PSEG

Public Service Electric and Gas Company P.O. Box E Hancocks Bridge, New Jersey 08038

Salem Generating Station

March 4, 1983

Mr. R. C. Haynes
Regional Administrator
USNRC
Region 1
631 Park Avenue
King of Prussia, Pennsylvania 19406

Dear Mr. Haynes

LICENSE NO. DPR-70
DOCKET NO. 50-272
REPORTABLE OCCURRENCE 82-081/01X
SUPPLEMENTAL REPORT

Pursuant to the requirements of Salem Generating Station Unit No. 1 Technical Specifications, Section 6.9.1.8e, we are submitting supplemental Licensee Event Report for Reportable Occurrence 32-081/01X.

Sincerely yours,

H. J. Midura
General Manager -
Salem Operations

RF:ks JJJ

CC: Distribution

IE22

Report Number: 82-081/01X-1

Report Date: 03-03-83

Occurrence Date: 11-04-82

Facility: Salem Generating Station Unit 1
Public Service Electric & Gas Company
Hancock's Bridge, New Jersey 08038

IDENTIFICATION OF OCCURRENCE:

Plant Systems - Steam Generator Snubbers - Inoperable.

CONDITIONS PRIOR TO OCCURRENCE:

Mode 6 - RX Power 0 % - Unit Load 0 MWe.

DESCRIPTION OF OCCURRENCE:

During routine surveillance testing, from October 29 to October 31, 1982, four 1000 kip steam generator hydraulic snubbers were found to be out-of-specification on either the bleed rate or acceleration tests. Increased surveillance in accordance with Technical Specification Surveillance Requirement 4.7.9c revealed that all 16 of the snubbers failed the the bleed rate tests; lock-up velocities on six of the devices were also excessive. Operability of the snubbers is not required in Mode 6 since core cooling is provided by the Residual Heat Removal System, and operability of the steam generators is not required.

APPARENT CAUSE OF OCCURRENCE:

The snubbers are fitted with piston seals made of ethylene propylene (EPR) rubber material. The seals are centrifugally rubber molded assemblies on steel rings and have "vee" shaped, flared edges which provide effective sealing and resistance against load. These flared edges were found to be flattened, resulting in insufficient sealing and excessive test velocities.

In accordance with the Technical Specifications, the devices had originally been exempted from surveillance. Due to recent concern over hydraulic snubber operability, however, surveillance requirements were changed to specify testing of 10% of the devices at 18 month intervals. The snubbers had been manufactured in 1974. The shelf life of the EPR rubber seals, according to the manufacturer, is approximately seven years.

ANALYSIS OF OCCURRENCE:

All snubbers are required operable to ensure that the structural integrity of the reactor coolant system and all other safety related systems is maintained during and following a seismic or other event initiating dynamic loads. Steam generator hydraulic suppressors provide necessary restraint required to withstand a design basis seismic event and pipe rupture.

ANALYSIS OF OCCURRENCE: (cont'd)

When a snubber is found inoperable, an engineering evaluation is performed, in addition to the determination of the snubber mode of failure, in order to determine if any safety related component or system has been adversely affected by the snubber inoperability. Observed test failures of snubbers require testing of additional units.

Engineering Evaluation S-2-F700-MSE-160 (November 24,1982), based on studies by Harstead Engineering Associates, demonstrates that the degradation of all 16 steam generator snubbers on Salem Unit 1 would not have likely resulted in any Reactor Coolant System piping failure during a design basis event. Although permanent damage to the system would result, the system would perform as analyzed in the FSAR. The occurrence therefore did not involve any risk to the health and safety of the public.

The incident involved the potential failure of one or more components which could prevent, by itself, the fulfillment of the functional requirements of the systems used to cope with accidents analyzed in the FSAR. The occurrence is therefore reportable in accordance with Technical Specifications 6.9.1.8e.

CORRECTIVE ACTION:

All sixteen Unit 1 snubbers, including the valves, were disassembled and refurbished with the original designed EPR piston seals and parts at Wyle Laboratories, Huntsville, Alabama. The snubbers were satisfactorily retested; lock-up and bleed rate velocities achieved were well within the specification requirements.

Investigation of modification of the snubber pistons to utilize Tefzel material seals for improved service is presently underway; the effort is being jointly conducted by the Nuclear Engineering Department and Paul-Munroe Hydraulics Inc.

FAILURE DATA:

Rexnord Inc.
16" Bore 1000 Kip
Hydraulic Shock Suppressors

Prepared By R. Frahm

General Manager -
Salem Operations

SORC Meeting No. 83-026