

Public Service  
Electric and Gas  
Company

**Steven E. Miltenberger**

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Vice President and Chief Nuclear Officer

May 5, 1989  
NLR-N89101

United States Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

Gentlemen:

EMERGENCY LICENSE AMENDMENT REQUEST  
TECHNICAL SPECIFICATION 4.7.9.e.1  
SALEM GENERATING STATION  
UNIT NOS. 1 AND 2  
FACILITY OPERATING LICENSE NOS. DPR-70 AND DPR-75  
DOCKET NOS. 50-272 AND 50-311

Public Service Electric and Gas Company (PSE&G) hereby submits a request to amend Appendix A of Facility Operating Licenses DPR-70 and DPR-75 in accordance with 10CFR50.90. This request for amendment proposes the deletion of the Salem Generating Station Unit Nos. 1 and 2 requirement in Technical Specification 4.7.9.e.1 that the measured drag force of a mechanical snubber should not increase by more than 50% from the previous test result.

It has been determined that the proposed amendment does not involve a significant hazards consideration pursuant to 10CFR50.92. A description of the amendment request and the basis for a no significant hazards consideration determination is provided in Enclosure 1. Enclosure 2 provides the requested revisions of the Salem Units 1 and 2 Technical Specifications. The requested amendment is similar to amendment requests submitted to and approved by the NRC for Duane Arnold, Susquehanna Unit 1 and Palisades. In addition, this requirement has been excluded from plants which have recently received their operating license (such as Hope Creek) and from the latest draft version of the Westinghouse Standard Technical Specifications (Revision 5). The reasons for the emergency nature of this request are presented below.

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During the current Salem Unit 1 outage, surveillance testing has identified a number of mechanical snubbers in the area of the pressurizer that have experienced an increase in drag force of more than 50 percent from the previous measurement. Due to the number of snubbers exceeding this drag force comparison criterion (6 out of 21 tested), an expanded sample of mechanical snubbers must be selected for functional testing due to the Technical Specification 4.7.9.e.1 requirement. Expanding the test sample for this reason could very possibly lead to the testing of the entire mechanical snubber population (81 snubbers). This amount of testing would require an additional 1000 man-hours of work and would result in an estimated increase in radiation exposure of approximately 40 man-rem, primarily due to the number of mechanical snubbers located in the vicinity of the pressurizer (48). This radiation exposure level could increase depending on the results of the additional testing and any required repair or replacement activity. The increased inspections could not have been reasonably foreseen since there has been no evidence of a trend toward increased drag force. The test results provided in attached Table 1 demonstrate that a trend toward increasing drag force is not discernible.

If prompt action by the NRC to review and approve this amendment request is not forthcoming, a significant addition to outage man-rem exposure would result. This exposure is deemed to be unnecessary since it is not technically justified as verified by similar license amendment requests that have been granted by the NRC for other plants.

The functional test results have been within the maximum drag force acceptance criteria for all mechanical snubbers tested to date. However, in some cases the requirements of Technical Specification 4.7.9.e.1 have not been satisfied with respect to the change in drag force. All measured drag force loads are acceptable and the snubbers are considered operable, yet the test sample population must be increased in accordance with the Technical Specifications. The snubber manufacturer (Pacific Scientific) has performed drag load testing to determine snubber operability and performance trending. Test results (see attached Pacific Scientific test report) have indicated that the drag force parameter does not establish a trend that can be used to predict pending snubber failure. PSE&G agrees with this evaluation and believes that the tests results provided in Table 1 provide further support for this conclusion. As such, PSE&G believes that this amendment request represents the technically justifiable deletion of an unnecessary and non-predictive functional test requirement.

The emergency nature of this request is applicable to Salem Unit 1 only. However, this request is being submitted for both Salem Units 1 and 2 to avoid future administrative demands for the review of a separate request for Salem Unit 2. In order to minimize the impact on man-rem exposure and the current Salem 1 outage schedule, a determination of acceptability is needed as soon as practicable. No compensatory measures are necessary since none of the mechanical snubbers have been found to be inoperable as discussed above, only that the measured drag force has increased by more than 50% of the last measured drag force value.

PSE&G has reviewed this request and has determined that there is no impact on the environment. Deletion of the drag force comparison acceptance criterion will have no affect on effluent types or total amounts, nor does the proposed change increase power levels. Therefore, PSE&G concludes that the proposed change does not involve a significant environmental impact and should be excluded, pursuant to 10CFR51.22, from the need for preparation of an environmental impact statement and appraisal.

Pursuant to 10CFR50.4(b)(2)(ii), this submittal includes one (1) signed original and thirty-seven (37) copies. In accordance with 10CFR50.91(b)(1), a copy of this amendment request has been sent to the State of New Jersey.

Should you have any questions with regard to this submittal, please do not hesitate to contact us.

Sincerely,



Attachment

C Mr. J. C. Stone  
Licensing Project Manager

Ms. K. Halvey Gibson  
Senior Resident Inspector

Mr. W. T. Russell, Administrator  
Region I

Mr. Kent Tosch, Chief  
New Jersey Department of Environmental Protection  
Division of Environmental Quality  
Bureau of Nuclear Engineering  
CN 415  
Trenton, NJ 08625

REF: LCR 89-02  
NLR-N89101

STATE OF NEW JERSEY            )  
  ) SS.  
COUNTY OF SALEM                )

Steven E. Miltenberger, being duly sworn according to law deposes and says:

I am Vice President and Chief Nuclear Officer of Public Service Electric and Gas Company, and as such, I find the matters set forth in our letter dated May 5, 1989, concerning the Salem Generating Station, Unit Nos. 1 and 2, are true to the best of my knowledge, information and belief.



Subscribed and Sworn to before me  
this 5th day of May, 1989

Vanita M. Marshall  
Notary Public of New Jersey

VANITA M. MARSHALL  
NOTARY PUBLIC OF NEW JERSEY  
My Commission Expires May 6, 1993

My Commission expires on \_\_\_\_\_

ENCLOSURE 1

SALEM GENERATING STATION  
UNIT NOS. 1 AND 2  
FACILITY OPERATING LICENSE NOS. DPR-70 AND DPR-75  
DOCKET NOS. 50-272 AND 50-311

I. Description of Change

This proposed change revises Section 4.7.9.e.1 of the Salem Unit Nos. 1 and 2 Technical Specifications. The change will delete an aspect of mechanical snubber surveillance test acceptance criteria which requires a verification that the snubber drag force has not increased more than 50% since the previous functional test.

II. Reason for the Proposed Change

The existence of the above requirement in the mechanical snubber inservice inspection program represents an unnecessary constraint on the verification of snubber operability. A snubber with a drag force greatly below the specified limit may experience an increase in drag force that is small in absolute terms, but exceeds 50% of the previous test result. This would result in an increase in the test population under the present program.

As described in LER 272/89-015-00 dated April 19, 1989, Salem Generating Station has not, in the past, performed the subject drag force comparison. However, since drag forces were measured and documented, it was possible to review the functional test data and apply the 50% criterion. This review indicated that (prior to the current Salem Unit 1 outage) four snubbers at Salem Unit 1 and nine snubbers at Salem Unit 2 had failed to meet the criterion. Only one of these snubbers, in Unit 2, was still in use and was replaced in April, 1989. None of these nine snubbers had drag forces above the maximum allowable value. During the current Salem Unit 1 outage, 6 of 21 mechanical snubbers tested have exhibited drag forces more than 50% higher than those previously measured.

The snubber manufacturer (Pacific Scientific) has generated the attached test report related to mechanical snubber drag force loading (Test Report 871, dated April 13, 1984). The results of these tests indicate that an increase in drag force from one inspection period to the next does not establish a trend that can be used to predict pending snubber failure. PSE&G agrees and concludes that a 50% increase in measured drag force from one inspection period to the next is not cause for declaring the snubber inoperable if the load is below the maximum allowable value.

### III. Justification for the Proposed Change

The proposed change does not change the following aspects of the snubber surveillance program:

- 1) Visual inspections and associated acceptance criteria, which include manual verification of freedom of movement where possible.
- 2) Retesting of any snubbers and/or replacements which failed the previous test.
- 3) Testing of all snubbers of the same design as a snubber selected for functional testing that fails to move or fails to lockup due to a design or manufacturing defect.
- 4) Verification that the drag force is less than the specified allowable value.
- 5) Verification that activation is achieved within the range of velocity or acceleration specified for both tension and compression.
- 6) Verification of acceptable release rate or ability to withstand load without displacement, as applicable.
- 7) Compliance with ASME Section XI per Technical Specification 4.0.5.

The measures listed above comprise an adequate program for assuring snubber operability. Verifying that drag force is within its specified allowable limit (Item 4 above) is the primary means of determining that the drag force is acceptable. The requirement being deleted by this proposed change may cause an unnecessary increase in the snubber test population even if the drag force is well below the acceptance criteria. This represents an inappropriate use of resources and an increase in radiation worker exposure.

The apparent intent of the current drag force comparison requirement is to trend increases in drag force in order to predict impending snubber failure. However, the aforementioned Pacific Scientific test report indicates that an increase in drag force is not a valid indicator of imminent snubber failure. This supports the position that a 50% increase in drag force is not sufficient cause for declaring a snubber inoperable.

The Salem test results provided in Table 1 support the position that the drag force comparison is not an adequate predictor of snubber failure. The data indicates that as many snubber drag forces have decreased as have increased from previous measurements. PSE&G believes that these data variations are

valid and within the expected statistical variation considering the techniques and equipment used. It should also be noted that the drag force is determined from an average of measurement values and not from an instantaneous measurement.

It should also be noted that the Commission has indicated their approval of the deletion of the 50% drag force change comparison requirement by not including it in the latest draft version of the Westinghouse Standard Technical Specifications (Revision 5) in addition to approving license changes identical to this one for other plants. This requirement has not been included in the snubber technical specifications for more recent operating licenses (such as Hope Creek).

#### IV. Significant Hazards Analysis Consideration

The standards used to arrive at a determination that a request for amendment involves no significant hazards consideration are included in the Commission's regulations, 10CFR50.92. These regulations state that no significant hazards considerations are involved if the operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any previously evaluated; or (3) involve a significant reduction in a margin of safety. Each standard is discussed as follows:

- 1) Operation of the facility in accordance with the proposed amendment would not involve a significant increase in the probability or consequences of an accident previously evaluated.

The aspects of the snubber inspection program discussed in Section III above address the needed snubber functional requirements and should therefore be deemed acceptable for determining snubber operability. The proposed change does not adversely affect the snubber inspection program. The relevant specified parameters for each snubber subjected to functional testing will still be verified to be within allowable limits. Consequently, the proposed change does not increase the likelihood of snubber inoperability, nor does it increase the adverse effects of such inoperability on the associated systems.

The snubbers are included in the system design to mitigate the effects of a seismic event and allow for thermal expansion of the piping. The functional testing described above will determine the capability of the snubber to meet these requirements. The 50% drag force load comparison currently required by Technical Specification 4.7.9.e.1 does not supplement the operability determination of the snubber and can be deleted without adverse impact on the associated system.

Therefore, it may be concluded that the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

- 2) Operation of the facility in accordance with the proposed amendment would not create the possibility of a new or different kind of accident from any previously evaluated.

The proposed change does not involve changes to the design or application of snubbers. It does not involve any design or configuration changes to the plant. No new accident scenarios or new component failure mechanisms are introduced. Therefore, it may be concluded that the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

- 3) Operation of the facility in accordance with the proposed amendment would not involve a significant reduction in a margin of safety.

Snubbers provide assurance that the structural integrity of the fluid systems subjected to dynamic loads is maintained. The margin of safety associated with snubbers is related to the specified allowable limits imposed on performance parameters, including maximum allowable drag force. This change proposes to delete a test acceptance criterion related to a change in the measured drag force, and does not increase the maximum allowable value. Therefore, it may be concluded that the proposed change does not involve a reduction in a margin of safety as defined by the Technical Specifications.

For the reasons noted above, PSE&G has determined that the proposed change does not involve a Significant Hazards Consideration.

TABLE 1

MECHANICAL SNUBBER DRAG TEST COMPARISON TABLE

MODEL #	SERIAL #	PREVIOUS FUNCTIONAL TEST		SPRING, 1989	
		FINAL RUNNING DRAG TENSION	DRAG COMPRESSION	INITIAL RUNNING DRAG TENSION	DRAG COMPRESSION
PSA-1	324	4.7 LBS	18.3 LBS	5.6 LBS	10.1 LBS
PSA-10	1366	19.8 LBS	64.7 LBS	42.1 LBS	88.6 LBS
PSA-10	569	31.2 LBS	19.5 LBS	37.5 LBS	35.4 LBS
PSA-3	25782	31.2 LBS	< 3.9 LBS	15.9 LBS	28.8 LBS
PSA-3	25779	5.4 LBS	15.4 LBS	21.7 LBS	18.8 LBS
PSA-3	25776	26.1 LBS	25.9 LBS	16.2 LBS	3.7 LBS
PSA-3	479	35.1 LBS	< 3.9 LBS	81.5 LBS	20.3 LBS
PSA-1	383	14.8 LBS	19.9 LBS	6.1 LBS	3.5 LBS
PSA-10	621	35.1 LBS	31.2 LBS	21.2 LBS	12.0 LBS
PSA-10	627	54.6 LBS	27.3 LBS	24.1 LBS	15.4 LBS

One snubber, PSA-1/2, serial # 4064 has experienced multiple functional tests over a series of refueling outages. The data for this snubber is listed below.

	1982		1984		1986	
	TENSION	COMPRES.	TENSION	COMPRES.	TENSION	COMPRES.
INITIAL	-	-	6.2 LBS	6.6 LBS	8.0 LBS	7.8 LBS
FINAL	4.0 LBS	6.0 LBS	3.1 LBS	7.4 LBS	2.8 LBS	8.1 LBS

	1987		1989	
	TENSION	COMPRES.	TENSION	COMPRES.
INITIAL	3.7 LBS	7.6 LBS	11.1 LBS	14.6 LBS
FINAL	2.0 LBS	9.2 LBS	-	-

Maximum acceptable drag force without Engineering evaluation for PSA snubbers is listed below. These values represent 2% of the snubbers rated load.

PSA - 1/2	13 LBS	PSA - 1	30 LBS	PSA - 3	120 LBS
		PSA - 10	300 LBS		

Kin-Tech Division



Pennsylvania Power & Light  
Corporate Office, Two North 9th  
Anne 6-3  
Allentown, Pa. 18101

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Atten: Mr. John Novak

Subject: Mechanical Shock Arrestor Drag Force

Gentlemen:

Confirming our recent telecon it is Pacific Scientific's opinion that a 50 percent increase in measured Drag Force from one inspection period to the next should not be considered cause for declaring the snubber inoperable, unless of course, the increase exceeds the maximum allowable value.

For example, the maximum allowable Drag Force prior to shipment on our model PSA10 Shock Arrestor is 150 pounds. Many new PSA-10 Snubbers have Drag Force Valves as low as 25 pounds. If one of these Snubbers were installed and tested, say two years later and the measured Drag Force was 50 pounds (100% increase) it would be considered inoperable. However, we could conceivably ship a new replacement snubber the following day with a Drag Force of 100 pounds which is 100% higher than the unit it is replacing!

In addition and more meaningful than the above example is, testing we performed in 1984 and reported in Test Report 871. This testing proves that an increase in Drag Force from one Inspection Period to the next does not establish a trend that can be used to predict pending snubber failure. A copy of the report is enclosed.

Respectfully Yours,

A handwritten signature in cursive script that reads 'F.M. Fredrickson'.

F.M. Fredrickson

*Floyd*

General Sales Manager

Enclosure: copy of report

cc: F. Mc Cormick  
Y. Liddell

L. Camacho  
B. Bird

FMF/jp