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SUBJECT: Application for amend to License NPF-14, requesting Tech Spec Table 3.6.3-1 modified to reflect change re primary containment isolation valves.

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APR 05 1993

Director of Nuclear Reactor Regulation
Attention: Mr. C. L. Miller, Project Director
Project Directorate I-2
Division of Reactor Projects
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

**SUSQUEHANNA STEAM ELECTRIC STATION
PROPOSED AMENDMENT 156 TO LICENSE NO. NPF-14 :
CHANGES TO THE UNIT 1 SUPPRESSION POOL FILTER
PUMP AND VALVES ISOLATION LOGIC
PLA-3951**

FILE R41-2/A17-2

Docket No. 50-387

Reference: PLA-3707, H.W. Keiser to USNRC, "July 31, 1991 Scram Issue Resolution Plan," dated December 30, 1991.

Dear Mr. Miller:

The purpose of this letter is to transmit a proposed change to the Susquehanna SES Unit 1 Technical Specifications that changes the isolation signal for suppression pool cleanup line valves HV-15766 and HV-15768 from reactor vessel low water level 3 (+13") or high drywell pressure to reactor vessel low water level 2 (-38") or high drywell pressure.

BACKGROUND

We are requesting Technical Specification Table 3.6.3-1 be modified to reflect this change. The impetus for this change derives from our desire to improve the operator's ability to manage suppression pool inventory/enthalpy as summarized in the referenced PLA-3707, issue #5, written in response to the July 31, 1991 operational event.

The suppression pool is used to absorb the energy released during a LOCA, or safety/relief valve (SRV) operation, and to serve as source of water for Emergency Core Cooling Systems (ECCS). Since pool water may be introduced into the reactor vessel, the capability to maintain or improve water quality is provided by a cleanup line. This line

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is utilized to transfer water from the pool to the condenser hotwell where it can be filtered by passing through the condensate demineralizers. The cleanup line may also be used to lower the suppression pool water level.

This change is designed to increase the likelihood that the cleanup line will remain available (unisolated) for suppression pool level control following plant transients. This is accomplished by increasing the margin between reactor vessel water levels during normal operation and the water level that results in the isolation of the cleanup line. The change also reduces operator burden during plant cooldown by eliminating the need to repeatedly reset the isolation logic should additional isolations of the cleanup line occur.

DESCRIPTION OF CHANGE

PP&L is proposing that Technical Specification Table 3.6.3-1 be modified to reflect the change in isolation signal for the suppression pool cleanup line valves as indicated on the attached marked-up page.

SAFETY ANALYSIS

The safety functions of the cleanup line are to automatically isolate, following a Loss of Coolant Accident (LOCA) inside containment to limit radiological releases, and to provide the capability to manually isolate following a pipe break outside containment to prevent a loss of water from the suppression pool. The safety function of the suppression pool is to provide a source of water for Emergency Core Cooling Systems (ECCS) and to absorb energy released during a LOCA or safety/relief valve operation. FSAR Chapters 6 & 15 and the Design Assessment Report were reviewed to determine the effect of changing the isolation signal on the transient and accident analyses. It was determined that applicable containment analyses were not affected because these analyses are based on a level 2 cleanup line isolation. The design basis radiological release analysis remains bounded because this analysis is independent of the isolation signal used.

After the construction of Susquehanna SES was completed, General Electric specified the design requirement for isolation of the cleanup line as reactor vessel low water level 2 or high drywell pressure (Reference: GE Specification No. 22A7239, Nuclear Steam Supply Shutoff System). Since this modification changes the isolation signal from level 3 to level 2, the design requirement remains satisfied and the safety function of automatic isolation following a LOCA is not impacted. In addition, the hardware used for the level 2 signal is identical in design, material and construction to that previously used for level 3. Because the modification only changes the automatic isolation signal, manual isolation is unaffected.



The increase in availability of the cleanup line allows the plant operator to reduce pool water levels should they increase over the high level setpoint. Lower pool water levels result in lower loadings to the suppression pool structure and submerged components in the pool during a LOCA or safety/relief valve operation. Therefore, the change has a positive impact on operation of the suppression pool.

NO SIGNIFICANT HAZARDS CONSIDERATION

The proposed change does not:

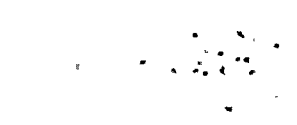
- (1) *Involve an increase in the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated.*

This conclusion is based on the consideration that the isolation signal change from level 3 to 2 does not degrade the operation of any equipment or system. Furthermore, the Agastat relays and level switches to be used for the level 2 isolation signals are identical in design, material and construction to those currently used for level 3.

The modification does not alter or degrade the ability of the two cleanup line valves to isolate the cleanup line following those LOCAs inside containment that require isolation. The isolation system design will always result in its actuation at level 2. The design requirement for isolation at level 2 remains satisfied, and in compliance with NUREG-0800 (Standard Review Plan) and NUREG-0776 (Safety Evaluation Report, SSES).

During transients that result in reactor vessel water levels between 2 & 3, the modification will permit the cleanup line to be used, if necessary, to lower the suppression pool water level. Manual control of the filter pump has not been changed. Operation of the cleanup line following these transients is permissible because a LOCA inside containment has not occurred.

Since the cleanup line isolation signal remains in compliance with the design requirements established by General Electric, it is concluded that the consequences of an accident have not been increased.



The probability of a malfunction of equipment important to safety has not been increased by the modification. The relay room panels, where both the level 2 & 3 relays are located, will have minor changes to the internal wiring. Seismic qualification of the equipment will be unaltered. Valve operation remains unchanged, except for the level of reactor vessel water that initiates a containment isolation signal.

The loading on the suppression pool structure, and submerged components in the pool, following safety/relief valve operation, has not been increased. Since higher water levels result in higher loads, the loading following the modification would either be less than or equal to the existing loading depending on whether the filter pump is operating.

The modification does not result in an increase in consequences assuming a malfunction of equipment important to safety. The consequences of failing to isolate containment following a LOCA inside containment or preventing the suppression pool from performing its function are not influenced by the modification.

- (2) *Create the possibility of a new or different kind of accident from any previously evaluated.*

The modification uses spare terminals on existing relays to receive an input from a level 2 switch. These relays are identical to those used to receive the level 3 input signal. The actuation logic remains single failure proof. A new possibility has not been created for those LOCAs inside containment that require isolation to occur without isolation of the cleanup line.

The modification does not create the possibility of a malfunction of the suppression pool structure and submerged components in the pool. The use of the cleanup line serves to lower the pool water level which decreases the loading during a LOCA or safety/relief valve operation.

- (3) *Involve a reduction in the margin of safety.*


The NRC provided their review of containment isolation signals in Section 6.2.4 of the Safety Evaluation Report (NUREG-0776). Reactor vessel water level 2 was found to be acceptable and therefore defines the basis for the margin of safety.

It is therefore concluded that since the proposed modification changes a containment isolation setpoint to a previously accepted value, a reduction in the margin of safety will not occur.

We request these amendments be approved prior to the Unit 1 Refueling and Inspection Outage scheduled to begin on September 11, 1993, and condition them to become effective prior to startup following the outage. Startup is currently scheduled to occur November 4, 1993; we will keep you informed of any scheduled changes.

If you have any questions regarding the above proposal, please direct them to Mr. A.K. Maron at (215) 774-7852.

Very truly yours,



R. G. Byram

Attachment

cc: NRC Document Control Desk (original)
NRC Region I
Mr. G. S. Barber, NRC Sr. Resident Inspector
Mr. R. J. Clark, NRC Sr. Project Manager

**BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION**

In the Matter of

:

Docket No. 50-387

PENNSYLVANIA POWER &
LIGHT COMPANY

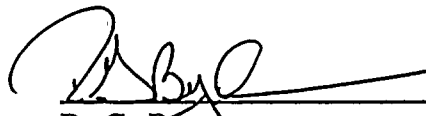
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**PROPOSED AMENDMENT No. 156
FACILITY OPERATING LICENSE NO. NPF-14
SUSQUEHANNA STEAM ELECTRIC STATION
UNIT NO. 1**

Licensee, Pennsylvania Power & Light Company, hereby files proposed Amendment No. 156 to its Facility Operating License No. NPF-14 dated July 17, 1982.

This amendment contains a revision to the Susquehanna SES Unit 1 Technical Specifications.

**PENNSYLVANIA POWER & LIGHT COMPANY
BY:**



R. G. Byram
Sr. Vice President - Nuclear

Sworn to and subscribed before me
this *5th* of *April*, 1993.

Jean A. Smolick
Notary Public

NOTARIAL SEAL
Jean A. Smolick, Notary Public
Allentown, Lehigh County
My Commission Expires May 14, 1996

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