

WOLF CREEK

NUCLEAR OPERATING CORPORATION

Donna Jacobs
Plant Manager

FEB 28 2003

WO 03-0011

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

Subject: Docket No. 50-482: Licensee Event Report 2003-001-00,
Manipulation of Component Outside of Procedural Guidance
Causes Reactor Trip

Gentlemen:

The enclosed Licensee Event Report (LER) 2003-001-00 is being submitted pursuant to 10 CFR 50.73(a)(2)(iv)(A) regarding an actuation of the Reactor Protection System including an automatic reactor trip at Wolf Creek Generating Station.

Wolf Creek Nuclear Operating Corporation has made no commitments in the enclosed LER.

If you have any questions concerning this matter, please contact me at (620) 364-4246, or Mr. Karl A. (Tony) Harris at (620) 364-4038.

Very truly yours,


Donna Jacobs

DJ/rlg

Enclosure

cc: J. N. Donohew (NRC), w/e
D. N. Graves (NRC), w/e
E. W. Merschoff (NRC), w/e
Senior Resident Inspector (NRC), w/e

JE22

Estimated burden per response to comply with this mandatory information collection request. 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME WOLF CREEK GENERATING STATION	2. DOCKET NUMBER 05000482	3. PAGE 1 OF 4
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4. TITLE
Manipulation of Component Outside of Procedural Guidance Causes Reactor Trip

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
01	03	2003	2003	-- 001 --	00	2	28	2003	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50. (Check all that apply)									
10. POWER LEVEL 100	20.2201(b)	20.2203(a)(3)(ii)	50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)						
	20.2201(d)	20.2203(a)(4)	50.73(a)(2)(iii)	50.73(a)(2)(x)						
	20.2203(a)(1)	50.36(c)(1)(i)(A)	X 50.73(a)(2)(iv)(A)	73.71(a)(4)						
	20.2203(a)(2)(i)	50.36(c)(1)(ii)(A)	50.73(a)(2)(v)(A)	73.71(a)(5)						
	20.2203(a)(2)(ii)	50.36(c)(2)	50.73(a)(2)(v)(B)	OTHER						
	20.2203(a)(2)(iii)	50.46(a)(3)(ii)	50.73(a)(2)(v)(C)	Specify in Abstract below or in NRC Form 366A						
	20.2203(a)(2)(iv)	50.73(a)(2)(i)(A)	50.73(a)(2)(v)(D)							
	20.2203(a)(2)(v)	50.73(a)(2)(i)(B)	50.73(a)(2)(vii)							
20.2203(a)(2)(vi)	50.73(a)(2)(i)(C)	50.73(a)(2)(viii)(A)								
20.2203(a)(3)(i)	50.73(a)(2)(ii)(A)	50.73(a)(2)(viii)(B)								

12. LICENSEE CONTACT FOR THIS LER

NAME Karl A. (Tony) Harris, Manager Regulatory Affairs	TELEPHONE NUMBER (Include Area Code) (620) 364-4038
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

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

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

On January 3, 2003, at 11:01 a.m. Central Daylight Time (CDT), Wolf Creek Generating Station (WCGS) experienced an automatic actuation of the Reactor Protection System (RPS), including an automatic reactor trip, due to power range neutron flux high negative rate. The reactor trip occurred while restoring the number one rod drive motor generator (RDMG) set to service after routine breaker maintenance.

A Reactor Operator (RO) in the plant was simulating how to manually charge the non-operating RDMG set output breaker to two non-licensed operators. The RO manipulated the manual charging handle for the RDMG set number one output breaker outside of procedural guidance and without control room direction. Concurrent with the actuation of the manual charging handle, the number one output breaker closed, then reopened, and the number two RDMG set output breaker opened. When the number two RDMG set output breaker opened, the control rods lost holding power and started to insert. All control rods fully inserted, and the RPS and the Engineered Safety Features (ESF) systems performed as expected. The cause of this event was personnel error.

The safety significance of this event is low. All safety related equipment performed as expected. There were no adverse effects on the health and safety of the public.

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

Background:

The control rod drive mechanisms (CRDMs) [AA] are powered by three-phase ac power from the two rod drive motor generator (RDMG) [AA-MG] sets. The RDMG sets are arranged in parallel with an output breaker [AA-BKR] for each RDMG set. Opening of both RDMG set output breakers causes a loss of power to the CRDMs and control rods begin to insert.

Plant Conditions Prior to the Event:

MODE – 1
Power – 100 Percent
Normal Operating Temperature and Pressure

Event Description:

On January 3, 2003, at 11:01 a.m., Central Daylight Time (CDT), procedure SYS SF-120, "Rod Control System Operation", step 6.2.1 was being performed by a relief crew Reactor Operator (RO) to restore the number one RDMG set to service after RDMG motor supply breaker scheduled preventive maintenance. The RO was explaining the RDMG set output breaker operation to two non-licensed operators observing the performance of SYS SF-120. When the RO was asked by one of the non-licensed operators about the breaker charging operation, manual versus electric, the RO knelt down and pulled downward on the manual charging handle for the RDMG set number one output breaker. When the handle was pulled, an electric arc was seen inside the breaker, the electric charging motor activated, and the RO saw the charger indicator returning to the charged position. The RO saw there was no indication of power to the number two RDMG set output breaker. The number two RDMG set output breaker had opened causing the control rods to lose holding power and start to insert into the reactor core. The control rods inserting caused a power range neutron flux high negative rate that resulted in an automatic reactor trip.

All control rods fully inserted and all safety related equipment performed as designed. The Reactor Protection System (RPS) and Engineered Safety Features (ESF) systems performed as required.

During the event, the manual charging handle should have only moved approximately 15 degrees downward. Interviews with the Operators present during the event agreed the handle was able to be moved downward approximately 45 degrees without applying undue force. Initial troubleshooting was performed, with the breaker in its as found condition, racked in, charged, and open. However, the initial troubleshooting could not identify a hardware failure and the problem could not be duplicated. The breaker was removed from service for additional troubleshooting and was replaced with a spare breaker that had been inspected and tested for proper operation.

Based on further troubleshooting performed on the breaker, no hardware failure can be specifically determined. The attempts to recreate the event were unsuccessful. The breaker that was removed from service was tested and functioned properly after the event.

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

Basis for Reportability:

The reactor trip and subsequent actuation of the ESF systems described in this event are reportable per 10 CFR 50.73 (a)(2)(iv)(A), which states, in part: "Any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B) of this section." Paragraph (B)(1) of 10 CFR 50.73(a)(2)(iv) includes "Reactor protection system (RPS) including: reactor scram or reactor trip."

Root Cause:

The root cause has been determined to be personnel error. The RO manipulated the charging handle outside of procedural guidance and without control room direction.

A potential second root cause is a hardware failure of the number one RDMG set output breaker. Troubleshooting performed on the breaker did not identify a specific hardware failure and the event could not be recreated. The corrective action section below addresses further evaluation of the breaker.

Corrective Actions:

As an immediate corrective action, on-the-job training and task performance evaluations were suspended pending investigation and evaluation of this event. Just In Time training was given to the operating crews and other operations personnel qualified to perform restoration of the breaker. The training was to ensure personnel understand the design, set up, and operation of this type of Westinghouse breaker and to reinforce the expectation to not manipulate components outside of procedural guidance and control room approval.

Corrective actions to address the root cause:

The RO involved in the event was taken off crew to assist in the evaluation of this event and was counseled in accordance with Wolf Creek Nuclear Operating Corporation (WCNOC) procedures.

The number one RDMG set output breaker will be evaluated and refurbished or replaced to ensure that a reliable spare exists.

A behavior based performance observation program, based on critical Operator behaviors, will be developed. Training will be provided for all Operators on the new behavior based observation techniques to facilitate implementation of the program. The purpose of the observation techniques is to improve performance of Operations personnel in routine and non-routine activities to reduce the number of personnel errors.

Benchmarking will be performed to determine the standard industry practice for performance of preventive maintenance on RDMG sets. The benchmarking information will be utilized to evaluate and determine if preventive maintenance on the RDMG sets should be changed to an outage activity based on impact to the schedule, organizations performing the maintenance, and risk.

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

Additional corrective actions to address this event are being implemented through the WCNOG corrective action program (Performance Improvement Request (PIR) 2003-0010).

Safety Significance:

The safety significance of this event is low. All safety related systems, structures, and components performed as required and expected. Nuclear safety was maintained by implementation of emergency operating procedures after the automatic shutdown of the reactor. There were no adverse effects on the health and safety of the public.

Previous Events:

Research into the corrective action program database was conducted for all WCNOG corrective action documents that had been coded as component manipulation control for the past two years. Three events were identified involving behaviors similar to this event. These behavioral issues are being addressed in the corrective actions to PIR 2003-0010.

Research into industry operating experience was conducted on data from the past ten years using the search criteria of Westinghouse plants and events that were associated with the control rod drive system, circuit breaker, contactor, controller, or motor components. Eleven events were identified; none were similar to this event.

A search of LERs submitted over the past three years by WCNOG revealed no similar events.