

WOLF CREEK
NUCLEAR OPERATING CORPORATION

John A. Bailey
Vice President
Operations

February 11, 1992

NO 92-0044

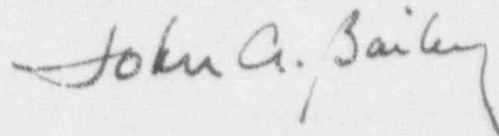
U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-137
Washington, D. C. 20555

Subject: Docket No. 50-482: Licensee Event Report 92-001-00

Gentlemen:

The attached Licensee Event Report (LER) is being submitted voluntarily and concerns an event which could have caused both Intermediate Range Channels to be inoperable during Low Power Physics Testing.

Very truly yours,



John A. Bailey
Vice President
Operations

JAB/jra

Attachment

cc: A. T. Howell (NRC), w/a
R. D. Martin (NRC), w/a
G. A. Pick (NRC), w/a
W. D. Keckley (NRC), w/a

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) **Wolf Creek Generating Station** DOCKET NUMBER (2) **0 5 0 0 0 4 8 2 1** PAGE (3) **1** of **0 7**

TITLE (4) **Failure To Follow Procedures Could Have Caused Both Intermediate Range Channels To Be Inoperable During Physics Testing**

| EVENT DATE (5) | | | LER NUMBER (6) | | | REPORT DATE (7) | | | OTHER FACILITIES INVOLVED (8) | | | | | | | | | | | | | | |
|----------------|-----|------|----------------|-------------------|-----------------|-----------------|-----|------|-------------------------------|---|---|-------------------|---|---|---|---|---|---|---|---|--|--|--|
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OPERATING MODE (9) **2** THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR : (Check one or more of the following) (11)

| | | | | |
|---------------------------|-------------------|------------------|----------------------|--|
| | 20.402(b) | 20.405(c) | 50.73(a)(2)(iv) | 73.71(b) |
| POWER LEVEL (10) 0 | 20.405(a)(1)(i) | 50.36(c)(1) | 50.73(a)(2)(v) | 73.71(c) |
| | 20.405(a)(1)(ii) | 50.36(c)(2) | 50.73(a)(2)(vii) | <input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 388A) |
| | 20.405(a)(1)(iii) | 50.73(a)(2)(i) | 50.73(a)(2)(viii)(A) | Voluntary Report |
| | 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 - Manager Plant Support | 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 NFRDS | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NFRDS |
|-------|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|
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SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

| EXPECTED SUBMISSION DATE (15) | MONTH | DAY | YEAR |
|-------------------------------|-------|-----|------|
| | | | |

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

On January 13, 1992, at approximately 0735 CST, while performing low power physics testing, Control Room operators were notified that the Arr Channel Operational Tests of the Intermediate Range Channels had not been performed properly on January 11, 1992 resulting in both channels being declared inoperable and entry into Technical Specification 3.0.3. Subsequent evaluation of the setpoint values used on January 11, 1992, has concluded that the values were within the Technical Specification allowable values and therefore, the Intermediate Range Channels were operable.

Several factors contributed to this event's occurrence including failure to properly reference temporary procedure changes at the affected procedure steps prior to procedure usage and the assumption by the Instrumentation and Controls (I&C) test performers that the temporary procedure changes had been properly incorporated. To prevent recurrence, an independent verification of the use of the proper setpoints prior to physics testing will be added to the Reactor Engineering physics testing procedure. Additionally, the details of this event are being issued as I&C required reading to emphasize the importance of ensuring that all aspects of proper procedure performance have been completed.

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

INTRODUCTION

On January 13, 1992, at approximately 0735 CST, Control Room operators were notified that surveillance test procedures STS IC-235, "Analog Channel Operational Test Nuclear Instrumentation System Intermediate Range N-35 Protection Set I," and STS IC-236, "Analog Channel Operational Test Nuclear Instrumentation System Intermediate Range N-36 Protection Set II," had not been performed properly on January 11, 1992 when Cycle 5 values were used for the setpoints for the 25 percent of rated thermal power (RTP) reactor trips rather than the calculated values for the Cycle 6 core. These surveillance test procedures are required to be performed by Technical Specification (T/S) Surveillance Requirement 4.10.3.2 within twelve hours prior to initiating physics testing which began on January 12, 1992, at approximately 0530 CST. This discovery resulted in both Intermediate Range Channels [JC-CHA] being declared inoperable and entry into T/S 3.0.3. Subsequent evaluation of the setpoint values used on January 11, 1992, has concluded that the values were within the T/S allowable values and the Intermediate Range Channels were operable. Although the plant's T/S were not violated, this event is being submitted as a voluntary report.

DESCRIPTION OF EVENT

Technical Specification 3.10.3, Physics Tests, states, in part, that the limitations of T/S 3.1.1.3, Moderator Temperature Coefficient, T/S 3.1.1.4, Minimum Temperature For Criticality, T/S 3.1.3.1, Movable Control Assemblies Group Height, T/S 3.1.3.5, Shutdown Rod Insertion Limit, and T/S 3.1.3.6, Control Rod Insertion Limits may be suspended during the performance of physics tests provided the reactor trip setpoints on the operable Intermediate and Power Range Channels are set at less than or equal to 25 percent of RTP. Technical Specification Surveillance Requirement 4.10.3.2 requires that each Intermediate and Power Range Channel shall be subjected to an analog channel operational test within twelve hours prior to initiating physics testing.

On November 22, 1991, Reactor Engineering personnel issued a memorandum to Instrumentation and Controls (I&C) which required the Intermediate Range Channels setpoints to be adjusted to 69 percent of the Cycle 5 values based on their calculations of the expected values for the Cycle 6 core. As a result of this information, on November 29, 1991, temporary procedure changes for surveillance test procedures STS IC-435, "Channel Calibration NIS Intermediate Range N-35," and STS IC-436, "Channel Calibration NIS Intermediate Range N-36," were approved which included the calculated values for the Cycle 6

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core for the startup alignments for the Intermediate Range Channels' reactor trip at less than or equal to 25 percent of RTP. These calculated values are used for the reactor trip bistable setpoints prior to initial startup following refueling. Because the setpoint values were to be superseded by permanent values once 100 percent power was reached, the procedure changes were issued as temporary. The temporary procedure changes were written and approved as valid through December 7, 1991. On November 30, 1991, surveillance test procedures STS IC-435 and STS IC-436 were performed adjusting the Intermediate Range Channels to their calculated setpoints.

On January 6, 1992, temporary procedure changes for surveillance test procedures STS IC-235 and STS IC-236 were approved which included the calculated values for the Cycle 6 core startup alignments for the Intermediate Range Channels reactor trip at less than or equal to 25 percent of RTP. Because the setpoint values were to be superseded by permanent values once 100 percent power was reached, these procedure changes were issued as temporary also. The temporary procedure changes were written and approved as valid through January 11, 1992.

On January 11, 1992, at approximately 2010 CST, I&C personnel commenced STS IC-235 for the calibration of Channel N-35. This calibration of Channel N-35 was completed at approximately 2135 CST. Subsequently, at approximately 2150 CST, I&C personnel commenced STS IC-236 for the calibration of Channel N-36. This calibration of Channel N-36 was completed at 2224 CST.

On January 12, 1992, at approximately 0526 CST, procedure RXE 01-002, "Reload Low Power Physics Testing," was commenced when shutdown rods were pulled and the plant entered Mode 2, Startup.

On January 13, 1992, during the post-test review of surveillance test procedures STS IC-235 and STS IC-236, the I&C Group Supervisor discovered that the temporary procedure changes which included the calculated values for the startup alignments for the Intermediate Range Channels' reactor trip at less than or equal to 25 percent of RTP had not been properly inserted into the surveillance test procedure prior to their performance on January 11, 1992. Therefore, the values used during the January 11, 1992 calibration of Channels N-35 and N-36 were the values representing the 25 percent of RTP for the Cycle 5 core rather than the calculated values for the Cycle 6 core.

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On January 13, 1992, at approximately 0735 CST, I&C personnel notified Control Room operators of the failure to properly perform the surveillance test procedure. At the time of this discovery, the plant was in Mode 2 with Shutdown Bank "B" partially inserted into the core with low power physics testing in progress. Upon notification from I&C personnel, Control Room operators halted the low power physics testing. As a result of the failure to properly perform surveillance test procedures STS IC-235 and STS IC-236, Control Room operators determined that the limitations of T/S 3.1.1.3, T/S 3.1.1.4, T/S 3.1.3.1, T/S 3.1.3.5 and T/S 3.1.3.6 could no longer be suspended as allowed by T/S 3.10.3, and therefore, were in effect. For T/S 3.1.1.3, the Moderator Temperature Coefficient for the new core had not yet been measured but was negative by design. For T/S 3.1.1.4, the Minimum Temperature For Criticality was greater than or equal to 551 degrees Fahrenheit as required. For T/S 3.1.3.1, the Movable Control Assemblies Group Height was not for rod operability. For T/S 3.1.3.5, the action statement was entered which required Shutdown Bank "B" rods to be withdrawn to the full-out position within one hour or the rods declared inoperable since Shutdown Bank "B" was partially inserted into the core. For T/S 3.1.3.6, the physical insertion limits were as required for the Control Rod Insertion Limits.

I&C personnel estimated that the values used in the January 11, 1992 calibration had resulted in the setpoints being set at approximately 36 percent rather than less than or equal to 25 percent of RTP based on the prestart-up estimates. Technical Specification 2.2.1, applicable in Mode 2 and Mode 1, Power Operations below low setpoint power range neutron flux interlock setpoint, requires the intermediate range trip setpoint to be set at less than or equal to 25 percent with an allowable value of less than or equal to 35.3 percent. Technical Specification 2.2.1, action statement b, requires that with the Reactor Trip System [JC] instrumentation or interlock setpoint less conservative than the allowable value, either adjust the setpoint consistent with the trip setpoint value of less than or equal to 25 percent of RTP and determine within twelve hours that the as-measured value of the setpoint error of the affected channel is less than the total allowance provided in Table 2.2-1 when the calculation provided in T/S 2.2.1 is applied, or declare the channel inoperable and apply the applicable action statement requirement of T/S 3.3.1 until the channel is restored to operable status with its setpoint adjusted consistent with the trip setpoint value. Because it was estimated that the setpoints were set at approximately 36 percent of RTP, thus exceeding the calculated value for the T/S allowable value of 35.3 percent of RTP, and more than twelve hours had already lapsed since the plant had entered

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Mode 2, Control Room operators declared both Intermediate Range Channels inoperable. Technical Specification 3.3.1 requires two operable Intermediate Range Channels. The action statement for T/S 3.3.1 states that with the number of channels operable one less than the minimum channels operable requirement and with the thermal power level below the intermediate range neutron flux interlock setpoint, restore the inoperable channel to operable status prior to increasing thermal power above the interlock setpoint; or with thermal power above the interlock setpoint but below 10 percent of RTP, restore the inoperable channel to operable status prior to increasing thermal power above 10 percent of RTP. Technical Specification 3.3.1 does not provide an action statement for inoperability of more than one channel. Consequently, Control Room operators entered T/S 3.0.3 on January 13, 1992, at 0735 CST, and I&C personnel were instructed to reperform STS IC-235 and STS IC-236.

On January 13, 1992, at 0805 CST, Control Room operators began to bring Shutdown Bank "E" to its full-out position, while inserting Control Banks in normal overlap to compensate for the positive reactivity addition. At 0817 CST, Shutdown Bank "B" rods were positioned in their full-out position in accordance with T/S 3.1.3.5 and the action statement was exited. At 0835 CST, I&C personnel commenced reperformance of partial surveillance test procedures to properly calibrate the intermediate range trip setpoint at less than or equal to 25 percent of RTP. At 0919 CST, I&C notified Control Room operators that the partial surveillance test STS IC-235 had been successfully completed, thus restoring Channel N-35 to operable status and T/S 3.0.3 was exited and the appropriate action statement for T/S 3.3.1 was entered. At 0936 CST, the partial surveillance test STS IC-236 was successfully completed, thus restoring Channel N-36 to operable status and the action statement for T/S 3.3.1 was exited.

Using actual intermediate range current data taken during the performance of STS RE-011, "RCS Total Flow Rate Measurement," on January 24, 1992, an evaluation of the January 11, 1992 setpoints has concluded that these setpoints did not exceed the actual values for the T/S allowable values. Therefore, the Intermediate Range Channels were operable.

ROOT CAUSE AND CORRECTIVE ACTIONS

Review of this event has identified several factors which contributed to this failure to properly perform the surveillance test procedures. As allowed by procedure, the temporary procedure changes to surveillance procedures STS IC-235 and STS IC-236 were not issued as permanent changes to avoid

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incorporating the newly calculated setpoint values into the permanent revision process before the new, actual setpoint values were obtained at 100 percent power. Instead, the temporary procedure changes were written and approved as valid through January 11, 1992. On January 11, 1992, at approximately 1715 CST, copies of STS IC-235 and STS IC-236 were issued in anticipation of performing the procedures within twelve hours prior to physics testing as required by T/S Surveillance Requirement 4.10.3.2. The temporary procedure changes were issued with the procedures. Administrative procedure ADM 07-100, "Preparation, Review, Approval And Distribution Of WOGS Procedures," requires that temporary changes to be used in the performance of surveillance testing shall be referenced at the applicable procedure step prior to procedure usage. Because it was possible that the surveillance test procedures would not be performed until January 12, 1992, thereby requiring new temporary procedure changes to be written, approved and incorporated prior to performance due to the temporary procedure changes expiring on January 11, 1992, the temporary procedure changes were not referenced at the applicable procedure step at the time the procedures were issued for use. The temporary procedure changes were verified to be valid and attached to the surveillance procedures. The Surveillance Test Routing Sheets, which are attached to the front of the surveillance test procedures to be performed and includes a verification that the procedure is the current revision with all temporary changes attached, was initialed and dated. During the shift turnover at approximately 1900 CST, the on-duty I&C personnel discussed with the nightshift I&C crew that the temporary procedure changes had not been referenced and incorporated at the applicable procedure steps yet. The nightshift I&C Supervisor then instructed the I&C Technician who was expected to perform the surveillance test procedures to reference and incorporate the contents of the temporary procedure changes into the body of the procedures prior to the time of performance. The nightshift I&C Supervisor did not verify that the temporary changes had been incorporated as had been instructed. Subsequently, when the procedures were commenced at 2010 CST, the I&C Technician who was to incorporate the temporary procedure changes and who had been expected to perform the surveillance test procedures was involved in other activities and the surveillance test procedures were assigned to other qualified I&C personnel. Seeing that the Surveillance Test Routing Sheet verification had been signed, the I&C test performers assumed that the temporary procedure changes had been properly incorporated. Therefore, I&C personnel failed to follow procedures when the temporary procedure changes were not referenced at the applicable procedure step prior to procedure usage. Since the calculated values for the Cycle 6 core had been properly used during the November 30, 1991 performances of surveillance test procedures STS IC-435 and STS IC-436 to adjust the Intermediate Range Channels' reactor

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trip setpoints to their lower values, when surveillance test procedures STS IC-235 and STS IC-236 were performed on January 11, 1992 without the temporary procedure changes incorporated, the trip setpoint values were found low and were adjusted back to the Cycle 5 values indicated in the procedures. The I&C test performers did not question the fact that the as-found setpoints for both Intermediate Range Channels were low by the same amount. Additionally, the post-test reviews performed by the I&C test performers and the Shift Supervisor failed to identify that the temporary procedure changes had not been properly incorporated even though the temporary procedure changes were attached to the procedures.

To prevent recurrence of this event, a step will be added to RXE 01-002, "Reload Low Power Physics Testing," that will require Reactor Engineering personnel to verify that the surveillance test procedures used to adjust and test the Intermediate and Power Range Channels within twelve hours of physics testing used the setpoint values based on the correction factors determined for the current core load. Because this verification will be performed by persons not involved in the testing of the Intermediate and Power Range Channels, this independent verification should eliminate this event's recurrence. This revision to RXE 01-002 will be completed by March 1, 1992. Additionally, the details of this event will be issued as I&C required reading to emphasize the importance of ensuring that all aspects of proper procedure performance have been completed prior to procedure performance and during the post-test review. This will be issued as I&C required reading by February 10, 1992.

ADDITIONAL INFORMATION

During this event, the plant was in Mode 2, Startup, with low power physics testing in progress. Although the reactor trip setpoints on the Intermediate Range Channels were not set at less than or equal to 25 percent of RTP, the setpoints were within the T/S allowable values. There was no threat to the health and safety of the public. There was no damage to plant equipment or release of radioactivity as a result of this event.