

BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of : Docket No. 50-388
PENNSYLVANIA POWER & :
LIGHT COMPANY :

PROPOSED AMENDMENT No. 150
FACILITY OPERATING LICENSE NO. NPF-22
SUSQUEHANNA STEAM ELECTRIC STATION
UNIT NO. 2

Licensee, Pennsylvania Power & Light Company, hereby files proposed Amendment No. 150 to its Facility Operating License No. NPF-22 dated March 23, 1984.

This amendment contains a revision to the Susquehanna SES Unit 2 Technical Specifications.

PENNSYLVANIA POWER & LIGHT COMPANY
BY:



R. G. Byram
Sr. Vice President - Nuclear

Sworn to and subscribed before me
this 11th of January 1986.



Notary Public

Notarial Seal
Martha C. Sedora, Notary Public
Allentown, Lehigh County
My Commission Expires Jan. 16, 1990
Member, Pennsylvania Association of Notaries

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SAFETY ASSESSMENT

ELIMINATE THE NEED FOR ENTRY INTO LCO 3.0.3 TO PERFORM EDG TESTING

Background

As part of the performance of the 18 Month Emergency Diesel Generator Auto Start and ESS Buses Energization on Loss of Offsite Power with a LOCA - Plant Shutdown surveillance test, the undervoltage start signals from the subject division's ESS Buses (two load groups) to the respective Emergency Diesel Generator (EDG) are disabled. With the undervoltage circuits disabled, the subject ESS Buses (two load groups) are considered not energized per Technical Specification 3.8.3. Unit 2 Technical Specification 3.8.3.1 requires that the Unit 1 load groups remain energized for common A.C. distribution system loads and only contains provisions for 1 load group not energized, hence entry into LCO 3.0.3.

Description of Changes

Add a new 3.8.3.1. Action Statement (Action j.) to allow 8 hours to perform Emergency Diesel Generator Testing (Surveillance Requirement 4.8.1.1.2.d.6.b)) and eliminate the need to enter LCO 3.0.3 while performing this required testing.

Safety Analysis

Analysis

Inhibiting the ESS buses in Unit 1 requires that an LCO be entered in Unit 2 due to the common loads shared between the Units. However, performance of the LOCA/LOOP or LOOP surveillance procedures does not cause any diesel generator to become inoperable as a result of inhibiting an ESS bus. The time frame the diesels are fully loaded in the testing evolution is for a five minute period to fulfill a Technical Specification requirement. If at that precise moment a LOCA/LOOP occurs in the operating unit, the ESS Buses in Unit 1 and 2 will de-energize except for the ESS Buses that are already connected to the diesels. The loading that the diesels under test will see at breaker closure will be from the load centers plus the tripping and starting of various pumps as reflected in surveillance procedures SE-124-A02-D02, "18 Month Diesel Generator Auto Start & ESS Energization on Loss of Offsite Power - Plant Shutdown" for each diesel generator, and is the worst case scenario for all cases. In the first few minutes of a postulated LOCA/LOOP occurring in the operating Unit while performing a LOCA/LOOP test, the operator would take immediate action to shed non-essential loads (in accordance with existing surveillance procedure requirements) from the diesels in the Unit under test to prepare the diesels for the shut down loads via the load sequence timers in the operating unit.



With one or more required A.C. buses (two load groups) de-energized, the remaining A.C. electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shutdown the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining power distribution subsystems could result in the minimum required ESF functions not being supported. Therefore, the required A.C. buses must be restored to OPERABLE status within a relatively short period of time. Eight hours has been accepted by the NRC as documented in NUREG 1433, Revision 1, "Standard Technical Specifications." The 8 hour time limit before requiring a unit shutdown balances the benefit of performing the required test with the low probability of a LOCA/LOOP while being in the degraded condition for the duration of the test. With one division without A.C. power, the unit is more vulnerable to a complete loss of A.C. power. However, to ensure that this risk is minimized, a significant amount of precautions are taken prior to test initiation. The governing surveillance procedures have a very restrictive list of test prerequisites and limitations, which ensure the availability of remaining A.C. electrical power distribution systems and reduce the potential for any single failure.

Conclusion

As stated above, the allowance of 8 hours to complete the required test prior to initiating shutdown actions ensures operator attention is focused on minimizing the potential loss of power to the remaining division, and restoring power to the effected division upon test completion; thus, not redirecting operator attention towards a plant shutdown pursuant to 3.0.3.

NO SIGNIFICANT HAZARDS CONSIDERATIONS

The proposed changes do not:

- I. *Involve a significant increase in the probability or consequences of an accident previously evaluated.*

The proposed change to allow 8 hours to perform Emergency Diesel Generator testing and eliminate the need to enter LCO 3.0.3 to perform this testing does not increase the chances for a previously analyzed accident to occur. The 8 hour time limit before requiring a unit shutdown balances the benefit of performing the required test with the low probability of a LOCA/LOOP while being in the degraded condition for the duration of the test. To ensure that this risk is minimized, a significant amount of precautions are taken prior to test initiation. The governing surveillance procedures have a very restrictive list of test prerequisites and limitations, which ensure the availability of remaining A.C. electrical power distribution systems and reduce the potential for any single failure. The allowance of 8 hours to complete the required test prior to initiating shutdown actions ensures operator attention is focused on minimizing the potential loss of power to the remaining division, and restoring power to the effected division upon test completion; thus, not redirecting operator attention towards a plant shutdown per 3.0.3. Therefore, the proposed change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Inhibiting the ESS buses in Unit 1 requires that an LCO be entered in Unit 2 due to the common loads shared between the Units. However, performance of the LOCA/LOOP or LOOP surveillance procedures does not cause any diesel generator to become inoperable as a result of inhibiting an ESS bus. The time frame the diesels are fully loaded in the testing evolution is for a five minute period to fulfill a Technical Specification requirement. If at that precise moment a LOCA/LOOP occurs in the operating unit, the ESS Buses in Unit 1 and 2 will de-energize except for the ESS Buses that are already connected to the diesels. In the first few minutes of a postulated LOCA/LOOP occurring in the operating Unit while performing a LOCA/LOOP test, the operator would have to take immediate action to shed non-essential loads from the diesels in the Unit under test to prepare the diesels for the shut down loads via the load sequence timers in the operating unit. Existing emergency procedures require that these actions will be taken. Therefore, the incorporation of this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

III. Involve a significant reduction in a margin of safety.

With one or more required A.C. buses, (two load groups) de-energized, the remaining A.C. electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shutdown the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining power distribution subsystems could result in the minimum required ESF functions not being supported. Therefore, the required A.C. buses must be restored to OPERABLE status within a relatively short period of time. Eight hours has been accepted by the NRC as documented in NUREG 1433, Revision 1, "Standard Technical Specifications." Therefore, the incorporation of this change will involve a significant reduction in the margin to safety.

ENVIRONMENTAL CONSEQUENCES

This request is consistent with the Susquehanna design basis, in that the allowance of 8 hours to complete the required test prior to initiating shutdown actions ensures operator attention is focused on minimizing the potential loss of power to the remaining division, and restoring power to the effected division upon test completion; thus, not redirecting operator attention towards a plant shutdown pursuant to 3.0.3. Therefore, no environmental consequences that have not been previously considered are anticipated.



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