



**System  
Energy**

System Energy  
P.O. Box 756  
Port Gibson, MS 39150  
Tel 601 437 6470

John G. Cesare, Jr.  
Director  
Nuclear Licensing

February 15, 1990

U.S. Nuclear Regulatory Commission  
Mail Station P1-137  
Washington, D.C. 20555

Attention: Document Control Desk

Gentlemen:

SUBJECT: Grand Gulf Nuclear Station  
Unit 1  
Docket No. 50-416  
License No. NPF-29  
Update on Failure to Retest  
Isolation Dampers Following  
Maintenance  
LER 89-015-01  
AECM-90/0033

Attached is Licensee Event Report (LER) 89-015-01 which is a final report.

Yours truly,

JGC:cg  
Attachment

cc: Mr. D. C. Hintz (w/a)  
Mr. T. H. Cloninger (w/a)  
Mr. R. B. McGehee (w/a)  
Mr. N. S. Reynolds (w/a)  
Mr. H. L. Thomas (w/o)  
Mr. H. O. Christensen (w/a)

Mr. Stewart D. Ebnetter (w/a)  
Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region II  
101 Marietta St., N.W., Suite 2900  
Atlanta, Georgia 30323

Mr. L. L. Kintner, Project Manager (w/a)  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Mail Stop 14B20  
Washington, D.C. 20555

9002230191 900215  
PDR ADOCK 05000416  
S PDC

11  
IER22

**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1) Grand Gulf Nuclear Station - Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 4 1 6	PAGE (3) 1 OF 0 5
--	--------------------------------------	----------------------

TITLE (4)  
Update on Failure to Retest Isolation Dampers Following Maintenance

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		
1	0	3	0	8	9	8	9	0	NA		
1	0	3	0	8	9	8	9	0	0 5 0 0 0 0		

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)				
POWER LEVEL (10) 1 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(e)	<input type="checkbox"/> 90.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	<input type="checkbox"/> 20.408(a)(1)(i)	<input type="checkbox"/> 90.38(c)(1)	<input type="checkbox"/> 90.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)	
	<input type="checkbox"/> 20.408(a)(1)(ii)	<input checked="" type="checkbox"/> 90.38(c)(2)	<input type="checkbox"/> 90.73(a)(2)(vii)		
	<input type="checkbox"/> 20.408(a)(1)(iii)	<input type="checkbox"/> 90.73(a)(2)(ii)	<input type="checkbox"/> 90.73(a)(2)(viii)(A)		
	<input type="checkbox"/> 20.408(a)(1)(iv)	<input type="checkbox"/> 90.73(a)(2)(iii)	<input type="checkbox"/> 90.73(a)(2)(viii)(B)		
<input type="checkbox"/> 20.408(a)(1)(v)	<input type="checkbox"/> 90.73(a)(2)(iv)	<input type="checkbox"/> 90.73(a)(2)(ix)			

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME Ronald Byrd / Licensing Engineer		AREA CODE 6 0 1 4 3 7 - 2 1 8 2	

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
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO				

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

During a special review of stroke time data on October 30, 1989, no data or evidence could be found for a stroke time test that was required to be performed following maintenance on the Bettis actuator for isolation damper QSZ51F001. Further investigation of other Bettis actuator maintenance revealed six similar cases of missing retest documentation. It is concluded that the retests were not performed prior to returning the isolation dampers to operable status.

The failure to perform the stroke time tests is attributed to personnel error with programmatic deficiencies as contributing factors. Neither maintenance personnel nor licensed operators ensured that the post-maintenance stroke time tests were performed as required by plant procedures. The repetitive task program was not fully effective in that the tasks were not subject to a consistent, documented retest review process. A new computer data field has been added to the repetitive task work orders to indicate whether or not a retest is required. If a required retest is indicated, then a form will be included in the work package to perform and document the retest. Initially, retests for each task will be determined prior to performance of the task. The retest applicability determination will remain constant unless a change is approved in accordance with the repetitive task program procedure.

It was subsequently determined that all of the subject isolation dampers had closure times within the maximum limit of 4 seconds. Therefore, there was no reduction of the safety functions provided by the components.



# LICENSE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Grand Gulf Nuclear Station	DOCKET NUMBER (2)  08000416	LER NUMBER (3)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		89	015	01	02	OF	05

TEXT of case report is required, see instruction NRC Form 890 (17)

### A. Reportable Occurrence

During a special review of stroke time data on October 30, 1989, no data or evidence could be found for a stroke time test that was required to be performed following maintenance on the Bettis actuator for isolation damper QSZ51F001. Further investigation of other Bettis actuator maintenance revealed six similar cases of missing retest documentation. It is concluded that the retests were not performed prior to returning the isolation dampers to operable status as required by Technical Specifications 4.0.5, 4.6.4.1, 4.6.6.2.a and 4.7.2.d.2. This situation is reported pursuant to 10CFR50.73(a)(2)(i)(B).

### B. Initial Conditions

The plant was operating at 100 percent power at the time of discovery.

### C. Description of Occurrence

Safety-related Bettis actuators in service at Grand Gulf Nuclear Station are on a five year rebuild frequency. Periodic maintenance tasks cards are issued to accomplish these tasks. Since 1984, Bettis actuators on thirty-nine safety-related valves/dampers have been rebuilt under this program. During a review of stroke time data for damper QSZ51F001, which had been rebuilt during RFO3, no data or evidence could be found for a stroke time test that was required to be performed prior to returning it to operable status. However, a stroke time test had since been performed by the quarterly surveillance required by Technical Specification 4.0.5 which demonstrated that the damper closing time was within the 4 second limit.

An investigation was performed to determine if there were similar situations on other components. The investigation revealed that six additional dampers with rebuilt Bettis actuators had not been stroke time tested prior to restoring the dampers to operable status. The subject dampers are as follows:

Dampers	Function	Date Work Completed	Date Tested
QSZ51F001	Control Room Fresh Air Isolation	4-11-89	6-3-89
QSZ51F002	Control Room Fr sh Air Isolation	4-12-89	6-3-89
QSZ51F004	Control Room Fresh Air Isolation	4-12-89	6-3-89
QSZ51F011	Control Room Fresh Air Isolation	4-09-89	6-3-89
Q1T41F006	Secondary Containment Isolation	4-22-89	8-18-89
Q1M41F015	Drywell Isolation	4-19-89	10-31-89
Q1M41F016	Drywell Isolation	4-19-89	10-31-89

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Grand Gulf Nuclear Station	DOCKET NUMBER (2)  0 5 0 0 0 4 1 6	LER NUMBER (3)			PAGE (3)	
		YEAR 8 9	SEQUENTIAL NUMBER - 0 1 5	REVISION NUMBER - 0 1		

TEXT (if more space is required, see additional NRC Form 204's) (17)

A review was conducted to ensure that stroke time tests on these components were current. It was determined on October 31, 1989 that all had been tested since the actuator rebuild with the exception of two drywell isolation dampers, Q1M41F015 and Q1M41F016. These two dampers were rebuilt during RFO3 and are normally tested only during Operational Condition 4, Cold Shutdown. A Limiting Condition for Operation was entered for the two dampers pending a stroke time test. The test was then performed on October 31, 1989, approximately one hour after discovering that the dampers had not been retested. The test verified that the dampers closed within the 4 second time limit.

The following reviews were conducted to provide assurance that safety related components subject to periodic maintenance were currently retested.

- o Safety-related maintenance task cards performed within the last 4 months were reviewed against the applicable surveillance completion dates. Tasks performed after the surveillance completion dates were further reviewed to ensure that retest requirements were met.
- o Safety-related components subject to surveillance testing only during Operational Condition 4, Cold Shutdown, were investigated to ensure that retest requirements were met following any preventive maintenance that was performed after the surveillance completion date.
- o Safety-related maintenance task cards performed during RFO3 (approximately 1,000 task cards) were reviewed to ensure that appropriate retests were completed before returning the system or component to operable status.

There were no other safety-related components identified as not being currently retested.

D. Apparent Cause

The maintenance instructions for rebuilding Bettis actuators required maintenance personnel to contact the LLRT Coordinator to determine if leak rate testing was required and to contact Operations to determine if stroke time testing was required. In addition, the procedure instructed maintenance personnel to support the retests to ensure that all required testing was performed. The investigation determined that all required leak rate tests and most of the stroke time tests were performed following refurbishment of the actuators. However, no evidence could be found documenting that a stroke time test was performed prior to returning the subject 7 dampers to operable status.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Grand Gulf Nuclear Station	DOCKET NUMBER (2)  0   5   0   0   0   4   1   6	LER NUMBER (3)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		8   9	-   0   1   5	-   0   1	0   4	OF 0   5

TEXT of more space is required, use additional NRC Form 259A's (17)

Stroke time tests are normally performed by operators in accordance with and documented by the applicable Operations Section surveillance procedures. There are no retest documentation requirements in the actuator rebuild procedures or on the tasks cards, which complicates the search for documentation. Nevertheless, since no retest documents for the subject 7 dampers were found, it is concluded that these stroke time tests were not performed.

The failure to perform the stroke time tests is attributed to personnel error by maintenance personnel and licensed operators. Maintenance personnel did not ensure that stroke time tests were performed as required by the maintenance procedure, and the Operations Shift Supervisor failed to ensure that post-maintenance surveillance testing was performed as required by procedure 01-S-06-2, Conduct of Operations.

Programmatic weaknesses also contributed to the error. The maintenance procedure was not written in accordance with standard practices regarding maintenance/operations interface for performing retests. The task card packages provided to operations for review, did not address additional retest requirements nor provide for documentation of completed retests. Normally, the type of periodic maintenance performed under task cards (e.g., lubrication, inspection, calibration) do not require additional retests and the task cards are not subject to the same documented retest review process as Maintenance Work Orders (MWOs).

E. Supplemental Corrective Actions

As an immediate action, preventive maintenance (PM) task cards, excluding surveillances, were retrieved from the field and retest control forms, similar to those used for MWOs, were added to the task card packages to require a documented review for retest applicability. Surveillance tasks were excluded because any required retests for surveillance activities are accomplished by specific steps within the surveillance procedures.

As a long term measure, a new computer data field was added to repetitive task work orders to indicate whether or not a retest is required. If a required retest is indicated, a form will be included in the work package for performing and documenting the retest. Initially, retests for each task will be determined prior to performance of the task. The retest applicability determination will remain constant unless a change is approved in accordance with the repetitive task program procedures.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Grand Gulf Nuclear Station	DOCKET NUMBER (2)  0 5 0 0 0 4 1 6 8 9	LER NUMBER (3)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		8 9	0 1 5	0 1	10 5	OF 0 5

TEXT IF more space is required, use additional NRC Form 288A's/1177

Maintenance mechanics and supervisors were instructed that when a procedure step is not clearly understood or deviates from the normal way of doing business, they are to stop and obtain clarification or a procedure change before proceeding.

Operations Shift Supervisors were informed of their responsibility to ensure that when a safety-related system or component is returned to service following maintenance, required tests are completed before declaring it operable.

F. Safety Assessment

All of the subject isolation dampers had closure time within the maximum limit of 4 seconds. Therefore, there was no reduction of the safety functions provided by the components.

Although no reduction of a safety function occurred, System Energy Resources, Inc. (SERI) realizes the potential significance of failing to perform adequate retests on components or systems following maintenance and has taken comprehensive corrective actions to strengthen programmatic weaknesses.