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May 29, 1991

U.S. Nuclear Regulatory Commission  
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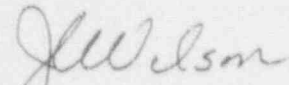
Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT UNIT 1 - DOCKET  
NO. 50-328 - FACILITY OPERATING LICENSE DPR-79 - LICENSEE EVENT REPORT  
(LER) 50-328/91004, REVISION 1

The enclosed LER revises the corrective actions associated with the event. The LER provides details concerning the discovery of the plant process computer point for Control Rod Bank C, Group 2, Position K-10, being out-of-scan from March 21 to March 29, 1991. This resulted in the rod deviation alarm being inoperable without complying with the requirements of Technical Specification (TS) Surveillance Requirement (SR) 4.1.3.2. This event was reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as an operation prohibited by TSs on April 24, 1991. The revisions to the LER are indicated by revision bars in the right margin.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

  
J. L. Wilson

Enclosure

cc: See page 2

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U.S. Nuclear Regulatory Commission

May 29, 1991

cc (Enclosure):

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## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Sequoyah Nuclear Plant, Unit 2 DOCKET NUMBER (2) 01501013 PAGE (3) 12  
TITLE (4) Computer point out of scan on the P-250 computer as a result of not maintaining configuration control

EVENT DAY (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(5)
01	31	09	09	00	04	01	05	21	09	01
OPERATING MODE (9)				THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 51: (Check one or more of the following)(11)						
POWER LEVEL (10)				20.402(b) 20.405(c) 50.73(a)(2)(iv) 73.71(b)						
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) OTHER (Specify in										
20.405(a)(1)(iii) XX 50.73(a)(2)(i) 50.73(a)(2)(viii)(A) Abstract below and in										
20.405(a)(1)(iv) 50.73(a)(2)(ii) 50.73(a)(2)(viii)(B) Text, NRC Form 366A										
20.405(a)(1)(v) 50.73(a)(2)(iii) 50.73(a)(2)(x)										

## LICENSEE CONTACT FOR THIS LER (12)

NAME Greg S. Kniedler, Compliance Licensing Engineer TELEPHONE NUMBER 615 843-7461  
AREA CODE 615

## COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

## SUPPLEMENTAL REPORT EXPECTED (14)

Y/N (If yes, complete EXPECTED SUBMISSION DATE) X/NO DATE (15) 01/01/91

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

This LER is being revised to include additional corrective actions for this issue. On March 29, 1991, at 1142 Eastern standard time, with Unit 2 in Mode 1, TVA identified the plant process computer P-250 computer point C0019A (Control Bank C, Group 2, Position K-10) was out-of-scan. The computer point monitors a control rod cluster position, which provides input into the "Rod Deviation and Sequence/NIS Power Range Tilts" alarm. Surveillance Requirement (SR) 4.1.3.2 requires the comparison of the demand position and rod position indication systems at least once every four hours if this alarm is inoperable. The computer point was taken out of scan on March, 21, 1991, while troubleshooting the "Rod Deviation and Sequence/NIS Power Range Tilts" alarm, which came in during the performance of Periodic Instruction (PI) O-PI-XXX-085-001.0, "Bimonthly Resetting of Control Rod Fully Withdrawn Position." The cause of the event is failure to return the point to scan; configuration control during troubleshooting of the alarm was not implemented. Immediate corrective action was to place the computer point back into scan. Additional corrective actions include discussions with personnel concerning the importance of configuration control and implementation of a method to maintain configuration control.

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Sequoyah Nuclear Plant Unit 2	10510101312181911	--	004	--	01	01	02	OF	12

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

DESCRIPTION OF EVENT

On March 29, 1991, at 1142 Eastern standard time (EST), with Unit 2 operating in Mode 1 (100 percent power, 2,235 pounds per square inch gauge [psig], and 578 degrees Fahrenheit [F]), TVA determined that the plant process computer P-250 computer point C0019A for Control Rod Bank C, Group 2, position K-10, had been out-of-scan (bypassed) from March 21 to March 29, 1991. The computer point monitors the control bank group position that provides input into the "Rod Deviation and Sequence/NIS Power Range Tilts" alarms (also referred to as rod position deviation monitor or rod deviation alarm). Technical Specification (TS) Surveillance Requirement (SR) 4.1.3.2 requires that the "demand position indication system and the rod position indication system be compared at least once per four hours when the Rod Position Deviation Monitor is inoperable". Unit 2 entered Limiting Condition for Operation (LCO) 3.1.3.2 on 1142 EST. At 1145 EST, computer point C0019A was returned to scan and LCO 3.1.3.2 was exited.

On March 21, 1991, at approximately 0900 EST, Periodic Instruction (PI) O-PI-NXX-085-001.0, "Bimonthly Resetting of Control Rod Fully Withdrawn Position," was initiated on Unit 2 by the maintenance instrumentation group (MIG). This PI was performed to change the relative axial position of the control rods to the guide cards, thereby, spreading out any wear over a larger rod surface area and minimizing the wear depth in any one axial location. (Guide cards are installed in the reactor upper internals to direct the control rods toward the fuel assembly guide thimbles.) LCO 3.1.3.4 defines the fully withdrawn position for shutdown and control banks at a position within "the interval of greater than or equal to 222 and less than or equal to 231 steps withdrawn, inclusive." TS Change 89-15 (submitted to NRC on January 31, 1989, and approved by NRC on March 28, 1989) changed the fully withdrawn position for shutdown and control banks from 228 steps to the current range. The positioning of the rods at 230 steps for the fully withdrawn position occurred on April 3, 1989. The first performance of this bimonthly procedure occurred in January 1991, and it changed the fully withdrawn position from 230 to 229 steps.

The objective of this performance of O-PI-NXX-085-001.0 was to reposition the shutdown and control banks fully withdrawn position from 229 steps to 227 steps. The procedure initially requests that Control Bank D be moved; however, since the position of Control Bank D was currently at 219 steps controlling, no movement of the bank was required. Operations was requested to move Control Bank C from its fully withdrawn position of 229 steps to 227 steps at approximately 1045 EST. When this was performed, the "Rod Deviation and Sequence/NIS Power Range Tilts" alarm (2-XA-55-4B-25) was received. The alarm was the result of the control rod sequence function of the P-250 computer's rod position supervision program. The program generates an alarm if any control rod banks are not moved in the proper sequence. For the control banks, Control Bank D must be at or below its bottom engage position (100 steps) before Control Bank C is moved below its stored top-of-core position in the P-250 (which was currently programmed at 228 steps). In this instance, Control Bank D was at 219 steps and Control Bank C was moved to 227 steps. Therefore, the P-250 computer generated an alarm, causing the "Rod Deviation and Sequence/NIS Power Range Tilts" annunciator to alarm. The performance of

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		051010131218	91	--	0	0	4	--	0	1	0	3	OF

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

## DESCRIPTION OF EVENT

the PI was stopped. The unit operator (UO) immediately reviewed the annunciator response procedure System Operating Instruction (SOI)-55-2M4 XA-55-48, "Annunciator Response," and notified the assistant shift operations supervisor (ASOS), shift operations supervisor (SOS), and Operations Superintendent, who was in the main control room at the time.

The core reactivity status was evaluated and determined to be normal. The MIG technicians, the UO, the ASOS, the SOS, and the Operations Superintendent evaluated the alarm and determined that it was associated with the performance of O-PI-NXX-085-001.0. The determination was based on the evaluation of the alarm and the plant status. Two of the three possible primary causes of the alarm, unacceptable quadrant power tilt ratio and excessive rod deviation, were determined not to be applicable. The other possible cause of the alarm, moving rods out of sequence, was applicable. Rods were being moved out of normal sequence and the thumbwheels in the rod control system logic cabinet were being reset. Therefore, the cause of the "Rod Deviation and Sequence/NIS Power Range Tilts" alarm was considered to be the performance of PI-NXX-085-001.0. It was expected that the alarm would clear when the PI was complete. This expectation was based on the fact that at the end of the PI, all normally full-out rods would be at 227 steps and the resetting of the thumbwheels in the rod control system logic cabinet would be complete. If the alarm did not clear when the PI was completed, the PI would be backed out of by repeating the PI to restore the control rods to 229 steps. The Operations Superintendent and the SOS decided to continue with the PI based on these observation and determinations.

The performance of the PI was continued with the placement of the control and shutdown banks (excluding Control Bank D) at 227 steps, but the procedure was not closed. This was because of receipt of a second alarm, "Rod Control Bank Limit Low" that had subsequently come in during the movement of Control Bank B; the fact that the Shutdown Bank D demand position counter was working intermittently; and the fact that neither of the alarms had cleared once the control and shutdown banks were placed at the same height of 227 steps. When the "Rod Control Bank Limit Low" alarm was received, Operations personnel stopped the PI, reviewed the annunciator response procedure, evaluated core reactivity status, which was acceptable, and again determined that the alarm was associated with the performance of O-PI-NXX-085-001.0. The SOS and the Operations Superintendent determined that this was an expected alarm, since the control rods had been positioned below the 228 step rod insertion limit for 100 percent power. The shift technical advisor (STA) was asked to evaluate operability of the demand position counter and the locked in alarms. A work request was written at approximately 1200 EST concerning the problem encountered with the Shutdown Bank D step counter. At approximately 1215 EST, the Unit 2 ASOS contacted MIG and requested that they troubleshoot the cause of the "Rod Deviation and Sequence/NIS Power Range Tilts" alarm.



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

DESCRIPTION OF EVENT

A MIG computer technician arrived at the remote P-250 terminal in the computer room and proceeded to investigate. The technician initially tried to update the rod bank position to clear the alarm and then made an attempt to manually clear the alarm by way of a computer program. Both were unsuccessful. The MIG computer technician contacted his supervisor, who was at the Sequoyah Training Center (STC). The two reviewed the problem over the phone. It was decided to do a group review of the individual rod clusters and take any rod cluster out-of-scan that was out of step with the other rod clusters (any rod cluster that was reading 230 steps). A review of a computer printout dated March 21, 1991, at 1208 EST indicated computer point C0019A (Control Bank C, Group 2, position K-10) was reading 230 steps versus the Control Bank C demand counter reading of 227 steps. Control Bank C had been stepped into 227 steps during the performance of the PI. The technician took the point out-of-scan at approximately 1300 EST and entered a value comparable to the values for other points in that rod group. This action did not clear the "Rod Deviation and Sequence/NIS Power Range Tilts" alarm. The technician did not inform the MCR that a point was taken out-of-scan and therefore no log entry was made in the operators' log. In addition, no configuration control was being maintained by the MIG computer technician and no work request (WR) or procedure was being used. The MIG computer technician does not remember returning the point to scan. The MIG computer technician again contacted his supervisor at the STC for further instruction. The supervisor returned to the plant to assist in the investigation.

At 1244 EST, Operations completed the evaluation of the operability of the Shutdown Bank D step counter, and the TS implications of the locked-in "Rod Deviation and Sequence/NIS Power Range Tilts" alarm and the "Rod Control Bank Limit Low" alarm. Based on this evaluation, the action of LCO 3.1.3.2.b.1 and the requirements of SR 4.1.3.2 were complied with. Required actions were to be performed with the frequency specified in the TS and the starting time for compliance of these actions was based upon the time the problems were initially discovered.

The supervisor and the MIG computer technician arrived on site and a discussion relative to the technician's previous actions took place. The MIG computer technician supervisor proceeded to perform his own investigation of the "Rod Deviation and Sequence/NIS Power Range Tilts" alarm at approximately 1530 EST by removing computer points C0001A, C0002A, C0005A, C0006A, C0009A, and C0010A for various control rod banks, groups, and positions from scan. The MCR was not informed of these actions and the alarms did not clear. The supervisor then entered a value in the P-250 of 230 steps for Control Banks A, B and C.

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TEXT CONTINUATION

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		YEAR	NUMBER	NUMBER	
		0151010131218	01	01	01

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

## DESCRIPTION OF EVENT

This cleared the "Rod Deviation and Sequence/NIS Power Range Tilts" alarm. It was determined that the alarm was the result of lowering the Control Banks A, B, and C below the P-250 computer stored value for fully withdrawn position of 228 steps. Lowering the Control Bank C, B, and A below the fully withdrawn position of 228 while Control Bank D was at 219 steps resulted in the "Rod Deviation and Sequence/NIS Power Range Tilts" alarm because of a wrong sequence of bank movement. The computer program in the P-250 initiated this alarm as a result of the wrong sequence. The wrong sequence in this specific case is moving Control Bank C below the stored fully withdrawn position before Control Bank D reached its overlap position relative to Control Bank C. Operations requested that the computer point values be restored to 227 steps, (which caused the alarm to come back in) until a course of action could be determined relative to clearing the alarm and closing out the PI. The supervisor returned the values for Control Banks A, B, and C to 227 steps and then returned computer points C0001A, C0002A, C0003A, C0006A, C0009A, and C0010A back in scan. Computer point C0019A was not returned back to scan.

Another MIG technician who was performing the PI researched the cause of the "Rod Insertion Low Limit" alarm. It was determined at approximately 1500 EST that the alarm was valid because of the setpoint tolerance of the alarm. During the time that the MIG technician was investigating the alarm, he notified Reactor Engineering of the problems encountered with the PI. Reactor Engineering and the MIG technician independently determined the cause of the alarm. The "Rod Insertion Low Limit" alarm is set at 10 steps above the calculated upper rod insertion limit. The calculated upper rod insertion limit for Control Banks, A, B, and C, at 100 percent power, was  $215 \pm$  two steps. Thus the new top of core value of 227 steps placed the rods within the  $225 \pm$  two steps setpoint of the "Rod Control Bank Limit Low" alarm. TS Change 89-15 changed the fully withdrawn position for shutdown and control banks from 228 steps to an interval of greater than or equal to 222 and less than or equal to 231 steps withdrawn, inclusive. However, the constants for the upper limit of rod insertion on the Insertion Limit Computer had not been revised as a result of changing the fully withdrawn position for the control banks. The Insertion Limit Computer initiates the "Rod Control Bank Limit Low" alarm if the conditions for the alarm exist.

At 1830 EST work was initiated to restore the Shutdown Bank D demand step counter indicator. The applicable postmaintenance testing was completed at 1904 EST and LCO 3.1.3.2.b.1 exited.

At 1935 EST, Operations commenced "backing out" of the PI by repeating the PI to raise the control rods from 227 steps to 229 steps withdrawn. These actions were completed at 1956 EST and the "Rod Control Bank Limit Low" alarm cleared. The "Rod Deviation and Sequence/NIS Power Range Tilts" alarm also cleared and compliance with SR 4.1.3.2 was no longer required.

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		YEAR	NUMBER	NUMBER					
	0151010131218	91	004	001	060112				

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

DESCRIPTION OF EVENT

During day shift on March 25, 1991, a MIG technician initiated Preventive Maintenance (PM) Task No. 050262000, "Main Control Room Computer Weekly Check." This weekly PM provides a routine check of MCR computer points that have been removed from scan. This PM was worked when possible by the technician over the next four days.

The PM directs the performer to investigate and determine the validity of each P-250 computer point that is out-of-scan. On March 28, 1991, the MIG technician noted that point C0019A was out-of-scan and verified that the P-250 computer was reading the proper input from the point C0019A field device. Since the point was out-of-scan a WR was written at 1030 EST to have the output from the field device checked.

At some point during the performance of the PM, the MIG technician contacted the Unit 2 UO who was on shift to determine if a WR had been written on the Unit 2 P-250 computer point C0019A. The MIG technician does not recall specifically telling the UO that the rod was out-of-scan. The UO does not remember the details of this conversation.

As required by the PM, the MIG technician recopied the "Removed From Scan List" and entered the computer point C0019A on this list. The reason the point was out-of-scan was noted on the list by the technician based on discussions she had heard concerning the problems encountered on March 21, 1991, "Deviation Alarm Keeps Returning." The MIG technician turned the WR into her supervisor towards the end of the shift on March 28, 1991. The supervisor initialed the WR at 1514 EST and then turned it into the Work Control Group.

During day shift on March 29, 1991, a Work Control Group evaluator took the WR to the MCR for evaluation by the SOS. The SOS raised a concern that having the P-250 computer point C0019A removed from scan made the "Rod Deviation Monitor" inoperable for position K-10 of Control Rod Bank C, Group 2. At 1142 hours, on March 29, 1991, Unit 2 entered the action of LCO 3.1.3.2. At 1145 EST, P-250 computer point C0019A was returned to scan and LCO 3.1.3.2 was exited.

As a result of the investigation of the event, a review of computer printouts from the P-250 for out-of-scan points was performed. The reviews indicate that on March 21, 1991, at 0738 EST, the P-250 printout did not list point C0019A as out-of-scan. The next printout that was obtained was from March 22, 1991, at 1736 EST. This printout indicated C0019A was out-of-scan. Additional printouts during the time frame of March 22-28, 1991, listed point C0019A as out-of-scan.



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Sequoyah Nuclear Plant Unit 2	01510101312101911	--	0	0	4	--	0	1	017101112

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

DESCRIPTION OF EVENT

There is no procedure or instruction that establishes a method for maintaining cognizance of inoperable P-250 computer points. Procedure 2-PI-OPS-000-023.1, "Modes 1-4 BOP UO Duty Station Turnover System Status Checklist," requires the UO to perform a P-250 Computer remove point review each shift as shift duties permit. The PI describes how to obtain the required computer printout and gives the following additional instruction: "WR any nuisance alarms. Refer to P-250 manual as needed." No further direction is given regarding this portion of the PI. There are no requirements to save the computer printouts from these reviews. The portion of the PI relating to the removal of P-250 computer points was not intended to be a method for Operators to maintain cognizance of inoperable P-250 computer points. This check was designed to allow timely and efficient correction of P-250 computer software problems. Over time operators had begun to use this check in attempt to maintain cognizance of inoperable P-250 points. The means were not provided to make this an effective method. P-250 computer out-of-scan logs are maintained in the MCR for Units 1 and 2. These logs are intended for use by MIG. Operators enter points that they remove from scan to assist MIG's efforts to correct P-250 problems. The log is not intended to be used for P-250 computer point configuration control and is not used for this.

There are no instructions or procedures that identify TS-related P-250 computer points. Numerous operators reviewed computer printouts that identified the computer point C0019A as being out-of-scan and it was not recognized that compliance with a TS SR was required.

During the investigation of this event, it was identified that the Precaution, Limitation, and Setpoint (PLS) document generated for SQN by Westinghouse Electric Corporation (W) had not been updated for the "Adjustable Upper Limit on Insertion Limit Computers," when the TS change was approved. The PLS was revised by W in support of TS Change 89-15, but the adjustable upper limit was not revised.

A problem evaluation report was initiated on March 26, 1991, by Reactor Engineering in response to the problems encountered with the performance of O-PI-NXX-088-001.0 on March 21, 1991.

CAUSE OF EVENT

The direct cause of this event was failure of the MIG computer technician and his supervisor to verify that P-250 computer points removed from scan were returned to their initial condition because of apparent oversight. The most significant contributing cause was that configuration control was not utilized during troubleshooting for the "Rod Deviation and Sequence/NIS Power Range Tilts" alarm by the MIG computer technician and his supervisor. Neither a procedure or a WR was used to take computer points out-of-scan and therefore to maintain configuration control.

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		0	0	4	0	1	0

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

CAUSE OF EVENT

The MIG computer technician's and supervisor's failure to maintain configuration control of P-250 computer points was the result of long standing informality in handling P-250 computer points. The MIG supervisor indicated that configuration control has never been utilized for software related work on P-250 computer points. MIG computer technicians performing maintenance on the P-250 computer have used configuration control for wire lifts and similar hardware related activities, but configuration control has not been maintained for P-250 points removed from scan.

Operations personnel did not detect the subject point being out-of-scan earlier because of lack of administrative control processes for TS related P-250 computer points. There are no procedures or instructions that identify TS related P-250 computer points.

The "Rod Deviation and Sequence/NIS Power Range Tilts" alarm not being addressed in O-PI-NXX-085-001.0 was caused by an inadequate technical review during initial preparation. The PI was derived from an existing maintenance instruction (MI) 21.3.085.02, "Functional Check of Rod Control Logic Cabinet," W recommendations, and another plant's procedures, none of which addressed the alarm. The MI requires cycling the rod control logic circuitry, verification of its proper operation, and is used to set the top-of-core position in the rod control logic circuitry before unit startup. The MI was issued in September 19 and is performed in Modes 3, 4, and 5. A review of the two performances of the MI for Unit 2 indicated that the top-of-core position was not set less than 228 steps. The technical reviews that were performed concentrated on reactivity concerns and the potential for protective feature actuations, which might result from the repositioning, but overlooked the "Rod Deviation and Sequence/NIS Power Range Tilts" alarm. If the top-of-core position had been set less than 228 steps prior to the performance of the PI in accordance with the software change process, the "Rod Deviation and Sequence/NIS Power Range Tilts" alarm would not have been received. This is an isolated case based upon discussions with personnel involved with the PI, and no further action is required.

Although unexpected alarms were received during the performance of the PI and reasonable possible explanations were provided for the alarms, the PI was continued. If the procedure had been stopped, backed out of (Control Bank C returned to its initial position), and further investigated to establish cause once the first alarm was received, the need to troubleshoot to clear the alarm on the P-250 might not have been necessary. Plant management's position, relative to procedure performance yielding unexpected results, is to safely terminate the procedure and fully analyze and definitively explain the unexpected results before resumption of the activity.

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Sequoyah Nuclear Plant Unit 2	0150100131218	91	0	0	0	0	1	0	2 OF 112

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

CAUSE OF EVENT

The causes of the Insertion Limit Computer not being updated are: 1) an inadequate review of the documentation supporting the TS change by the technical organization involved with the TS change, and 2) inappropriate action when it was identified that the PLS required updating before Instrument Maintenance Instruction (IMI) 85-RIL, "Control Bank Rod Insertion Limit and P/A Converter Channels," could be revised. The responsible technical organization did not identify that the PLS, which contains the required input for these alarms, had to be revised to support the TS change. IMI-85-RIL required a revision as a result of the TS change. The input to the IMI for the all rods out position is taken from the PLS. The appropriate action should have been to properly identify and track that a deficiency existed in the PLS and that it required an additional revision.

ANALYSIS OF EVENT

This event is being reported in accordance with 10 CFR 50.73, paragraph a.2.i.B as an operation prohibited by TS.

The monitoring of the rod position of full length rods is discussed in the Updated Final Safety Analysis Report (UFSAR) Section 7.7.1.3.2. There are two separate systems to sense and display control rod position, they are the rod position indicator (RPI) and the demand position indications system (DPI). Each system serves as a backup for the other. The RPI monitors each rod cluster control assembly position while the DPI counts pulses generated in the Rod Drive Control System to provide a readout of the demand bank position.

According to SOI-55-2M4 XA-55-4B, the "Rod Deviation and Sequence/NIS Power Range Tilt" alarm has five possible origins. They are NIS power range channels, rod sequence program, shutdown banks position, rod and bank position, and rod position. The setpoints associated with the origination of this alarm are also provided in the SOI.

Control Bank D was at 219 steps and Control Bank C was moved from 229 to 227 steps. The movement of Control Bank C resulted in the "Rod Deviation and Sequence/NIS Power Range Tilt" alarm since insertion of control banks are programmed for a specific sequence and at a specific overlap position. Insertion of Control Bank C should not have occurred until the required tip to tip distance between both Control Banks C and D was 128 steps. Thus, the "Rod Deviation Sequence/NIS Power Range Tilts" alarm came in because of a wrong sequence. The alarm cleared as a result of backing out of O-PI-NXX-085-001.0, which returned Control Bank C to its initial position of 229 steps and restored the required tip to tip of 128 steps between Control Banks C and D.

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

ANALYSIS OF EVENT

With the computer point C0019A out-of-scan on the P-250, the rod deviation alarm was inoperable for Control Bank C, Group 2, position K-10. There are 53 rod clusters in the core and there is a computer point for each rod cluster position. The computer points associated with the remaining rod cluster positions were not out-of-scan and were capable of monitoring the rod cluster movement and providing the necessary inputs into the P-250. The TS SR 4.1.3.2 requires the comparing of the DPI system and the RPI system at least once every four hours, if the rod deviation alarm is inoperable. The SR does not indicate the number of out-of-scan computer points that cause the alarm to be operable. Therefore, with one computer point used in the P-250 program being out-of-scan the "Rod Deviation and Sequence/NIS Power Range Trips" alarm is considered inoperable; however, there were 52 rod cluster P-250 computer points that were in scan and operable.

The SR also requires that the RPI be verified operable by comparing the RPI system and DPI system agree within 12 steps at least once every 12 hours. This SR is satisfied by performing procedure 2-SI-OPS-000-002.0, "Shift Log" every shift. A review of this procedure performed between March 21-29, 1991, indicated that the RPI and DPI systems were within agreement and operable.

Although the computer point C0019A, Control Bank C, Group 2, position K-10 was out-of-scan on the P-250 and SR 4.1.3.2 was not performed once every four hours, as required, the RPI and DPI were verified as being within 12 steps of one another every eight hours, and no significant movement of Control Bank C was performed during the time frame; therefore the event did not adversely affect the health and safety to the public.

CORRECTIVE ACTION

Immediate corrective action was to place computer point C0019A back into scan. In addition, the Operations Superintendent issued a memorandum to Operations and MIG personnel discussing the lessons learned from this event. MIG has developed and implemented a process to maintain configuration control when working on the P-250 computer points.

Since MIG personnel removed computer points from scan without informing Operations personnel in the MCR, discussions have been held with MIG personnel regarding the importance of maintaining communication with Operations and configuration control relative to removing points from scan on the P-250.



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CORRECTIVE ACTION

To aid in future assessment of the significance of P-250 data point anomalies, a list of TS-related P-250 computer points has been generated. The list of TS-related computer points will be incorporated into Technical Instruction (TI) 54, "Compliance Instruments," by September 1, 1991.

The existing administrative methods for removing, tracking, reviewing and correcting P-250 computer problems require review. A number of issues are being considered for the review and include the identification and tracking of P-250 computer problems, having Operations personnel maintaining cognizance of P-250 computer status, maintaining configuration control of P-250 computer points including computer points involving reactivity management, and correcting the P 250 computer problems quickly. The P-250 administrative controls will be reviewed and revised as necessary by September 20, 1991.

The performance of O-PI-NXX-085-001.0 was continued despite receipt of related alarms not anticipated by the procedure. Plant Management's position that evolutions will be safely terminated whenever unexpected or unanticipated results are received has been reviewed with the Operations Superintendent. This position includes correcting procedures as appropriate before the evolution is continued. This expectation applies to alarms that are not completely understood (i.e., the exact cause of alarm) and are not the results of unusual plant conditions (e.g., a normally operable piece of equipment that is inoperable). These expectations have been reviewed with Operations personnel.

The inadequate review of the documentation supporting the TS change focused on the effect the changes would have on reactivity and did not include a review of how the TS change affected the plant. Controls have been established to provide a focal point for reactivity management to ensure changes that could affect reactivity, obtain proper reviews. Site Standard Practice 12.54, "Reactivity Management Program", assigns the responsible organizations to oversee reactivity issues and state managements philosophy relative to the issue of reactivity. The PLS has been made a TVA design document and will be updated to reflect the correct value of the Low and Low-Low Rod Control Bank Limit alarms by July 19, 1991. To correct the inappropriate action, failure to properly identify and track the required PLS revision, as a result of the TS change, the TS change coordinator has been made aware of the importance of ensuring that documents requiring change are properly handled.

ADDITIONAL INFORMATION

No previous reportable events were identified that resulted from inadequate configuration control involving P-250 data points. However, LER 50-327/90019 reported an event where it was stated that a procedure failed to recognize a P-250-generated alarm as a TS compliance instrument. Corrective action taken for that event would not be expected to have prevented this occurrence. However, in light of this event, it has been concluded that additional attention needs to be placed on TS-related P-250 computer points. Current corrective action being established to address TS-related P-250 computer points is to generate a list of these points and incorporate this list into the appropriate procedures.



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COMMITMENTS

1. TVA will incorporate the list of 75 related computer points into TI-54 by September 1, 1991.
2. The P-250 administrative controls will be reviewed and revised, as necessary, by September 20, 1991.
3. The PLS will be revised to reflect the correct all rods out position by July 19, 1991.