

Jersey Central Power & Light Company



MADISON AVENUE AT PUNCH BOWL ROAD • MORRISTOWN, N. J. 07960 • 201-539-6111

General



Public Utilities Corporation

February 7, 1975



Mr. K. R. Goller
Assistant Director for Operating Reactors
Division of Reactor Licensing
Office of Nuclear Reactor Regulation
Washington, D. C. 20555

Dear Mr. Goller:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
Snubber Service Life and Reliability

In his October 1, 1973 letter, Mr. Donald J. Skovholt requested the submittal of a proposed program to improve snubber (i.e., hydraulic shock and sway arrestor) service life and reliability and proposed Technical Specification changes to incorporate a snubber surveillance program. This request was accompanied by the specification to replace all snubber seal material with "material demonstrated to be compatible with the hydraulic fluid at the operating environment," and the specification of snubber inspection intervals (i.e., a 120 day maximum inspection interval for snubbers inaccessible during reactor operation and a 30-day maximum inspection interval for snubbers accessible during reactor operation).

During the September 1973 shutdown of the Oyster Creek Nuclear Generating Station, all snubbers within the Oyster Creek drywell and most of the snubbers in the Reactor Building were rebuilt with seals made of molded polyurethane, viton, and ethylene propylene. In December of 1973, General Electric Company reported that snubber seal tests indicated that ethylene propylene (EP) seal material was best suited for use in Bergen-Paterson snubbers. Additional tests by the Packer Seal Company demonstrated the ability of EP seal material to withstand the operating environment of the drywell (ref. Mr. D. A. Ross's letter of November 8, 1974 to Mr. K. R. Goller on "Snubber Temperature and Radiation Environment"). A program to rebuild snubbers with EP seals was started, and at present all drywell snubbers contain only EP seals and Reactor Building snubbers have been rebuilt to a large extent with EP seals. To date, the EP seal performance has been excellent. The detailed inspection procedures presented in the letter of December 7, 1973 from Mr. D. A. Ross, Manager of Generating Stations-Nuclear, to Mr. A. Giambusso have shown that no snubbers have failed

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due to EP seal deterioration. The failures of snubbers containing EP seals have been the result of mechanical failures such as main piston rod burrs cutting the main cylinder shaft U-cup. (Ref. Abnormal Occurrence Report No. 50-219/74-40.) Rebuilding and inspection procedures have been modified to identify and minimize such mechanical failures. The incorporation of the EP seals in the snubbers has significantly improved snubber service life and reliability. Therefore, inspections of those snubbers in the drywell will henceforth be done only when the drywell must be entered and the snubber inspection has not been performed within the previous 120 days. Defective units will be repaired or replaced before returning to power. Only EP seals will be used in repairing and rebuilding these units. Snubbers that are not in the drywell and are not accessible during reactor operation will be inspected when they are accessible but not more frequently than 120-day intervals. Defective units will be replaced or repaired only with EP seals.

Snubbers in the Reactor Building (i.e., those accessible during reactor operation) will be inspected at least every 60 days. This inspection will include a fluid level determination and a general visual examination. Units leaking fluid severely will be removed to determine the cause of the leakage. Repaired and/or rebuilt replacement units for the Reactor Building snubbers will contain only EP seals except for the main shaft packing seal. EP main shaft packing seals are not available for some of the snubber models currently in use in the Reactor Building. Operating experience has shown that this 60-day inspection interval is sufficient to detect conditions that could lead to snubber inoperability (e.g., leaking).

The current snubber surveillance program is part of the periodic Oyster Creek maintenance activities. This new inspection program (i.e., inspection during drywell accessibility if not performed within previous 120 days, etc.) is currently being included in the Oyster Creek Preventive Maintenance Program. It is felt that this type of inspection program is best suited for the maintenance program rather than the Technical Specifications. Its inclusion in the Preventive Maintenance Program safeguards the proper implementation of the inspection program. A proposed Technical Specification change to incorporate the snubber inspections into the Oyster Creek Technical Specifications is therefore not included.

While tests and experience have shown that the EP seal material is a viable solution to the snubber seal deterioration problem, Jersey Central Power & Light Company believes that a better solution is the replacement of the hydraulic snubbers with mechanical units. Analysis and tests have shown that the seismic response characteristics of the mechanical snubbers are equivalent or better than those of the hydraulic snubbers, and it, of course, does not have the seal deterioration problem. The Generation Engineering Department of Jersey Central Power & Light Company, therefore, is in the process of purchasing mechanical snubbers. It is anticipated that procurement procedures will be completed so that some of the drywell hydraulic snubbers can be replaced with mechanical units during the Spring 1975 Refueling Outage. When this is done, those units removed from the drywell (i.e., those containing EP seals only), will be used

Mr. Goller

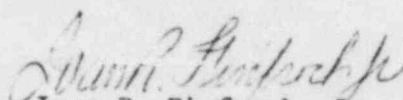
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February 7, 1975

to replace the snubbers in the Reactor Building. This will allow the surveillance interval for those Reactor Building snubbers containing all EP seals to be increased from 60 days to 120 days or greater.

Functional checks of the mechanical units in the drywell will be made in accordance with the specification of the Oyster Creek Station Inservice Inspection Program.

Very truly yours,



Ivan R. Finfrock, Jr.
Vice President

cs

OYSTER CREEK NUCLEAR GENERATING STATION
FORKED RIVER, NEW JERSEY 08731

Abnormal Occurrence
Report No. 50-219/74/3

Report Date:

January 24, 1974

Occurrence Date:

January 13, 1974

Identification of Occurrence:

Failure of Hydraulic Shock and Sway Arrestors on one Core Spray System and on both Isolation Condenser Systems. This event is considered to be an abnormal occurrence as defined in the Technical Specifications, paragraph 1.15D.

Conditions Prior to Occurrence:

The plant was in a cold shutdown condition with reactor coolant at <212°F.

Description of Occurrence:

During the required inspection of the Bergen Paterson HSSA-10 units in the primary containment, five units were discovered to be devoid of fluid. They were located as follows:

- 3 - "A" Isolation Condenser
- 1 - "B" Isolation Condenser
- 1 - Core Spray System No. 2

Apparent Cause of Occurrence:

The cause of snubber inoperability was due to a loss of hydraulic fluid. Disassembly of each of the inoperable snubbers has revealed no visually obvious deterioration of the seal material except for some brittleness.

Analysis of Occurrence:

The safety significance of this occurrence was a partial loss of the seismic restraining ability for the two affected systems. Had the plant suffered a design bases earthquake, the probability that these two systems would have suffered structural damage was increased.

Corrective Action:

The failed units were replaced with units that were rebuilt with ethylene propylene (Parker Grade E652-90) seal material. Four of the inoperable

Dupe 8103040590

units were located above the biological shield, a relatively hot area in the containment, and had been rebuilt in September 1973 with molded polyurethane and viton type seal material. All of the units in that area, regardless of condition, have been replaced with units rebuilt with the ethylene propylene type material.

Failure Data:

Manufacturer:	Bergen Paterson
Type:	HSSA-10
Serial Nos.:	487517
	487487
	477376
	470924
	469962

Jersey Central Power & Light Company



MADISON AVENUE AT PUNCH BOWL ROAD • MORRISTOWN, N. J. 07960 • 201-539-6111

General



Public Utilities Corporation

January 24, 1974

Mr. A. Giambusso
Deputy Director for Reactor Projects
Directorate of Licensing
United States Atomic Energy Commission
Washington, D. C. 20545



Dear Mr. Giambusso:

Subject: Oyster Creek Station
Docket No. 50-219
Abnormal Occurrence Report No. 50-219/74/3

The purpose of this letter is to forward to you the attached Abnormal Occurrence Report in compliance with paragraph 6.6.2.a of the Technical Specifications.

Enclosed are forty copies of this submittal.

Very truly yours,

Donald A. Ross
Manager, Nuclear Generating Stations

cs
Enclosures

cc: Mr. J. P. O'Reilly, Director
Directorate of Regulatory Operations, Region I

Initial Telephone

Report Date:

1/14/74

Date of

Occurrence:

1/13/74

Initial Written

Report Date:

1/14/74

Time of

Occurrence:

1700

OYSTER CREEK NUCLEAR GENERATING STATION
FORKED RIVER, NEW JERSEY 08731

Abnormal Occurrence
Report No. 50-219/74/ 3

IDENTIFICATION
OF OCCURRENCE:

Violation of the Technical Specifications, paragraph N/A,

Failure of Hydraulic Shock and Sway Arrestors on one Core
Spray System and two Isolation Condenser systems.

This event is considered to be an abnormal occurrence as de-
fined in the Technical Specifications, paragraph 1.15D.

CONDITIONS PRIOR
TO OCCURRENCE:

 Steady State Power
 Hot Standby
 X Cold Shutdown
 Refueling Shutdown
 Routine Startup
 Operation

 Routine Shutdown
 Operation
 Load Changes During
 Routine Power Operation
 Other (Specify)

The plant was shutdown with reactor coolant at <212°F.

DESCRIPTION
OF OCCURRENCE:

During the required inspection of the Bergen Paterson HSSA-10
units in the primary containment, five units were discovered
to be devoid of fluid. They were located as follows:

- 3 - "A" Isolation Condenser
- 1 - "B" Isolation Condenser
- 1 - Core Spray System #2

Dupe 8103040604

APPARENT CAUSE
OF OCCURRENCE:

_____ Design
_____ Manufacture
_____ Installation/
_____ Construction
_____ Operator

_____ Procedure
_____ Unusual Service Condition
_____ Inc. Environmental
_____ Component Failure
_____ Other (Specify)

The cause of snubber inoperability was due to a loss of hydraulic fluid. The cause of fluid loss is presently under investigation.

ANALYSIS OF
OCCURRENCE:

The safety significance of this occurrence was a partial loss of the seismic restraining ability for the two affected systems. Had the plant suffered a design bases earthquake, the probability that these two systems would have suffered structural damage was increased.

CORRECTIVE
ACTION:

The failed units were replaced with units that were rebuilt with ethylene propylene (Parker Grade E652-90) seal material.

FAILURE DATA:

Manufacturer: Bergen Paterson
Type: HSSA-10
Serial Nos.: 487517
487487
477376
470924
469982

Prepared by:

Arthur H. Rose

Date:

1/14/74

To:

James P. O'Reilly
Directorate of Regulatory Operations
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

From:

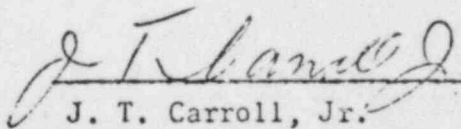
Jersey Central Power & Light Company
Oyster Creek Nuclear Generating Station Docket #50-219
Forked River, New Jersey 08751

Subject:

Abnormal Occurrence Report No. 50-219/74/ 3

The following is a preliminary report being submitted
in compliance with the Technical Specifications
paragraph 6.6.2.

Preliminary Approval:

 1/14/74
J. T. Carroll, Jr. Date

cc: Mr. A. Giambusso ✓

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