

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Wolf Creek Generating Station															DOCKET NUMBER (2) 0 5 0 0 0 4 8 12					PAGE (3) 1 OF 0 16		
TITLE (4) Failure To Fully Understand Requirements Causes Technical Specification Violations - Hourly Rather Than Continuous Fire Watches Established																						
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)								
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1	2	21	8	7	-	0	5	7	0 0 0 1 1 5 8 8					0 5 0 0 0								
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																			
5			20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)							
POWER LEVEL (10)			20.405(a)(1)(i)				50.38(c)(1)				50.73(a)(2)(v)				73.71(c)							
1 10			20.405(a)(1)(ii)				50.38(c)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 365A)							
			20.405(a)(1)(iii)				X 50.73(a)(2)(i)				50.73(a)(2)(viii)(A)											
			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												
Merlin G. Williams - Superintendent of Regulatory, Quality and Administrative Services										AREA CODE 3 1 6 3 6 4 - 8 8 3 1												
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																						
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS												
X	N	F D R	X 9 9 9	N																		
X	K	P S R N K	X 9 9 9	N																		
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)			MONTH	DAY	YEAR							
YES (If yes, complete EXPECTED SUBMISSION DATE)										X NO												
ABSTRACT (Limit to 1,000 spaces (i.e., approximately fifteen single-space typewritten lines) (16)																						

On December 21, 1987, at approximately 1500 CST, it was discovered by the Fire Protection Coordinator that a continuous rather than an hourly fire watch should have been established for Room 1403, Load Center and Motor Generator Sets Room.

On January 8, 1988, at approximately 1700 CST, it was determined by the Fire Protection Coordinator through review of fire Impairment Control Permits that a continuous rather than an hourly fire watch should have been established in Area 1301/1320 of the Auxiliary Building where safe shutdown circuits and redundant equipment is located.

The root cause of these events was determined to be cognitive personnel error in determining the type of fire watch required.

Short term actions taken to prevent recurrence were retraining of the Fire Protection employee, dissemination of procedure revisions, and distribution of letters from the Fire Protection Coordinator emphasizing the distinction between Technical Specifications 3.7.10.2, 3.7.10.3 and 3.7.11 in establishing the appropriate fire watch. Long term actions are the addition of this Licensee Event Report to required reading and the improvement of continuing training for Fire Protection personnel and plant operators in the recognition of conditions that led to this event.

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TEXT (If more space is required, use additional NRC Form 305A's) (17)

INTRODUCTION

This Licensee Event Report (LER) documents two events resulting from the failure to establish the appropriate fire watch.

On December 21, 1987, at approximately 1500 CST, it was determined through review of fire Impairment Control Permits that an hourly rather than a continuous fire watch had been maintained in Room 1403 [NF], Load Center Unit Substation [USS] and Rod Control Motor Generator (MG) Sets [AA-MG] Room. The hourly fire watch had existed since the fire Impairment Control Permit was issued at approximately 1900 CST on December 18, 1987, until the continuous fire watch was posted. During the December 18-21, 1987, event the plant operated in Mode 5, Cold Shutdown, with the Reactor Coolant System (RCS)[AB] temperature at approximately 183 degrees Fahrenheit.

On January 8, 1988, at approximately 1700 CST, it was determined through review of fire Impairment Control Permits that an hourly rather than a continuous fire watch had been maintained in general area 1301/1320 of the Auxiliary Building [NF] on the 2000 foot elevation. This area contains safe shutdown circuits and redundant equipment. The hourly fire watch had existed since the fire Impairment Control Permit was issued on January 7, 1988, at approximately 1100 CST, through approximately 1630 CST, at which time the fire suppression system was restored. During the January 7, 1988, event, the plant operated in Mode 1, Power Operation, at approximately 98 percent rated thermal power.

These events are being reported pursuant to 10CFR 50.73 (a)(2)(i)(B) as violations of Technical Specifications 3.7.10.2 and 3.7.10.3.

DESCRIPTION OF EVENT

The first event was initiated during a routine area inspection by a Fire Protection employee at approximately 1900 CST on December 18, 1987. The latching mechanism on Fire Door 14031 was found to be inoperable and would not hold the door closed. Door 14031 is in the south end of Load Center Unit Substation and MG Sets Room 1403 on the 2026' elevation in the Auxiliary Building [NF] and connects to Auxiliary Building Corridor 1402. Upon recognition that the fire barrier was inoperable, the employee initiated a fire Impairment Control Permit to establish a fire watch and a Work Request to repair the latch. An hourly fire watch was established in accordance with Technical Specification 3.7.11 rather than a continuous fire watch as required in Technical Specification 3.7.10.3, which deals explicitly with halon systems.

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Routine review of fire Impairment Control Permits at approximately 1500 CST on December 21, 1987, by the Fire Protection Coordinator revealed that an hourly rather than a continuous fire watch had been established. An immediate request for continuous fire watch at Door 14031 was made and repair of the latch in accordance with the Work Request was expedited. The continuous fire watch was established and the latch repair was completed restoring the halon system to full operability on December 21, 1987.

The second event was initiated on January 7, 1988, at approximately 1030 CST, during maintenance and repair activities on the preaction sprinkler system [KP] for the 1301/1320 area on the 2000 foot elevation of the Auxiliary Building. Manual isolation of Valve KCV 44 [KP-ISV] to the preaction sprinkler system was required. Shortly thereafter, a fire Impairment Control Permit was issued by a licensed control room operator stipulating an hourly firewatch. The maintenance effort was completed and the preaction sprinkler system returned to service on January 7, 1988, at approximately 1630 CST.

The erroneous interpretation of Technical Specification Action Statement 3.7.10.2.a which requires a continuous rather than an hourly fire watch, was discovered on January 8, 1988, at approximately 1700 during review of impaired fire suppression systems status by the Fire Protection Coordinator.

ANALYSIS OF EVENT

Load Center Unit Substation and MG Sets Room 1403 is protected from fire damage by two cross zoned ionization detection systems [IC] and a Halon 1301 fire suppression system. Door 14031 is a fire barrier penetration between Corridor 1402 and Room 1403. Technical Specification 3.7.11 requires, in part, that "All fire barrier penetrations separating safety related fire areas or separating portions of redundant systems important to safe shutdown within a fire area ... "shall be operable at all times. Action Statement 3.7.11.a, which applies when the fire barrier penetration is inoperable, states: "Verify the operability of fire detectors on at least one side of the inoperable fire barrier and establish an hourly fire watch patrol."

Technical Specification 3.7.10.3 gives specific requirements for maintaining operability of the halon systems in several specific rooms. Action Statement 3.7.10.3.a is applicable to all of those rooms, but requires a continuous fire watch for only three of those rooms, including Load Center Unit Substation and MG Sets Room 1403, as identified by an asterisk. Also, Technical Specification Surveillance Requirement 4.7.10.3.b states that fire door release mechanisms shall be demonstrated operable and actuated manually at least once per 18 months.

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Safe shutdown circuits and redundant equipment in the Auxiliary Building at the 2000 foot elevation are protected from fire damage by preaction sprinkler systems and ionization detection systems [IC]. Technical Specifications 3.7.10.2 identifies the spray and/or sprinkler systems required to be operable. Action Statement 3.7.10.2.a is applicable to several areas delineated, but requires a continuous fire watch for only five of these areas, including Auxiliary Building cable trays on the 2000 foot elevation, as identified by an asterisk.

ROOT CAUSE

The December 21, 1987, event has been attributed to a cognitive personnel error by a non-licensed Fire Protection employee. The employee did not recognize that a rigorous interpretation of Technical Specification Surveillance Requirement 4.7.10.3.b requires that an inoperable latch in a closed fire door penetration to a halon protected room must be assumed to constitute an inoperable halon system. As a result, the fire Impairment Control Permit was written to establish an hourly fire watch instead of a continuous fire watch. The inoperability of a fire barrier penetration can normally be addressed in accordance with Technical Specification 3.7.11, which requires that an hourly fire watch be established. However, when the inoperability of the fire barrier penetration must be assumed to cause the halon system to be ineffective in protection of certain enumerated areas identified by an asterisk in Technical Specification 3.7.10.3, continuous fire watch is required until operability is re-established.

The January 8, 1988, event has been attributed to the cognitive personnel error by a licensed Control Room Operator. The operator misread Technical Specification 3.7.10.2 and did not recognize the distinction between the general requirements for an hourly fire watch and a continuous fire watch for certain enumerated areas identified by an asterisk in the Technical Specification 3.7.10.2. As a result, the fire Impairment Control Permit was issued to establish an hourly fire watch instead of a continuous fire watch.

ACTIONS TO PREVENT RECURRENCE

- (1) Within two hours after the December 21, 1987, discovery of the application of the incorrect Technical Specification action, the appropriate continuous fire watch was established and the latch was repaired, restoring the halon system to full operability. The January 7, 1988, erroneous interpretation was discovered after the preaction sprinkler system was repaired and returned to service.
- (2) The Fire Protection employee has been retrained regarding the December 18, 1987, Technical Specification misinterpretation.

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- (3) A letter from the Fire Protection Coordinator highlighting the more stringent requirements of Technical Specification 3.7.10.3 has been issued to those personnel who initiate fire Impairment Control Permits. A similar letter from the Fire Protection Coordinator highlighting the more stringent requirements of Technical Specification 3.7.10.2 as identified by asterisk will be issued to those personnel who initiate fire Impairment Control Permits.
- (4) This Licensee Event Report will be added to required reading for fire protection staff and plant operators to emphasize the distinctions between the requirements of Technical Specification 3.7.10.2, 3.7.10.3 and 3.7.11 and to emphasize that an inoperable latch in a closed fire door would constitute an inoperable halon system.
- (5) A procedure change to the administrative procedure, "Fire Protection: Impairment Control", has been issued, emphasizing the continuous fire watch provisions of Technical Specification 3.7.10.3 required for the Load Center Unit Substation and MG Sets Room and Engineering Safety Features Switchgear Rooms #1 and #2. A similar procedure change will be issued relative to the continuous fire watch provisions of Technical Specification 3.7.10.2.
- (6) Continuing training in the Fire Protection Group will be enhanced to emphasize the specific considerations discussed in this Licensee Event Report regarding the initiation of a fire Impairment Control Permit and establishing the appropriate type of fire watch.
- (7) As part of licensed operator requalification training, the interpretation of Technical Specification and administrative procedure requirements relative to fire protection will be reviewed with emphasis on the specific considerations of this Licensee Event Report and other fire protection events applicable to this plant as part of the industry events segment of the training.

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ADDITIONAL INFORMATION

Throughout the December 18-21, 1987, event, the Fire Detection System [IC] in Room 1403 remained operable and would have alarmed in the Control Room [NA] had a fire occurred. This would have caused the Fire Brigade to respond to Room 1403. Actuation of Fire Detection in Room 1403 would have caused the fixed total flooding Halon 1301 fire suppression system to actuate. The fire suppression capability would have been reduced. There was potential for halon migration from the room and it is possible that the design halon concentration would not have been attained upon discharge because there is no assurance that Door 14031 would remain tightly closed. The fire suppression capability would not have been defeated and possibly would have been sufficient, if required. An hourly fire watch patrol was maintained during the event which would verify that no combustible material had been brought into the room, thereby reducing the possibility of undetected fire.

Throughout the January 7, 1988, event, the Fire Detection System in the 1301/1320 area in the Auxiliary Building would have alarmed in the Control Room had a fire occurred. This would have caused the Fire Brigade to respond to the 1301/1320 area. Backup fire suppression equipment [KP] was available in the area. An hourly fire watch patrol was maintained during the event which would verify that no combustible material had been brought into the area, thereby reducing the possibility of undetected fire.

These considerations support the conclusion that these events did not significantly affect safe operation of the plant or pose a threat to the health and safety of the public.

Fire Door 14031 hardware was fabricated by Russwin. The fabricator of preaction sprinkler system piping has not been determined.

Previous similar occurrences of administrative failure to establish the appropriate fire watch were discussed in Licensee Event Reports (LERs) 85-010-01, 85-077-00, 86-010-00 and 86-039-00. The actions taken in these previous LERs to prevent recurrence of administrative failure to establish the appropriate firewatch was the addition of the LER to required reading. This corrective action may have been only an interim measure and may not have been an effective long term correction. To enhance the corrective actions into a long term solution, continuing training will be utilized. Continuing training in the Fire Protection group and revision of the plant operator regualification training will emphasize the specific considerations of this LER.

WOLF CREEK

NUCLEAR OPERATING CORPORATION

Bart D. Withers
President and
Chief Executive Officer

January 15, 1988

WM 88-0013

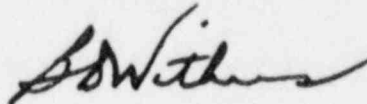
U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Subject: Docket No. 50-482: Licensee Event Report 87-057-00

Gentlemen:

The attached Licensee Event Report (LER) is submitted pursuant to 10 CFR 50.73 (a) (2) (ii) concerning a Technical Specification violation.

Very truly yours,



Bart D. Withers
President and
Chief Executive Officer

BDW/llk

Attachment

cc: B. L. Bartlett (NRC), w/a
R. D. Martin (NRC), w/a
P. W. O'Connor (NRC), 2 w/a

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