

WOLF CREEK

NUCLEAR OPERATING CORPORATION

Bart D. Withers
President and
Chief Executive Officer

DD
January 31, 1989

WM 89-0032

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 88-028-01

Gentlemen:

The attached Licensee Event Report (LER) is submitted pursuant to 10 CFR 20.405(a)(1)(i) concerning an exposure of an individual in excess of the applicable limits in 10 CFR 20.101. This report is a revision to LER 88-028-00 which was submitted on January 6, 1989 and corrects erroneous information in the attachment to the LER.

Very truly yours,

AWL
FER

LER #	482-PP01A
EVENT DATE	11/20/88
INFO RCVD DATE	890208
NSAC RCVD DATE	

Bart D. Withers
President and
Chief Executive Officer

BDW/jed

Attachment

cc: B. L. Bartlett (NRC), w/a
D. D. Chamberlain (NRC), w/a
R. D. Martin (NRC), w/a
D. V. Pickett (NRC), w/a

P.O. Box 411 / Burlington, NC 28606 / Phone: (716) 364-8831
An Equal Opportunity Employer M/F/H/VET

9611140011 961029
PDR FOIA
O'MEALI96-411 PDR

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Very truly yours,

AWL
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LER #	482-PP01P
EVENT DATE	1/12/89
INFO RCVD DATE	890208
KSAC RCVD DATE	

Bar D. Withers
President and
Chief Executive Officer

BDW/jad

Attachment

cc: B. L. Bartlett (NRC), w/a
D. D. Chamberlain (NRC), w/a
R. D. Martin (NRC), w/a
D. V. Pickett (NRC), w/a

P.O. Box 411 / Burlington, KS 66838 / Phone: (316) 384-8831
An Equal Opportunity Employer M/F/H/VET

9611140011 961029
PDR FOIA
O'MEAL196-411 PDR

LICENSEE EVENT REPORT (LER)															U.S. NUCLEAR REGULATORY COMMISSION APPROVED AND RE. DIS-SEM EXPIRED 07-18											
FACILITY NAME IS Wolf Creek Generating Station															SECRET NUMBER IS 0 0 0 0 0 0 4 0 1 2 1					PAGE IS 014						
WVCA IS Individual Receives Skin Dose In Excess Of Limits As A Result Of Unexpected Hot Particle Contamination																										
EVENT DATE IS					LDC NUMBER IS					REPORT DATE IS					OTHER FACILITIES INVOLVED IS											
MONTH	DAY	YEAR	YEAR	MONTH	DAY	MONTH	DAY	YEAR	FACILITY NAME					SECRET NUMBER												
1	2	0	9	8	8	0	2	8	0	1	0	1	3	1	8	9	0 0 0 0 0 0 1 1					0 0 0 0 0 0 1 1				
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § 43.61 AND IS ONE OF THE FOLLOWING (1)																										
OPERATING MODE IS					<input checked="" type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12					<input type="checkbox"/> NO ACTION <input type="checkbox"/> NO ACTION <input type="checkbox"/> NO ACTION <input type="checkbox"/> NO ACTION <input type="checkbox"/> NO ACTION <input type="checkbox"/> NO ACTION					<input type="checkbox"/> NO ACTION <input type="checkbox"/> NO ACTION <input type="checkbox"/> NO ACTION <input type="checkbox"/> NO ACTION <input type="checkbox"/> NO ACTION <input type="checkbox"/> NO ACTION					<input type="checkbox"/> NO ACTION <input type="checkbox"/> NO ACTION <input type="checkbox"/> NO ACTION <input type="checkbox"/> NO ACTION <input type="checkbox"/> NO ACTION <input type="checkbox"/> NO ACTION						
LICENSEE CONTACT FOR THIS LDC IS																										
NAME Merlin G. Williams - Manager Plant Support															TELEPHONE NUMBER 31116 316141-18181311											
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (1)																										
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC																	
SUPPLEMENTAL REPORT EXPECTED (1)										EXPECTED SUBMISSION DATE (1)					MONTH	DAY	YEAR									
YES () NO (X)																										
ABSTRACT (Limit to 1000 words, i.e., approximately fifteen single space typewritten lines) (1)																										
<p>On December 9, 1988, at 1750 CST, an individual in the Radiologically Controlled Area (RCA) was discovered to have a localized area of facial contamination. Health Physics personnel subsequently removed a 0.7993 microCurie (uCi) Cobalt-60 particle from his chin. The individual had been working in the area of the polar crane inside the containment building. Work in the area was suspended while hot particle surveys were performed. These surveys identified no unusual conditions and work was resumed. The maximum possible time the individual could have been exposed to this particle was determined to be four hours and sixteen minutes. Using this exposure time, it was conservatively determined that the individual may have received an occupational dose of 12.5 Rem to the skin of the whole body. The individual was precluded from further RCA entries during the quarter.</p> <p>Followup surveys conducted on December 10, 1988, identified an additional 0.03288 uCi Cobalt particle. Reviews were conducted of previous surveys of the area and of records of previous contamination incidents during the current refueling outage to identify any similarities to this event. The reviews concluded that this incident is an isolated case. It was also determined based on relative isotopic abundance that these two particles had originated several years ago. A review of the Hot Particle Contamination Control program did not identify any necessary programmatic changes.</p>																										

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION		U.S. NUCLEAR REGULATORY COMMISSION	
FACILITY NAME		APPROVED FOR US NRC USE	
WOLF CREEK GENERATING STATION		EXPIRES 07-92	
EVENT NUMBER	0 6 0 0 0 4 8 2 8 8	LER NUMBER	0 2 8
		REVISION	0 1
		PAGE	0 2
		OF	0 4

INTRODUCTION

On December 9, 1988, an individual in the Radiologically Controlled Area (RCA) was discovered to have a localized area of contamination on his chin. Subsequent evaluation indicated that the resultant exposure may have exceeded the 10CFR20.101 skin of the whole body quarterly dose limit. This report is being submitted in accordance with 10CFR20.405(a)(1)(i). The information required by 10CFR20.405(a)(2)(b) was provided separately as an attachment to revision 8 of this report. This attachment is being resubmitted to correct erroneous information contained in the original submittal.

DESCRIPTION OF EVENT

On December 9, 1988, at 1304 CST, several workers entered the containment building (NB) in order to perform work on snubber thrust washers on the polar crane. At the time of this event, the unit was in Mode 6, Refueling. Approximately 30 minutes later, the workers actually began the work. At 1745 CST the workers placed their tools in a temporary storage location and proceeded to exit the RCA for shift turnover.

One individual, a contractor, detected skin contamination while performing a manual frisk at the frisking station located exterior to the Containment personnel access hatch on the 2847' elevation of the Auxiliary Building (NB). In accordance with station procedures, the individual promptly notified Health Physics personnel of the situation. Health Physics personnel verified that the contamination was located on the individual's chin, then escorted the individual to the decontamination area of the RCA.

A hot particle of 60,000 net counts per minute was lifted from the individual's chin using duct tape at 1750 CST. After the removal of the hot particle, no further contamination was detected on the individual. It was subsequently verified through nasal smears and whole-body counting that the individual had no detectable internally deposited radionuclides. Gamma spectroscopy analysis was performed on the particle. The particle was determined to be composed of 0.7893 microCuries (uCi) of Cobalt-60.

Following discovery of the hot particle, work was suspended in the area of the polar crane. Health Physics personnel performed surveys for hot particles in the area in which the individual had been working and on tools and equipment that had been used. These surveys were completed at approximately 2200 CST and identified no additional hot particles or unexpected gross contamination. Following completion of these surveys, the work activities were resumed, with Health Physics personnel performing more frequent monitoring. The work has since been completed without further significant incidents.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION		US NUCLEAR REGULATORY COMMISSION APPROVED AND IS DTD-ONE SUPERVISOR	
PLANT NAME	Subject Number	LER NUMBER	
		Page	Page
Wolf Creek Generating Station	0000048288	-028	-0104004

Based on these evaluations, it has been concluded that this is an isolated incident. An internal review of the Hot Particle Contamination Control program has been performed, and the program was determined to adequately address Hot Particle concerns. Consequently, no changes to this program are considered necessary at this time.

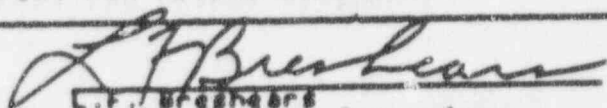
ADDITIONAL INFORMATION

Although there have been previous cases of contamination incidents involving hot particles, there have been no previous incidents at Wolf Creek Generating Station which resulted in exposures beyond 10CFR29.181 limits.

Hot particles, usually microscopic in nature, come primarily from two major sources: degraded fuel and neutron activated corrosion and wear products. A hot particle on the skin gives a high beta dose to a small area. The area used to calculate a beta dose is 1 square centimeter at a depth of 7 milligram per square centimeter per the VARESC computer code. There is scientific evidence indicating that highly localized irradiation of the skin by hot particles is less biologically damaging than more uniform irradiation by the same quantity of radioactive material.

NRC 10 CFR 43.11 U.S. NUCLEAR REGULATORY COMMISSION 10 CFR 20.408 REPORT OF TERMINATING INDIVIDUAL'S OCCUPATIONAL EXPOSURE		1. DATE OF REPORT 1-17-89 2. NRC LICENSE NUMBER NRC-42 (HRC)	
PART I. LICENSEE AND INDIVIDUAL IDENTIFICATION DATA			
3. Name & address of reporting licensee WOLF CREEK NUCLEAR OPERATING CORP. WOLF CREEK GENERATING STATION PO BOX 411 BURLINGTON KS. 66839		4. Name of individual & address	
5. Name & address of employer MAINTENANCE MECHANICAL DANIEL INTERNATIONAL		6. sex	7. yy

PART II. EXTERNAL DOSE DATA					
Yes <input type="checkbox"/> 8. Monitoring for external exposure to radiation was provided.					
9. PERIODS OF EXPOSURE	10. WHOLE BODY DOSE (rems)				11. EXTREMITY DOSE (rems) SHALLOW (skin)
	DEEP		SHALLOW (skin)		
	a TOTAL	b NEUTRON	c TOTAL	d BETA	
10/15/88 - 12/09/88	.422	.000	12.922	12.500	.422

PART III. INTERNAL EXPOSURES TO RADIOACTIVE MATERIAL	
Yes <input type="checkbox"/> 12. Monitoring for exposure to radioactive material provided.	
13. Periods of exposure (states whole body counting performed)	
10/03/88 12/09/88	
14. Other bioassay results	
20. THIS REPORT IS FURNISHED TO YOU UNDER THE PROVISION OF THE NUCLEAR REGULATORY COMMISSION'S REGULATION 10 CFR PART 19. YOU SHOULD PRESERVE THIS REPORT FOR FUTURE REFERENCE.	
INTERIM LETTER FINAL REPORT	AUTHORIZING SIGNATURE  L.F. Breshears Health Physics Supervisor

NOTE: THE ORIGINAL FORM WITH THE PERSONAL INFORMATION IS MAINTAINED BY HEALTH PHYSICS