



**Pennsylvania Power & Light Company**

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Vice President-Engineering & Construction-Nuclear  
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DEC 6 1984

Director of Nuclear Reactor Regulation  
Attention: Mr. A. Schwencer, Chief  
Licensing Branch No. 2  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

SUSQUEHANNA STEAM ELECTRIC STATION  
PROPOSED AMENDMENTS 57 TO LICENSE NPF-14  
AND 12 TO LICENSE NPF-22  
ER 100450 FILE 841-8  
PLA-2370

Docket Nos. 50-387  
50-388

Dear Mr. Schwencer:

The purpose of this letter is to propose amendments to the Susquehanna SES Unit 1 and Unit 2 Technical Specifications in order to avoid the forced shutdown of Unit 2 during the Unit 1 first refueling outage.

**PROBLEM:** SSES Unit 2 currently depends on certain Unit 1 125-volt batteries to support common loads; these Unit 1 batteries are therefore listed in the Unit 2 LCOs on DC systems. Since Unit 1 battery load profile testing must be performed during the first refueling outage, an ACTION statement must be entered in the Unit 2 Technical Specifications. The required testing will force the shutdown of Unit 2, since it cannot be performed within the two hours allotted in the ACTION statement.

**PROPOSED SOLUTION:** A single line diagram of Channel "A" of the Unit 1 125-volt DC system is provided in Figure 1. PP&L has developed a common load transfer scheme which will allow common loads to be powered from a 125-volt DC source on either unit through the use of manual transfer switches (see Figure 2).

In several cases, the individual feeder breakers supply not only a common load, but also a Unit 1 load (See Figure 3). Therefore, once the loads have been transferred to the Unit 2 source, the Unit 1 loads (hereinafter called "tag along loads") will be energized from a Unit 2 source.

In the revised design, non-Class 1E loads will usually be transferred between two different Unit 1 sources; some will be transferred between Unit 1 and Unit 2 sources. In order to maintain division/channel separation all Class 1E loads being transferred to support the transfer of common loads (again, this includes some tag along loads) will be transferred between the Unit 1 and corresponding Unit 2 battery.

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PROPOSED TECHNICAL SPECIFICATION CHANGES: A mark-up of the changes needed to support the proposed revised design is attached.

For the Unit 1 specifications, the following changes were made:

- o pages 3/4 8-10: The Unit 2 batteries, from which common and tag along loads may now be powered, are added to the LCO. A footnote is provided to remove them as an LCO requirement under situations when they are not supporting Unit 1 operation. ACTION a was revised to affect Unit 1 equipment only. ACTION b is provided on insert A to cover the common and tag along load transfer in the event that a Unit 2 battery supporting Unit 1 operation is inoperable. ACTION c is provided to cover the realignment of Unit 1 loads to their normal Unit 1 source once that source has been restored to OPERABLE status. Finally, ACTION b has been relettered.
- o page 3/4 8-11: ACTION c has been relettered.
- o page 3/4 8-12: The load profile for the Unit 1 Channel "B" battery has been revised to provide margin for future load additions, should they occur. Insert B provides the load profiles for the Unit 2 batteries that are now required by the revised LCO.
- o page 3/4 8-15: See discussion for page 3/4 8-10.
- o page 3/4 8-16: ACTIONS c and d have been relettered.
- o page 3/4 8-17: As on 3/4 8-10, required Unit 2 equipment has been added to the LCO with a footnote to govern when it is required to support Unit 1 operation.
- o page 3/4 8-18: See above discussion on 3/4 8-17. Also, as discussed on 3/4 8-10 for sources, appropriate ACTION statements have been proposed on insert D for the affected DC load groups.
- o page 3/4 8-20: See discussion on 3/4 8-17.
- o page 3/4 8-21: "And/or" has been revised to just "or" for consistency with the LCO requirement on page 3/4 8-20. Insert E is provided again for controls over common load transfer and restoration of normal alignment.

For the Unit 2 specifications similar changes were made to each section. The only significant differences are on the inserts (A through E) which provide one, not two ACTION statements.

The ACTION statement provided is different than the first ACTION on each Unit 1 insert in that it does not apply to any Unit 1 (tag along) loads. This is because Unit 2 requires only the common loads to support its operation. The second ACTION proposed in the Unit 1 inserts covers the restoration of the normal Unit 1 alignment with respect to unitized loads. Since no Unit 2 loads



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are being transferred due to this change, such an ACTION is not required in the Unit 2 specifications.

NO SIGNIFICANT HAZARDS CONSIDERATIONS:

- I. The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated, for the following reasons:

Each unit has four independent 125-volt DC power sources. The FSAR analysis shows that a unit can be safely shut down with any one 125-volt DC power source disabled (Section 8.3).

Based on the revised design, one 125-volt DC source would fail due to a fault in a Unit 1 tag along load if both upstream protective devices (fuse and distribution panel breaker) failed. The more likely result of a fault on a Unit 1 tag along load would be loss of an individual circuit. Therefore, the most probable failure is less severe than the loss of an entire power source, which has been previously evaluated.

Finally, the Unit 2 batteries have been analyzed and do have sufficient stored energy to operate all necessary loads for the design basis interval of four hours, after loss of AC power and assuming the loss of the battery charger.

- II. The proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

As stated above, the probable failure as a result of the revised design is within the bounds of the previous FSAR analysis, and battery capacity is sufficient to meet design commitments. Therefore no new or different possibility exist.

- III. The proposed changes do not involve a significant reduction in a margin of safety.

Based on the existence of sufficient battery capacity, the increased reliability of Unit 1 due to continuity of power, and the fact that the worst case failure due to the new design is consistent with previous analysis, one can conclude that the existing margin of safety has not been reduced.

Based upon the considerations presented above, this change appears to fall under an example as stated in 48FR14870, Column 3, paragraph (vi).

PP&L does note that this change presents a deviation from our previous FSAR commitments to Regulatory Guide 1.81, and upon approval of this change we will take the appropriate steps to revise the FSAR accordingly.



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IMPLEMENTATION SCHEDULE:

As stated at the beginning of this proposal, the most immediate problem which is being avoided as a result of this change is the shutdown of Unit 2 during the Unit 1 first refueling outage. Therefore, it is imperative that PP&L receive approval of the proposed change prior to or very early into the outage so that battery load profile testing can proceed on schedule and as a result of this modification, not force the shutdown of Unit 2.

The appropriate fees pursuant to 10CFR170.22 have been enclosed. Any questions on this matter should be directed to Mr. R. Sgarro, at (215) 770-7855. We are willing to meet with you at your convenience to further discuss this matter.

Very truly yours,



N. W. Curtis  
Vice President-Engineering & Construction-Nuclear

Enclosures

cc: M. J. Campagnone US NRC  
R. H. Jacobs US NRC

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