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 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylva 05000388  
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 KEISER,H.W. Pennsylvania Power & Light Co.  
 RECIPIENT AFFILIATION  
 BUTLER,W.R. Project Directorate I-2

SUBJECT: Forwards application for Amends 118 & 68 to Licenses NPF-14 & NPF-22, modifying Tech Spec 4.8.2.1.d.2.b.

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# Pennsylvania Power & Light Company

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Harold W. Keiser  
Senior Vice President-Nuclear  
215/770-4194

Director of Nuclear Reactor Regulation  
Attention: Dr. W. R. Butler, Project Director  
Project Directorate I-2  
Division of Reactor Projects  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

SUSQUEHANNA STEAM ELECTRIC STATION  
PROPOSED AMENDMENTS 118 AND 68 TO  
LICENSE NOS. NPF-14 AND NPF-22:  
CHANGES TO THE SSES UNITS 1 & 2  
TECHNICAL SPECIFICATIONS TO REDUCE  
125V DC BATTERY LOAD PROFILE  
PLA-3123                      FILES A17-2, R41-2

Docket Nos. 50-387  
and 50-388

References: PLA-2419, B.D. Kenyon to USNRC, "NRC Enforcement Conference (50-388/84-34)," dated March 7, 1985.

PLA-2800, H.W. Keiser to USNRC, "NRC Enforcement Conference (50-388/84-34) Revision To Modification Schedule," dated March 6, 1987.

Dear Dr. Butler:

The purpose of this letter is to transmit proposed changes to the Susquehanna SES Unit 1 and Unit 2 Technical Specifications due to revisions to the load profiles for 125V DC battery banks 1D610, 1D620, 1D630, 1D640, and 2D610, 2D620, 2D630, 2D640.

## BACKGROUND

We are requesting Specification 4.8.2.1.d.2.b be modified to decrease the load profiles for batteries 1D610, 1D620, 1D630, 1D640 and 2D610, 2D620, 2D630, 2D640. These changes are necessary to accommodate the transfer of control room instrumentation inverter loads from AC-powered circuits to batteries 1D610, 1D620, 2D610 and 2D620 and to recognize decreased loads associated with the removal of emergency lighting loads from batteries 1D610, 1D620, 1D630, 1D640 and 2D610, 2D620, 2D630, 2D640. This will result in a net reduction in the connected loads from the existing Technical Specifications.

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DESCRIPTION OF CHANGE

PP&L is proposing that Specification 4.8.2.1.d.2.b be revised to reflect the new load profiles as indicated on the attached marked-up pages.

SAFETY ANALYSIS

PP&L has identified an existing problem at Susquehanna SES cited in our referenced correspondence, which will occur during the loss of AC power in a station blackout event. During a station blackout event, under the present design AC-powered control room instrumentation will be unavailable to the control room operators for the following variables:

- Reactor Vessel Level
- Reactor Vessel Pressure
- Suppression Pool Temperature Monitoring
- Suppression Pool Level
- Drywell Pressure
- Drywell Temperature
- RHR-Heat Exchanger Discharge Temperature
- Drywell and Wetwell Spray Flow
- Condensate Storage Tank Level
- Containment Instrument Gas Bottle Pressure

The unavailability of the above listed AC-powered variables during a station blackout situation results in a significant loss of information regarding condition of plant that may aid control room operators in maintaining Susquehanna SES in a safe condition.

The purpose of the 125V DC system is to provide a reliable, continuous source of power during normal plant operation upon loss of normal AC supply, for a time long enough to restore the AC buses to service. The addition of the above AC-powered instrumentation loads to the 125V DC system will provide reliable indication of the variables cited pending restoration of AC power.

The staff concluded in the Susquehanna Safety Evaluation Report (NUREG-0776) that the 125V DC system met all necessary regulatory criteria. With respect to the proposed change, the pertinent criterion is GDC 17, "Electric Power Systems," which states in part:

"The safety function . . . shall be to provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity is maintained in the event of postulated accident."

Per IEEE-485, actual battery capacity is determined by accounting for the affects of aging and environment over the battery lifetime. This margin allows replacement of the battery when its capacity has decreased to 80% of nameplate, which is well before connected loads could be jeopardized. Since



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the new profile does not impact the required capacity margin, the proposed Technical Specification change does not affect the staff's original finding that the requirements of GDC-17 are met by the design of the 125V DC system at Susquehanna SES.

In conclusion, with the addition of the control room inverter loads to the 125V DC system and with the deletion of the emergency lighting loads resulting in a net decrease in load profile of the system, the 125V DC system remains able to meet all of its design requirements.

#### NO SIGNIFICANT HAZARDS CONSIDERATIONS

The proposed change does not:

- (1) Involve an increase in the probability or consequences of an accident previously evaluated. FSAR Subsection 8.3.2.1.1.4 states that the station batteries have sufficient capacity without the charger to independently supply the required loads for four hours. The Technical Specifications require that the batteries be surveilled to dummy loads which are greater than the design loads. An assessment has been performed by our engineering department which verifies that the batteries have adequate capacity to power the actual loads on the 125V DC system. The new load profiles contained in the proposed amendment to the Technical Specifications envelop the actual loads.
- (2) Create the possibility of a new or different kind of accident from any previously evaluated. As stated in Part (1), the batteries have sufficient capacity to power the actual battery loads thus enabling them to perform their intended function. Any postulated accident resulting from this change is bounded by previous analysis.
- (3) Involve a reduction in the margin of safety. IEEE 485 requires that the related battery capacity include a margin for aging of the battery and the temperature of the batteries' environment at the beginning of battery life. This margin allows replacement of the battery when its capacity is decreased to 80% of its rated capacity (100% design load). Our engineering department has determined that with the revised reduced load profiles the Class 1E 125V DC batteries will supply their connected emergency loads with greater margins of safety at the battery electrolyte temperatures equal to or greater than 60°F and with 25% aging margins relative to load as recommended by IEEE-485-1983. With the decreased battery loads it can be concluded that the overall margin of the plant is not diminished.

We request these amendments be approved prior to the Unit 1 Refueling and Inspection Outage scheduled to begin on April 1, 1989, and condition them to become effective prior to startup following the outage. Startup is currently scheduled to occur June 16, 1989; we will keep you informed of any schedule changes.

If you have any questions regarding the above proposal please direct them to J.B. Wesner at (215) 770-7906. Pursuant to 10CFR170, the appropriate fee is enclosed.

Very truly yours,



H. W. Keiser

Attachment(s)

cc: NRC Document Control Desk (original)  
NRC Region I  
Mr. F. I. Young, NRC Sr. Resident Inspector  
Mr. M. C. Thadani, NRC Project Manager