with the surveillance. NUCON has responded to this request and is committed to implementing corrective actions to prevent recurrence.

Systems Engineering will review all past data results for PE-005-003, Shield Building Ventilation System Surveillance, to determine the occurrence and reason of unacceptable flow results.

SAFETY SIGNIFICANCE

Shield Building Ventilation Train B could have performed its safety function with the higher flow rate of 11, 911 cfm. The in-place test results with this higher flow were satisfactory indicating acceptable filtering capability of the HEPA filters. There are a total of twelve HEPA filters, each rated at flow of 1000 cfm to achieve a minimum 99.97 percent efficiency. These filters were originally tested at a higher velocity of 1500 cfm for a pressure drop recording. For the charcoal beds, NUCON has evaluated and documented that a 20 percent increase in flow would have a negligible effect (0.016 percent increase) on the methyl iodide adsorption, and the test results did not indicate any channeling. In addition, the SBV filtration units contain more than twice the amount of charcoal necessary to remove expected radioactive iodine post-accident. Based on the above, Waterford 3 is confident that SBV Train B could have performed its safety function and that the health and safety of the public was not compromised.

SIMILAR EVENTS

A review of LER's for the past 5 years revealed no similar LER's submitted by Waterford 3.