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SUBJECT: LER 92-006-00:on 920616,discovered that max TS SR of 45 days for incore detector & core exit thermocouple instrumentation violated due to inappropriate action.Test responsibilities clarified & applicable TS reviewed.W/920716 ltr.

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TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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RIDS/ADDS

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DUKE POWER

July 16, 1992

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

Subject: Oconee Nuclear Site
Docket Nos. 50-269, -270, -287
LER 269/92-06

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report (LER) 269/92-06, concerning a violation of a Technical Specification surveillance requirement.

This report is being submitted in accordance with 10 CFR 50.73 (a)(2)(i)(B). This event is considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

J. W. Hampton
Vice President

/ftr

Attachment

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NRC FORM 366 (6-89)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WTH 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.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Oconee Nuclear Station, Unit 1	0 5 0 0 0 2 6 9	1 OF 0 8

TITLE (4) Technical Specification Surveillance Requirement For Incore Detector And Core Exit Thermocouple Instrumentation Violated Due to Inappropriate Action

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 NAMES	DOCKET NUMBER(S)
0 6	1 4	9 2	9 2	— 0 0 6	—	0 0	0 7	1 6	9 2		0 5 0 0 0
											0 5 0 0 0

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
N	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 1 0 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)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	20.405(a)(1)(iii)	X 50.73(a)(2)(i) (B)	50.73(a)(2)(viii)(A)	
	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
S. G. Benesole, Safety Review Manager	AREA CODE 8 0 3 8 8 5 - 3 5 1 8

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

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

ABSTRACT

At 0900 hours on June 16, 1992, with Unit 1 at 100 percent full power, it was discovered that the maximum Technical Specification surveillance requirement of 45 days had been exceeded by two days for the Unit 1 Incore Detector and Core Exit Thermocouple Instrumentation. The Unit 1 Systems Reactor Engineer and Operations Test Supervisor discovered the error while updating the surveillance schedule program. The surveillance was last performed on April 30, 1992 and was due again no later than June 14, 1992. The results of the completed test indicated that the instrumentation was operable during this time period. The root cause for this event is inappropriate action, no action taken when required because the need was not recognized. Significant contributing causes were management deficiency; 1) deficient communication, inadequate groups interface and 2) training, less than adequate training given. The major corrective actions taken were the clarification of test responsibilities and review of the applicable Technical Specification requirements.

BACKGROUND

The Incore Monitoring System [EIIS:IQ] provides neutron flux detectors to monitor core performance. Incore self-powered neutron detectors measure the neutron flux in the core to provide a history of power distributions during power operation. Data obtained provides power distribution information and fuel burnup data to assist in fuel management decisions. The plant computer provides normal system readout and a backup readout system is provided for selected detectors. This system has no safety actuation functions and provides indication only. However, Technical Specification 3.5.4 (Incore Instrumentation) requires incore detectors to be operable at or above 80 percent of power allowable for the existing reactor coolant pump combination.

Core Exit Thermocouple (CET) instrumentation [EIIS:IM] is a component of the Inadequate Core Cooling Monitoring System which is a subcomponent of the Accident Monitoring Instrumentation System. The CET instrumentation consists of two trains which have 12 qualified core exit thermocouples each which are used to calculate and display thermal conditions across the core. This system not only has the ability to identify existing degraded conditions, but also provides anticipatory alarms of imminent degraded conditions based on the status of equipment and systems. This defense-in-depth approach enables the operator to respond and prevent degraded core cooling conditions. Technical Specification 3.5.6 (Accident Monitoring Instrumentation) requires that two out of two channels of the qualified core exit thermocouple trains (5 out of 12 CETs per train) be operable whenever the Unit is above hot shutdown conditions.

Section 4 of the Technical Specification (Surveillance Requirements) specifies that the Incore and Core Exit Thermocouple instrumentation surveillance is to be performed monthly, with a maximum allowable frequency between surveillances of 45 days.

Currently, procedure PT/O/A/0302/06 (Review and Control of Incore Instrumentation Signals) is used to verify compliance with Technical Specifications 3.5.4 and 3.5.6 operability requirements for incore and CET monitoring instrumentation.

The method used to schedule and track surveillance performance and completion is the computer-based Preventive Maintenance Report. This program provides a means to determine when a surveillance was last performed, the next due date, and the latest acceptable (grace period) completion date. The surveillance completion date is entered into the program where it becomes the last performed date. The Operations Test Supervisors use the last surveillance completion date to schedule the next surveillance due date.

EVENT DESCRIPTION

On November 1, 1991, Duke Power Company reorganized and the Performance section was divided into two groups. The Performance Reactor Engineers reported to the Systems Engineering group and the Performance Test Supervisors reported to the Operations group. Performance Technicians had responsibility for performing PT/0/B/0302/06 (Review and Control of Incore Instrumentation Signals). The Test Supervisor scheduled the test and notified the technicians when the test was due. The Reactor Engineers were responsible for reviewing the completed procedure and signing the "Procedure Completion Approved" portion of the Procedure Process Record. At this time there was no Technical Specification frequency requirement associated with this test procedure.

At the time of the reorganization a meeting was held between the Systems Reactor Engineers and Operations Test Supervisors to discuss Procedures and who would take responsibility for them. During this discussion it was determined that the Systems Reactor Engineers would take responsibility for performing PT/0/B/0302/06, while the Operations/Performance Technicians would continue to have responsibility for performing the Technical Specification surveillance frequency related procedure, PT/0/A/0302/04 (Backup Incore Detector System Verification).

On November 6, 1991, PT/0/B/0302/06 was completed for the last time by the Operations Test Technicians.

From November 25, 1991, to January 30, 1992, the Unit 1 Systems Reactor Engineer, performed the PT/0/B/0302/06 on schedule. For the months of November and December the Operations Test Supervisor informed him of the surveillance due dates. Towards the end of December, during a discussion between the Unit 1 Systems Reactor Engineer and the Operations Test Supervisor it was decided that Operations would no longer schedule the surveillance or notify the Unit 1 Systems Reactor Engineer when the surveillance was due. The surveillance associated with PT/0/A/0302/04 continued to be performed on schedule during this time period.

On March 2, 1992, Procedures, PT/0/B/0302/06 and PT/0/A/0302/04 were combined to form PT/0/A/0302/06. The Technical Specification frequency requirements that were applicable to PT/0/A/0302/04 were transferred to the revised procedure, PT/0/A/0302/06. The Systems Reactor Engineers continued to maintain responsibility for performing the revised procedure, PT/0/A/0302/06.

From March 6, 1992 to April 30, 1992, PT/0/A/0302/06 was performed in accordance with the Technical Specification frequency requirements by the Unit 1 Systems Reactor Engineer without any due date notification from the Operations Test Supervisor. The test was due again on May 30, 1992, with a maximum acceptable date for completion of June 14, 1992.

On May 26, 1992, Unit 1 was at cold shutdown conditions for repair to the 1A2 Reactor Coolant Pump first and second stage seals. The Unit 1 Systems Reactor Engineer stated that he had intended to begin the test on this date to ensure the due date was met. A condition, as stated in the test procedure, for performing the test is that the Unit must be at greater than 10 percent Full Power for at least 30 minutes. The test was delayed because of the Unit status.

On June 9, 1992, Unit 1 was returned to 100 percent Full Power.

On June 10, 1992, Unit 1 power was reduced to 80 percent Full Power. As stated by the Unit 1 Systems Reactor Engineer, it is preferable to run the test when the Unit is at a steady state condition. He delayed performing the test for this reason.

On June 11, 1992, Unit 1 was returned to 100 percent Full Power.

June 14, 1992, was the latest acceptable date to complete the test.

On June 15, 1992, the Unit 1 Systems Reactor Engineer began conducting the subject test with Unit 1 at a 100 percent full power.

On June 16, 1992, the Unit 1 Systems Reactor Engineer completed the subject test. The test results concluded that the instrumentation was operable. He then notified the Unit 1 Operations Test Supervisor that the test was complete. During the process of updating PMRPT with the new procedure completion date, the Unit 1 Systems Reactor Engineer and the Operations Test Supervisor discovered that the "latest" acceptable completion date had been exceeded by 2 days. The Unit 1 Systems Reactor Engineer initiated a problem investigation report to address this event.

CONCLUSIONS

The root cause for this event is improper action, no action taken when required because the need was not recognized. The Unit 1 Systems Reactor Engineer, who was responsible for performing the test, was not familiar with the associated Technical Specification frequency maximum interval requirement. If the Unit 1 Systems Reactor Engineer would have been familiar with the Technical Specification requirement this event may have been avoided.

One of the contributing causes to this event was management deficiency, deficient communication, inadequate groups interface. Around November 1, 1991, a meeting was held to discuss procedure and test responsibilities for the Systems Reactor Engineering and Operations Test groups to ensure that all required tests would continue to be properly performed. During this meeting it was decided that the Systems Reactor Engineers would take responsibility for performing PT/0/B/0302/06 (Review and Control of Incore Instrumentation Signals). The Systems Reactor Engineer Supervisor stated

that it was also decided that the Operations Test Supervisors would continue to maintain this test procedure on the Preventive Maintenance Report (PMRPT), schedule the tests, notify the Systems Reactor Engineers when the tests were due, and update the PMRPT. However, the Operations Test Supervisors did not understand that they would be responsible for notifying the Systems Reactor Engineers when the tests were due. The Operations Test Supervisors did, however, continue to notify the Systems Reactor Engineers of the tests due dates, except for the Unit 1 Operations Test Supervisor. Generally, the Operations Test Supervisors continued to inform the Systems Reactor Engineers of the test due dates as a result of a "self-imposed" responsibility. The communications during this meeting were not documented, therefore it can not be determined how well these responsibilities were communicated. It is clear that the communication was not adequate to ensure that the Operations Test Supervisors would continue to be responsible for scheduling the test and notifying the Systems Reactor Engineers when the tests were due.

Another contributing cause of this event was a less than adequate verbal communication between the Unit 1 Systems Reactor Engineer and the Unit 1 Operations Test Supervisor. Near the end of December 1991, a conversation took place between these two individuals where the Operations Test Supervisor understood that he would no longer need to inform the Systems Reactor Engineer when the test was due. The Systems Engineer stated that he did not remember the conversation very well, but he is sure that he did not intend to convey that message. This conversation occurred prior to the Technical Specification frequency requirements becoming applicable to the subject test. If this conversation had been properly communicated, the Unit 1 Test Supervisor may have continued to track the test and notified the Unit 1 Systems Reactor Engineer prior to exceeding the maximum surveillance completion date.

Another contributing cause of this incident was management deficiency, less than adequate training of the Unit 1 Systems Engineer on the Technical Specification surveillance frequency requirements. According to the Systems Reactor Engineer Supervisor, there was no communication put out to the Reactor Engineers that the Technical Specification surveillance frequency requirements are now applicable for this test. He assumed that the Reactor Engineers were either already familiar with those requirements or would, on their own initiative, become familiar with them if they were not. The Unit 1 Systems Reactor Engineer stated that he was not familiar with the Technical Specification frequency requirements. He simply knew that the test was due on a monthly basis from past experience. It also appears that the Engineer did not recognize a need to be familiar with those requirements because he was dependent on the Unit 1 Test Supervisor to ensure that the test was performed within the required time frame. It is a good work practice for a supervisor to ensure that his personnel have the knowledge, skills, and tools to properly do the task prior to assigning the task to them. If the Unit 1 Systems Reactor Engineer would have been familiar with the Technical Specification frequency requirements this event probably would not have occurred.

Behavioral factors that influenced the decisions of the Unit 1 Systems Reactor Engineer were:

1. Cognitive overload; The Unit 1 Systems Reactor Engineer had an unusually heavy load of priority work during the test's due date time frame.

2. Habit intrusion; The Unit 1 Systems Reactor Engineer was use to performing the test around the 29th of each month, but could not conduct the test during that time frame on this occasion because the Unit was shutdown.

3. Lack of specific knowledge; The Unit 1 Systems Reactor Engineer was unaware of the Technical Specification frequency criteria and the appropriate actions to take when the test is delayed due to the Unit status.

4. Insufficient degree of attention applied; The Unit 1 Systems Reactor Engineer did not acquire the knowledge of the test's maximum due date although he knew that this information was available.

A review of previous events for the last two years shows that this is not a recurring event.

This event did not involve a component failure or malfunction, therefore it is not NPRDS reportable. Also, this event did not result in the release of any radioactive materials, any radiation exposures, or personnel injuries.

CORRECTIVE ACTIONS

Immediate - NONE

Subsequent

The following corrective actions to prevent recurrence of this event was properly communicated to all Operations Test Supervisors and Systems Reactor Engineers:

1. The Operations Test Supervisors shall be responsible for tracking the completion of PT/0/A/0302/06, for updating PMRPT, and for notifying the Systems Engineers Reactor Group when the procedure is due to be performed. Including notifying the Systems Engineers Reactor Group if and when the normal 30 day frequency has expired as well as advise as to the 45 day maximum interval date.

2. The Systems Reactor Engineers are responsible for performing and verifying the procedure on a monthly basis and for notifying the Operations Test Supervisors of the date of the procedure verification. In the case of planned absences, it is the responsibility of the Systems Reactor Engineers to either perform the procedure early or turnover the responsibility to their Unit backup.

3. If the 45 day maximum time interval expires prior to Unit startup, the Systems Reactor Engineer must perform the procedure and verify it prior to the Unit exceeding 80 percent of the power allowable for the existing Reactor Coolant Pump combination. Likewise, if the 45 day limit will be exceeded soon after startup, the same requirement is true. If the Unit is above 80 percent of the allowable Reactor Coolant Pump combination when the 45 day limit is exceeded, the operability of the incore detectors will have to be verified by the procedure immediately or power will have to be reduced below 80 percent of the allowable Reactor Coolant Pump combination within 8 hours.

4. The Unit 1 Systems Reactor Engineer was trained on the applicable Technical Specification requirements. In addition, the Systems Reactor Engineers Supervisor emphasized to the Engineer to have a more "questioning attitude" when there is doubt as to what appropriate actions to take.

Planned

1. The Systems Reactor Engineering Group will revise PT/0/A/0302/06 to include an enclosure which will provide a place to record the last procedure completion date. The Systems Reactor Engineer responsible for performing the procedure will update the enclosure each time the procedure is completed.

2. The Systems Reactor Engineering Group will pursue a revision to the Operations' "Operation at Power" procedure to include a step to verify the operability of the incore detector system prior to exceeding 80 percent of the allowable power for the existing Reactor Coolant Pump combination.

SAFETY ANALYSIS

The Incore Instrumentation System is not a safety-related system. This system is not required to be operable below 80 percent of the allowable power for the existing Reactor Coolant Pump operating combination. Data obtained from this system is used to verify that the actual core power

distributions for a fuel cycle are in reasonable agreement with the predicted power distributions for the cycle. The purpose of this comparison is to verify that the design methods used to generate cycle specific operating data are acceptable.

The Core Exit Thermocouple (CET) Instrumentation is a safety-related system consisting of 24 qualified CETs. This system consists of two trains, with each train having 12 qualified thermocouples. The CETs provide a direct measurement of Reactor Coolant System (RCS) temperatures at the core exit and also feed into the core subcooled margin monitors. Core subcooled margin is indicated on both Inadequate Core Cooling plasma displays, the Operator Aid Computer Video, and a digital control board meter.

RCS subcooled margin is an important parameter in the mitigation of certain accidents. During a small break loss of coolant accident, the operator is instructed to trip the Reactor Coolant Pumps on a loss of the subcooled margin. During a steam generator tube rupture accident, the operator uses the subcooled margin to assist in controlling the primary to secondary pressure difference while the plant is being cooled down. If the core exit subcooled margin was not functioning, the operators would still be able to use the RCS loop subcooled margin indications to perform these functions.

The CETs also play an important role in the mitigation of certain beyond design basis accidents. The onset of inadequate cooling conditions is indicated by superheated CET temperatures. Thus, the operators use the CETs as an entrance condition to the inadequate cooling portion of the Emergency Operating Procedure. If the CETs are unavailable, the hot leg temperature measurements would provide another indication of superheated conditions within the RCS. However, due to their location, the loop indications are not as effective in monitoring core conditions as the CETs. In addition, the reactor vessel head level and wide range hot leg level indications are useful in assessing whether or not adequate cooling exists.

Although the test for these systems was completed two days past the required interval, the results indicated that the instruments were operable. Thus, this instrumentation would have been available if an accident had occurred. Also, if the CETs had failed during the calibration interval, it is very likely that the operators would have recognized significant failures in the system through various control room indications for the subcooled margin. It should also be noted that in addition to the 24 qualified CETs, 23 non-qualified CETs exist. It is likely that these thermocouples would also be available during an accident and could be used if the qualified thermocouples were unavailable.

In conclusion, it was determined that the health and safety of the public was not compromised by this event. Also, this event did not include any release of radioactive materials, radiation exposures, or personnel injuries.