

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

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TITLE (4)
Technical Specification Snubber Surveillance Interval Exceeded Due To An Inadequate Process

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 NAME	DOCKET NUMBER(S)
07	16	98	98	04	00	08	17	98		05000

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (Check one or more of the following) (11)								
POWER LEVEL (10)		<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)					
		<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)					
		<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)					
		<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)						
		<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)						
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)							

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME J.E. Burchfield, Regulatory Compliance Manager		AREA CODE (864)	885-3292

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

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (f yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO				

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

On July 16, 1998, as part of Oconee's Recovery Plan for Technical Specification (TS) Initiative, it was recognized that some TS snubber surveillances were incorrectly coded in the scheduling software. On July 22, 1998, with Units 1, 2, and 3 at 100% full power, a review of past snubber surveillance dates on all three Units determined that Unit 2 had exceeded the snubber surveillance frequency from approximately February 13, 1998 until the unit was shutdown for a refueling outage on March 13, 1998. The surveillance was satisfactorily completed on March 18, 1998. The root cause of this event is a weak process to control changes to the frequency in the scheduling software. A contributing cause is the potentially confusing wording of several TS. Corrective actions include process enhancements and training.

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Background

Snubbers, both hydraulic and mechanical, are restraining devices used to control the movement of piping and equipment during abnormal dynamic conditions such as earthquakes, turbine trips, safety/relief valve discharges and rapid valve closure. The design of the snubber allows for free thermal movement of a component or pipe during normal operating conditions.

Technical Specification (TS) 4.18 requires each Reactor Coolant System and other safety related system snubber to be visually inspected every 18 months near the beginning and the end of an outage. TS 4.18.3 and 4.18.5 further require that a minimum of 10% of the total population of safety related hydraulic and mechanical snubbers shall be functionally tested. The current TS frequency for the functional tests is every 18 months. Prior to February 1998, the frequency was "Refueling Outage". TS 4.0.2 defines both the 18 month and "Refueling Outage" surveillance frequencies to have a maximum interval of 22 months 15 days.

Description of Event

In January 1998, in preparation for the upcoming Oconee Unit 2 EOC-16 Refueling Outage, Electrical Engineering personnel were reviewing testing and calibration requirements to assure that all Technical Specification (TS) requirements would be met. Their review identified several calibrations that would exceed their maximum frequency prior to the March 13, 1998, scheduled start for the outage.

On January 15, 1998, Duke submitted a TS change to the NRC to request a one time extension of these surveillances to support the scheduled refueling outage date of March 13, 1998. Subsequently, the site evaluated other surveillances, and, on January 19, 1998, the Mechanical Systems Engineering section and the Operations Test section recognized that several valve and heat exchanger Periodic Tests would also exceed their allowed interval prior to the scheduled outage start.

Discussion of these additional tests between Oconee and NRC personnel ultimately led to the recognition of a literal compliance issue relating to refueling outage frequency surveillances being performed at periods other

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than refueling outages. This issue was identified in Problem Investigation Process (PIP) report 0-098-0464 and reported in LER 269/98-03 on March 2, 1998.

In February 1998, a number of TS were revised to indicate surveillance intervals of "18 months" rather than "refueling outage". This change did not affect the maximum allowed interval. Other corrective actions were identified to change procedures to comply with the revised TS.

PIP report 0-098-0233 was also generated to determine the cause and corrective actions for the incomplete identification of surveillances needing relief in January of 1998. The root causes were related to a number of poorly interfaced directives and use of several different scheduling tools. In addition, the lack of formal guidance for performing "look-aheads" for future outages when scheduled refueling outages change and the controls over additions to the surveillance program were contributing causes.

Due to a number of surveillance issues, Oconee Management initiated a Recovery Plan Initiative for Technical Specifications that specifically focused on weaknesses in tracking and scheduling of the TS surveillance program. Appropriate corrective actions from PIPs including 0-098-0233 and 0-098-0464 were included in the Recovery Plan Initiative for Technical Specifications.

As a corrective action from the Recovery Plan Initiative, a "Required Surveillance Items Report" was developed and put in place on April 21, 1998, by Work Control Technical Support to be used by Outage Management. This report provides Outage Management with the capability to:

- a. identify all date-driven surveillances to be performed should a forced outage occur, and
- b. generate a "look-ahead" list of date-driven items that could require a unit shutdown if the next surveillance or commitment date occurred prior to a proposed date when rescheduling an outage.

Using this tool, Work Control personnel prepared a list of Technical Specification (TS) surveillances affected by a planned change in the start

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date of the next refueling outage for Unit 3. This list was submitted to appropriate personnel to begin the necessary reviews, evaluation, and technical justifications. The list was submitted to management on June 22, 1998, in order to request extension of the maximum allowed frequency to support this revised refueling outage date.

On July 16, 1998, Oconee submitted a TS Amendment request to the NRC for a one time extension for the TS surveillance tests identified.

However, in an on-going activity related to the Recovery Plan Initiative for TS, discussions between Work Control personnel and an In-Service Testing engineer revealed that some surveillances were coded in the scheduling tool as "condition-based" rather than "date-driven". Due to a questioning attitude, the Work Control personnel generated an additional search for "date-driven" surveillances that may have been incorrectly coded as "condition-based" surveillances outside of In-Service Testing. A query of all Unit 3 related surveillance testing activities was run based on dates last performed.

The query identified that snubber surveillances required by TS 4.18 were coded in the scheduling software as "condition-based" rather than "date-driven". At 1505 hours, on July 16, 1998, it was recognized that use of this code for these surveillances was incorrect. Considering the dates these surveillances were last performed, the maximum interval would be violated on August 26, 1998, unless an extension was requested and granted. This was classified as a near-miss for the Unit 3 surveillance. PIP 0-098-3595 was initiated on July 17, 1998, to document the near-miss, and request a root cause analysis.

On July 20, 1998, Oconee submitted an additional TS Amendment request to the NRC for a one time extension for the Unit 3 snubber functional tests required by TS 4.18.

As part of the PIP process, an evaluation was initiated to determine if TS 4.18 surveillances had been missed in the past for Unit 1, 2 and 3. The evaluation reviewed TS 4.18 snubber surveillance history back to 1982 for all three units. The evaluation identified that Unit 2 surveillances required by TS 4.18.3 and 4.18.5 had exceeded the maximum allowed snubber surveillance interval by 1 month prior to the last Unit 2 refueling outage.

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These TS requirements are for snubber functional tests on a sample (minimum of 10%) of mechanical and hydraulic snubbers. Therefore, the Unit 2 snubbers were technically inoperable from approximately February 13, 1998, until the unit was shutdown for the 1998 refueling outage (2EOC16) on March 13, 1998. The surveillance was satisfactorily completed on March 18, 1998.

An investigation into the cause of the Unit 2 missed TS surveillance interval was performed. Information obtained by the root cause analysis team for the Unit 3 near-miss was utilized in this investigation. The discovery of the missed (late) Unit 2 surveillance was a result of the investigation of the Unit 3 TS near-miss prompted by actions taken under the TS Recovery Plan Initiative.

It was discovered that Engineer A, assigned lead responsibility for the snubber test program, submitted a Preventative Maintenance (PM) Action Request Change Form on September 15, 1997, to change the frequency of snubber functional surveillance tests from every 18 months (date-driven) to at least once per refueling outage (condition based). Engineer A has stated in interviews that his basis for the change was the wording in TS 4.18, which indicated that snubber functional tests were to be performed during refueling outages. However, TS 4.0.2 indicated that for Refueling Outage the maximum interval is 22 months, 15 days.

In accordance with directives in place at the time, the PM Action Request Form was reviewed for completeness by a PM Living Program Coordinator in Engineering. It was then reviewed and input into the Work Management System (WMS) by a Work Control Technical Specialist. Applicable directives did not require a review of the technical adequacy of the information on the form or approval of the change request by Engineering supervision and no other reviews were performed.

Conclusion

The root cause of the Unit 2 missed Technical Specification (TS) surveillance interval is an inadequate process for control of changes to data (including surveillance frequency) in the surveillance program.

A contributing cause for this event is the potentially confusing wording of several TS. These TS used wording (e.g., "at least once every Refueling

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Outage") that implied that the associated surveillance was "condition-driven" rather than "date-driven". Duke personnel submitted these TS over a number of years without adequate recognition of the potential for misinterpretation of the requirements. The Duke Energy submittal of February 1998 and the Improved TS address the issue by more clearly stating the frequency associated with the surveillances.

Engineer A misinterpreted the wording of TS 4.18. Engineer A has several years of experience in snubber testing. However, he was not adequately aware of the detailed wording of TS 4.0.2, which clearly stated a maximum surveillance interval of 22 and 1/2 months. Therefore, he did not properly apply that wording to TS 4.18.

However, appropriate barriers must exist to prevent inaccurate interpretation by a single individual from causing non-compliance with TS and other requirements. In this case, the existing directive (at the time the change was initiated) allowed changes of frequency of surveillances and PMs in the scheduling tool without additional or appropriate levels of technical review and approval. Therefore, as stated above, the root cause is an inadequate process to control surveillance changes.

Following the TS revision of February 1998, the TS revision process called for reviews and procedure changes as needed to bring programs and procedures in compliance with the changed TS provisions. These reviews would have been expected to identify that the snubber surveillances, having been changed to condition based, were not in compliance with the revised TS. Therefore, it would have been expected that the Unit 3 surveillance interval would have been revised in time to assure compliance prior to the next due date of August 26, 1998. However, when the problem was discovered in mid-July, Engineer A had not yet been made aware of the TS revision. Additionally, the "Required Surveillance Items Report" used by Work Control to identify the "date-driven" surveillances to be included in the one-time extension request for Unit 3 would have been identified on the initial list had it not been earlier changed to a "condition-driven" surveillance.

Therefore, the root cause analysis also identified a weakness in the process for exigent TS revisions. It did not adequately ensure all appropriate awareness notifications and reviews were completed in a timely manner after submittal. Follow-up awareness notifications and reviews did

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not communicate the purpose and intent of the technical specification change to all appropriate personnel. Therefore, Engineer A remained unaware of the TS surveillance interval change until questioned during the root cause investigation. A repeat event on Unit 3 was averted due to the questioning attitude of Work Control personnel as part of the Recovery Plan Initiative.

A historical search of reportable events over the last two years indicated several problems with TS surveillance controls. LER 269/96-05 involved the failure to add a new snubber to the functional test procedure due to deficient work practices. LER 269/98-01 involved the failure to add two new valves to the TS surveillance program due to personnel error and a weak process to track such additions. LER 269/98-03 addressed refueling surveillances that were performed at times other than refueling outages. Due to the recurring nature of those events, Oconee Management recognized the need for stronger corrective actions and initiated the Recovery Plan Initiative for TS. Corrective actions from that Initiative contributed to the identification of the deficiency in this LER.

This event did not result in personnel injuries, radiation overexposures, or releases of radioactive materials. There were no equipment failures associated with this event.

CORRECTIVE ACTION:**Immediate:**

1. A Request for Technical Specification Amendment (Snubber Functional Test One Time Extension for Unit 3), was submitted to the NRC on July 20, 1998.
2. A past operability was performed for Units 1, 2, and 3, which identified the missed Unit 2 surveillance.

Subsequent:

1. Engineering submitted a frequency change request to Work Control to reinstate a maximum surveillance interval of 22 and 1/2 months for snubber surveillances per TS 4.18.3 and 4.18.5.

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2. Additional corrective actions from the Recovery Plan Initiative for TS revised the surveillance frequency change process to require additional technical reviews and approvals. The implementing directive was in review at the time this missed surveillance was discovered and has since been approved.

Planned:

1. Define and implement an improved process for awareness notifications and reviews for exigent or emergency TS revisions. The improved process should assure that awareness notifications and reviews ensure all appropriate personnel in the affected groups are notified of the content, purpose, and intent of the revision in a timely manner after submittal.
2. Perform an assessment of recent changes to the surveillance process, as well as past events associated with missed surveillances. Implement additional enhancements to the surveillance process based on the results of this analysis.

Planned corrective actions 1 and 2 are considered to be NRC Commitment Items. These are the only NRC Commitment items contained in this LER.

SAFETY ANALYSIS:

This event involved exceeding the Technical Specification (TS) surveillance interval for the 10% functional testing of hydraulic and mechanical snubbers on Unit 2. The visual inspections were performed within the required TS interval with no deficiencies noted. The functional testing was performed approximately 1 month past the maximum allowed TS interval. The snubbers were inspected and the required sample tested satisfactorily. Considering the inspections and testing it is not likely the snubbers would have failed to perform their functions if they had been needed during an accident condition. Therefore, the health and safety of the public was not affected by this event.