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           50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylv      05000388  
 AUTH. NAME                      AUTHOR AFFILIATION  
 CURTIS, N.W.                    Pennsylvania Power & Light Co.  
 RECIP. NAME                    RECIPIENT AFFILIATION  
 BUTLER, W.R.                    Licensing Branch 2

SUBJECT: Submits justification that proposed Amend 58 to License NPF-14 & proposed Amend 13 to License NPF-22 granting temporary extension of diesel generator limiting condition for operation will not significantly impact plant safety.

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# 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

**AUG 23 1985**

Director of Nuclear Reactor Regulation  
Attention: Mr. W. R. Butler, Chief  
Licensing Branch No. 2  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

SUSQUEHANNA STEAM ELECTRIC STATION  
ADDITIONAL INFORMATION FOR PROPOSED  
AMENDMENT NO. 58 TO NPF-14 AND PROPOSED  
AMENDMENT NO. 13 to NPF -22  
ER 100450/100508 FILE 841-8  
PLA-2523

Docket Nos. 50-387  
50-388

Dear Dr. Butler:

Region I inspectors requested a statement summarizing our previous submittals to NRC supporting the conclusions that a temporary extension of the diesel generator LCO does not significantly impact plant safety. This conclusion is based on the following factors:

- o PP&L is a member of the Pennsylvania-Jersey-Maryland power pool which is designed with reliability in mind. The design considers both independent and common mode contributors to system outage. PJM is also designed so that the largest single unit can trip with no significant impact on the grid. (This is discussed in Section 8.2 of the Susquehanna SES Final Safety Analysis Report). Additionally, PP&L transmission lines conform to or exceed the criteria set forth by the National Electric Safety Code. Further, the 230KV transmission lines supplying the off-site power system to Susquehanna do not share the same switchyard sources and are situated on separate corridors. This enhances the resistance of Susquehanna to a possible common mode cause of LOOP.
- o Should the unlikely event of a loss of off-site power to SSES occur, procedures are in place to promptly restore off-site power to the plant. Restoration time depends on the nature of the outage. If no damage exists to the off-site system, power can be restored in minutes. If a grid blackout were to occur power to SSES would be provided by a 230KV line from the Yards Creek Pumped Storage Hydroelectric station in New Jersey. It is expected that an energized 230KV line to Susquehanna would be available within 2-3 hours. In most cases, off-site power is expected to be restored to Susquehanna within 6 hours of a LOOP.

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Mr. W. R. Butler

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- o Prior to restoration of off-site power on-site diesel generators are available to power on-site loads. One diesel generator is sufficient to place both units in cold shutdown. This requires proper sharing of a single Residual Heat Removal Service Water Pump. Three diesels provide sufficient power to place both units in cold shutdown following a simultaneous loss of off-site power and a design basis loss of coolant accident in one unit. This also satisfies appendix K of 10CFR50.
- o Should the extremely unlikely event of a station blackout occur procedures are in place to maximize the time the plant can be sustained. The plant operations staff are routinely trained on these procedures. If no additional failures occur, the Susquehanna plant can sustain a station blackout for 24 hours. This is based on the following considerations.
  1. RCIC operation is limited by its equipment qualification temperature of 140°F. Calculations show this temperature is reached in about 11 hours during a blackout.
  2. Diesel fire pump operation is limited by the fuel in its storage tank. About 8 hours of fuel is available in the tank.
  3. About 5-6 hours are required to boil the liquid mass from normal water level to top of active fuel.

Should RCIC fail during the blackout HPCI can provide water to the vessel for 8 hours prior to reaching its room temperature. The diesel fire pump has sufficient capacity to provide water to the reactor 1 hour after the transient. Therefore, HPCI or RCIC operation is required for only 1 hour.

- o The 5th diesel tie in will be performed using good operating practices. It is common practice of PP&L to ensure no hazards such as severe weather exist prior to entering the temporary LCO. If the LCO work has commenced, and such hazards arise, PP&L will exit the LCO as quickly as practical. Also actions that would reduce the reliability of power sources to T-10 or T-20 will not occur while a diesel is in an LCO. These good operating practices ensure reliability of our AC power sources.

As discussed above the one time extension does not significantly impact plant safety. This is ensured through:

1. reliable grid,
2. reliable on-site AC design
3. thorough power restoration procedure
4. thorough procedure to sustain the plant during a station blackout, and
5. good operating practices throughout the PP&L system that minimize the chance of a power outage to SSES.

The American University is pleased to announce that the Office of the Dean has received a grant from the National Endowment for the Humanities to support a research project on the history of the American University. The project will be led by Professor [Name] and will focus on the role of the university in the development of the American nation. The grant will support a series of seminars and conferences on the topic, as well as the publication of a book on the subject.

The project is a part of the American University's ongoing commitment to research and scholarship. The university has a long history of excellence in the liberal arts and sciences, and this project is a testament to the university's dedication to the pursuit of knowledge. We are proud to have received this grant and look forward to the results of the project.

If you have any questions about the project or would like to learn more, please contact the Office of the Dean at [Phone Number] or [Email Address]. We are happy to provide any information you need.

Thank you for your interest in the American University and its commitment to research and scholarship.

Sincerely,  
[Name]  
Dean

The American University is a private, non-profit institution of higher learning. It is committed to the highest standards of academic excellence and to the advancement of the liberal arts and sciences. The university is a member of the Association of American Universities and the Association of Christian Colleges and Universities.

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Mr. W. R. Butler

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We believe this defense in depth ensures the safe operation of our plant during the extended LCO.

If you have any questions, please contact us.

Very truly yours,



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

cc: C. Anderson - USNRC  
M. J. Campagnone - USNRC  
R. H. Jacobs - USNRC

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