



Pennsylvania Power & Light Company

Two North Ninth Street • Allentown, PA 18101 • 215 / 770-5151

Norman W. Curtis  
Vice President-Engineering & Construction-Nuclear  
215/770-7501

October 10, 1983

Dr. Thomas E. Murley  
Acting Regional Administrator, Region I  
U. S. Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, PA 19406

SUSQUEHANNA STEAM ELECTRIC STATION - UNIT 2  
INTERIM REPORT OF A DEFICIENCY CONCERNING  
ISOLATION OF THE UNIT 2 NITROGEN MAKEUP SYSTEM  
E. 100508 FILE 821-10  
PLA-1902

Dear Dr. Murley:

This letter serves to provide the Commission with an interim report on a deficiency concerning isolation of the Unit 2 Nitrogen Makeup System. This deficiency was originally reported by telephone to Mr. E. C. McCabe of NRC Region I on September 12, 1983 by Mr. J. Saranga of PP&L as reportable under the requirements of 10CFR50.55(e) for SSES Unit 2. This condition was reported to the Commission for Unit 1 in a letter (PLA-1842) dated 9/13/83 which transmitted Licensee Event Report No. 83-043.

The attachment to this letter contains a description of the deficiency, its cause, and the safety implications. Corrective action will include a permanent design modification to the Nitrogen Makeup System. PP&L anticipates providing the Commission with a final report in December, 1983, including the corrective action taken or planned. This information is furnished for Unit 2 pursuant to the provisions of 10CFR50.55(e). Since the details of this report provide information relevant to the reporting requirements of 10CFR21 for Unit 2, this correspondence is considered to also discharge any formal responsibility PP&L may have in compliance thereto.

We trust the Commission will find this report to be satisfactory.

Very truly yours,

N. W. Curtis  
V.P. - Engineering & Construction - Nuclear

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Attachment

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SSES PLA-1902  
ER 100508 FILE 821-10  
Dr. Thomas E. Murley

Copy to:

Mr. Richard C. DeYoung (15)  
Director-Office of Inspection & Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Mr. G. McDonald, Director  
Office of Management Information & Program Control  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Mr. Gary Rhoads  
U.S. Nuclear Regulatory Commission  
P.O. Box 52  
Shickshinny, PA 18655

Records Center  
Institute of Nuclear Power Operations  
1100 Circle 75 Parkway, Suite 1500  
Atlanta, GA 30339

Interim Report

SUBJECT

Isolation of the Unit 2 Nitrogen Makeup System

DESCRIPTION

It has been determined that the primary containment isolation system Division II relay (K83) provides a closure signal to the drywell nitrogen supply outboard isolation valve (SV-25767) and the containment atmosphere control sample inboard isolation valve (SV-25776B). The drywell nitrogen supply line taps into the containment atmosphere sample line between the inboard valve (SV-25776B) and the outboard valve (SV-25774B) (see attachment). With the nitrogen makeup system in service, coincident with a loss of coolant accident, the K83 relay could fail in such a manner as to maintain SV-25776B and SV-25767 open. This configuration could create a direct path from primary containment to the outside environment through the non-safety related nitrogen makeup system should it fail. A similar scenario is applicable to the suppression chamber nitrogen supply isolation valve (SV-25737) and the containment atmosphere control return inboard isolation valve (SV-25736B).

CAUSE

The deficiency resulted from a previous change of the power supply to the inboard isolation valves from Division I to Division II in order to prevent a loss of Division I power from closing the valves and preventing the operation of the Division II containment atmosphere sample system.

SAFETY IMPACT

The nitrogen makeup system is isolated from the drywell by two 1" energize to open (fail closed) process solenoid valves. The same arrangement exists for the suppression chamber. During normal plant operation the makeup system is used intermittently.

In order to provide a direct path to the environment, the following events must occur:

- 1) A LOCA
- 2) Failure of the isolation relay (K83) to change states

- 3) Operation of the nitrogen makeup system prior to and during the LOCA. (Note: Operation of the nitrogen makeup system during any condition where the drywell pressure exceeded 1 psig would be a violation of the alarm response procedure and indicative of still another failure of the pressure control interlocks of the nitrogen makeup system.)
- 4) A line break or tank rupture in the non-Q nitrogen makeup system.

Although the simultaneous occurrence of these events is considered to be highly unlikely, the possibility does exist. It is, therefore, considered to be reportable under the provisions of 10CFR50.55(e).

#### CORRECTIVE ACTION

A permanent design modification is to be implemented under PMR 83-536. Although different piping schemes are currently being evaluated, each scheme provides for a minimum of 2 redundant isolation valves in each of the nitrogen makeup lines to the containment. One valve will be powered from and isolated by the Division I power supply. The second valve will be powered from and isolated by the Division II power supply.

Unit 2 Nitrogen Makeup System Isolation Valves

