

# WOLF CREEK

NUCLEAR OPERATING CORPORATION

John A. Bailey  
Vice President  
Nuclear Operations

January 31, 1991

NO 91-0034

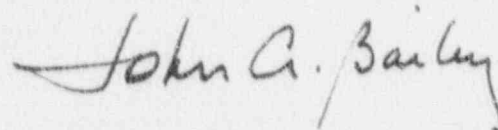
U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Mail Station P1-137  
Washington, D. C. 20555

Subject: Docket No. 50-482: Licensee Event Report 91-001-00

Gentlemen:

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

Very truly yours,

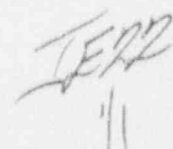


John A. Bailey  
Vice President  
Nuclear Operations

JAB/aem

Attachment

cc: A. T. Howell (NRC), w/a  
R. D. Martin (NRC), w/a  
D. V. Pickett (NRC), w/a  
M. E. Skow (NRC), w/a



LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Wolf Creek Generating Station DOCKET NUMBER (2) 050004821 PAGE (3) 1 OF 04

TITLE (4) Technical Specification Violation - Leak In Rupture Disk Allows An Unplanned Release Of Waste Gas Decay Tank Without Prior Sampling

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(S)	DOCKET NUMBER(S)	
01	01	91	91	001	00	01	31	91		050000	
										050000	

OPERATING MODE (9) 1 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)

20.402(b)	20.405(e)	50.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(i)	50.36(e)(1)	50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)	50.36(e)(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)(ii)	50.73(a)(2)(viii)(A)	
20.405(a)(1)(iv)	50.73(a)(2)(iii)	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
<u>Merlin G. Williams - Manager Plant Support</u>	<u>316 3614-1813</u>

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
X	WIE	IRLPID	C15194	N					

SUPPLEMENTAL REPORT EXPECTED (14)  YES (If yes, complete EXPECTED SUBMISSION DATE)  NO

EXPECTED SUBMISSION DATE (15) MONTH 03 DAY 29 YEAR 91

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

On January 1, 1991, a pressure drop of 6.4 psig in Waste Gas Decay Tank (WGDT) #8 was identified at 1100 CST. This release did not exceed Technical Specification limits. However, this situation constitutes a violation of Technical Specification 3.11.2.1, which requires, in part, sampling of a WGDT prior to its release. The initial investigation by Mechanical Maintenance personnel revealed that leakage was occurring on the Hydrogen Recombiner SHA01A rupture disc, which was replaced in mid-December, 1990. Attempts made to correct the problem included an increase in the torque value and replacement of the disc. These attempts failed to secure the leak.

The vendor was contacted and an increase in the torque value of the rupture disc was recommended. Activities to resolve this issue will recommence following the completion of an Engineering Disposition which focuses on the correct torque to use and the potential installation of a gasket at the metal to metal flange interface. Catalytic Hydrogen Recombiner "A" will remain out of service until resolution of the rupture disk leakage.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20565, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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

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

**INTRODUCTION**

On January 1, 1991, at 1100 CST, a leak, resulting in a pressure drop of 6.4 psig, was identified in Waste Gas Decay Tank (WGDT) #8, THA01D [WE-TK]. The leak occurred prior to sampling of the tank contents. This situation constitutes a violation of Technical Specification 3.11.2.1, which requires, in part, sampling of a WGDT prior to its release. Therefore, this event is being reported pursuant to 10 CFR 50.73(a)(2)(i) concerning a condition prohibited by the plant's Technical Specifications.

**DESCRIPTION OF EVENT**

On January 1, 1991, at 1100 CST, the Radwaste Building Operator discovered a pressure drop in WGDT #8 from 9.2 psig, which was logged in the Radwaste Control Room Log at 0800 CST, to 2.8 psig, logged at 1100 CST. During this time, WGDT #8 was in low pressure recirculation mode in preparation for a Chemistry sample. This flowpath involved using Waste Gas Compressor #1, SHAO2A [WE-CMP], to circulate the contents in WGDT #8 through Catalytic Hydrogen Recombiner "A", SHAO1A [WE-RCB], back to WGDT #8. Upon discovery, the Waste Gas System was secured and Chemistry personnel and the Control Room were notified. Although there was no increase in radiation level as indicated by the Radwaste Building Exhaust Radiation Monitors, this pressure drop represents a release without prior sampling and is a violation of Technical Specification 3.11.2.1.

After the Radwaste Building Operator discussed the event with the Shift Supervisor and Radwaste Supervisor, it was decided to pressurize WGDT #8 with nitrogen and locate the leak. Pressurization of the system commenced at 1225 CST with completion of pressurization to 9.7 psig at 1234 CST. The system was placed in recirculation at 1355 CST in preparation of a Chemistry sample. At 1412 CST, while recirculating the system, a leak was discovered on the rupture disc [WE-RPD] in Catalytic Hydrogen Recombiner "A". The system was immediately isolated, thus preventing sampling.

On January 10, 1991, while researching potential causes of disk leakage, it was discovered that the disk had been replaced in mid-December of 1990. Mechanical Maintenance personnel identified that the torque value listed in the rupture disc vendor manual was lower than the value contained in the literature that accompanied the rupture disc. The torque was then increased to the value specified by the literature and a subsequent test did not reveal a leak. Following this successful post-maintenance testing, Catalytic Hydrogen Recombiner "A" was declared operable.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  Wolf Creek Generating Station	DOCKET NUMBER (2)  0   5   0   0   0   4   8   2   9   1	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		1	0	0	1	3 OF 4

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

On January 11, 1991, at 0818 CST, Catalytic Hydrogen Recombiner "A" was placed in service recirculating WGDT #1 using Waste Gas Compressor #2, SHAO2B. At 1000 CST decreasing pressure in WGDT #1 indicated the presence of a leak. A leak was again identified on the rupture disc. The system was isolated to accommodate maintenance activities. The contents of WGDT #1 had been sampled as required by Technical Specifications prior to this evolution and no gases had been added since the sample was taken.

Maintenance activities recommenced on January 17, 1991. This investigation revealed that a small crease existed in the rupture disc, which resulted in a leak through a small perforation. After completion of the rupture disc replacement, the system was then tested on January 18, 1991, at 1653 CST. Post-maintenance testing of the rupture disc indicated that the problem had not yet been corrected. Catalytic Hydrogen Recombiner "A" was not restored to service following this unsuccessful post-maintenance testing.

**ROOT CAUSE AND CORRECTIVE ACTIONS**

At this time it was decided to obtain the vendor's recommendation for further troubleshooting activities. The vendor was unable to provide specific troubleshooting recommendations, but did recommend increasing the torque on the newly installed disc to the value present in the literature that accompanied the disc. The vendor was likewise unable to resolve the torque value discrepancy between the vendor manual and literature. Currently an engineering disposition is being developed to formally approve the use of an increased torque value. In addition, the use of a gasket at the metal to metal flange interface is being evaluated.

It is anticipated that these activities will be completed by February 8, 1991. Further corrective maintenance activities will resume shortly thereafter. Catalytic Hydrogen Recombiner "A" will remain out of service until resolution of the rupture disk leakage. A supplement to this report will be submitted by March 29, 1991 to provide additional detail concerning the root cause and corrective actions taken to resolve the rupture disk leakage.

This event is the first of its kind. This rupture disc has been replaced annually as directed by the vendor, without previous occurrences of problems of this nature.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  Wolf Creek Generating Station	DOCKET NUMBER (2)  0 5 0 0 0 4 8 2 9 1	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		9 1	0 0 1	0	0 0 4	OF 0 4

TEXT (If more space is required, use additional NRC Form 386A's) (17)

ADDITIONAL INFORMATION

The unit was operating in Mode 1, Power Operation, at approximately 100 percent reactor power during the event. No radiation monitor alarms occurred as a result of this event. Following this event, on January 2, 1991 at 0225 CST, a sample of the remaining tank contents revealed that the dose rates of the contents, which were inadvertently released, were significantly below Technical Specification 3.11.2.1 limits. This sample did account for the dilution of the contents as a result of pressurizing the tank with nitrogen. The calculations were overly conservative because the calculations accounted for a full tank volume, when in actuality, there was water present at the bottom of the tank.

The rupture disc serves as an overpressurization protection device for the Catalytic Hydrogen Recombiner. Once the pressure in the recombinder reaches the design pressure limit of the rupture disk (approximately 120 - 125 psig) the disk will rupture, allowing the gas in the recombinder to escape to the Waste Gas Decay Tank Relief Header. The rupture disc is manufactured by Continental Disc Corporation, part SD-1.

Previous similar occurrences of a Waste Gas Decay Tank release without prior sampling are discussed in Licensee Event Reports 86-047-00, 90-017-00, and 90-024-00. The corrective actions taken in response to these occurrences addressed specific circumstances and had no correlation with this event.