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SUBJECT: Supplemetal application to amend License NPF-14, revising Tech Spec 4.8.1.1.3.d.6 re testing requirements for Diesel Generator E.

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JAN 2 1 1987

Director of Nuclear Reactor Regulation
Attention: Ms. E. Adensam, Project Director
BWR Project Directorate No. 3
Division of BWR Licensing
U.S. Nuclear Regulatory Commission
Washington DC 20555

SUSQUEHANNA STEAM ELECTRIC STATION
REVISIONS TO PROPOSED AMENDMENT 83 TO NPF-14
AND AMENDMENT 33 TO NPF-22
FIFTH DIESEL GENERATOR TECHNICAL SPECIFICATION CHANGES
PLA-2790 FILES R41-2, A17-2, S-100

REFERENCES: PLA-2596 dated February 10, 1986
PLA-2706 dated August 29, 1986
PLA-2730 dated October 1, 1986

Dear Ms. Adensam:

The referenced letters requested changes to Technical Specifications 3.3.7.9, 3.7.6.2, 3.7.6.5, 3.8.1.1, 3.8.1.2, 3.8.2.1, 3.8.2.2, 3.8.3.1, 3.8.3.2, 3.8.4.2 and B-3/4.8. At the request of your staff, PP&L is proposing changes to Specification 3.8.1.1 (Specifically 4.8.1.1.3.d.6), requesting a one-time exemption from one of the testing requirements under 4.8.1.1.3.d.6.b and providing our justification for testing diesel generator E to 4000kw instead of its nameplate rating of 5000kw.

The changes provided under this PLA-2790 supersede our previous changes to Specification 3.8.1.1 as submitted under the referenced letters. A description of each change (including justification) is provided below.

SPECIFICATION 4.8.1.1.3.d.6

Surveillance 4.8.1.1.3.d.6 is an 18 month surveillance consisting of two parts - 4.8.1.1.3.d.6a which delineates the surveillance requirements when diesel generator E is substituted for diesel generator A,B,C or D; and 4.8.1.1.3.d.6.b which delineates the surveillance requirements if PP&L chooses to utilize a load bank for testing diesel generator E.

4.8.1.1.3.d.6.a

In our original submittal this subsection 4.8.1.1.3.d.6.a required diesel generator E be substituted-on a rotational basis-for diesel generator A,B,C or

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D, started via a simulated LOCA/LOOP signal and that certain verifications be performed. At the NRC staff's request this subsection is being modified to include two additional diesel start tests - one from a simulated LOCA signal and one from a simulated LOOP signal, each with their own associated verifications. Testing diesel generator E via these three start signals is consistent with testing currently performed on the existing diesel generators. There is no impact to safety since diesel generator E will be substituted for diesel generator A,B, C or D and if it fails the three remaining diesels will be available for safe shutdown of the Units.

Also under this subsection 4.8.1.1.3.d.6a we have included a test which will verify diesel generator E's capability to synchronize with the offsite power source while the generator is loaded with emergency loads upon a simulated restoration of offsite power, transfer its loads to the offsite power source and be restored to standby status. This test is consistent with testing currently performed on the existing diesels. There is no impact to safety since diesel generator E will be substituted for diesel generator A,B,C or D and if it fails the three remaining diesels are available for safe shutdown of the Units.

4.8.1.1.3.d.6.b

Subsection 4.8.1.1.3.d.6.b provides surveillance requirements which afford the option of utilizing a load bank for testing diesel generator E which in turn eliminates the need to have a Unit outage. In our previous submittals, the surveillance under this subsection required diesel generator E be aligned to the load bank, and started via a simulated LOCA/LOOP signal. Once started the surveillance required a verification that diesel generator E started on the auto start signal, energized the simulated emergency bus with simulated permanently connected loads within 10 seconds, energized the simulated auto-connected loads and operated for 5 minutes or greater while its generator was loaded with simulated emergency loads. Again, at the NRC staff's request this subsection is being modified to include two additional diesel start tests - one from a simulated LOCA signal and one from a simulated LOOP signal, each with their own associated verifications. As stated previously, this testing is consistent with testing currently performed on the existing diesel generators. There is no impact to safety since diesel generator E will not be aligned to the Class 1E system.

It should be noted that PP&L recognized a test under this subsection would be necessary to demonstrate diesel generator E could power a bus. In this regard our original submittal contained a surveillance which required diesel generator E be substituted on a rotational basis for diesel generator A,B, C, or D and energize the appropriate emergency bus. Since diesel generator E is substituted for this particular test, the NRC staff has requested two additional tests be performed. The first one is a verification of diesel generator E's capability to synchronize with the offsite power source while the generator is loaded with emergency loads, upon a simulated restoration of offsite power, transfer its loads to the offsite power source and be restored to standby status; the second test is a verification that with diesel

generator E operating in a test mode and connected to its bus, a simulated ECCS actuation signal overrides the test mode by returning the diesel to standby operation and automatically energizes the emergency loads with offsite power. This testing is consistent with testing currently performed on the existing diesels and there is no impact on safety.

The Specification outlined above still leaves one problem during the initial startup of diesel generator E. The surveillance requirement to verify diesel generator E's capability to synchronize with the offsite power source while the generator is loaded with emergency loads . . ., cannot be performed without a Unit shutdown. This is because the generator cannot be loaded with emergency loads when the Units are at power. A unit shutdown is not planned prior to initial startup of diesel generator E therefore a one time exemption to this test is requested so the diesel generator E startup test program may proceed without forcing a Unit outage. PP&L proposes subsection 4.8.1.1.3.d.6.b be modified to include a footnote associated with this particular test which states the test need not be performed during the initial start-up of diesel generator E.

This one time exemption is justified on the basis that PP&L will perform the required surveillance during the first refueling outage following the initial declaration that diesel generator E is operable, and other equivalent testing will be performed during the startup test program which demonstrates compliance. That testing is as follows:

Requirement:

Verifying the diesel generator's capability to:

a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power.

Proposed Equivalent Test:

Diesel generator E will be loaded with simulated emergency loads on the load bank. With diesel generator E in the Emergency mode, the test will verify voltage and frequency can be varied and controlled, such that they could match the values at the 4Kv supply breaker. This will demonstrate that diesel generator E can synchronize to offsite power while loaded. This test will also demonstrate that the synch check relay, which was not affected by the diesel generator E installation could be satisfied, allowing the offsite power breaker to close.

Requirement:

b) Transfer its loads to the offsite power source, and

Proposed Equivalent Test:

After the synch check relay is satisfied, the offsite power breaker has a permissive to close. This circuitry was not affected by the diesel generator E modification, and is adequately tested under the existing surveillance program. Immediately upon closure of the offsite power breaker, the diesel generator output breaker receives a trip signal.

Requirement:

c) Be restored to its standby status.

Proposed Equivalent Test:

This requirement will demonstrate the ability of diesel generator E to reject a load equal to the emergency load rating without tripping. This will be tested by performing a 4000kw load reject test from an ESS bus and verifying the bus remains energized from offsite power and that diesel generator E does not trip but returns to a standby condition.

The summation of the above individual testing provides adequate testing of the same components (operating under similar conditions) as would be tested if diesel generator E were aligned to the Class IE system.

TESTING TO 4000KW vs. 5000KW

Regulatory Guide 1.108, Section C.2 outlines the recommended 18 month testing program for diesel generators. Throughout the guidelines, it is recommended that the diesels be tested to their continuous ratings and in one specific test (Regulatory Position C.2.a.3) their 2 hour rating.

PP&L requests an exemption from these recommendations as they apply to diesel generator E. Diesel generator E has a continuous rating of 5000kw versus 4000kw for the existing diesel generators however PP&L proposes testing diesel E to 4000kw on the basis that the testing program should simulate conditions as close as practical to those which would be experienced under normal conditions. This position is based on Sections B and C.1.b of Regulatory Guide 1.108; and, General Design Criterion 18.

Regulatory 1.108, Section B states "The testing of the diesel generator unit should simulate, where practicable, the parameters of operation... that would be expected if actual demand were to be placed on the system." Further, Section C.1.b of the same Regulatory Guide states "The design [of the diesel generator unit] should include provisions so that the testing of the units will simulate the parameters of operation... that would be expected if actual demand were to be placed on the system..." General Design Criterion 18 states "The system shall be designed with a capability to test periodically... (2) the operability of the systems as a whole and under conditions as close to design as practical..."

[illegible]

The intent of the guidance noted above is to provide assurance that diesel generators will perform their intended function. The intended function of diesel generator E is to be a reliable, operable substitute for any one of the existing diesel generator units.

The parameters of operation are such that the existing diesel generators were sized with a continuous rating of 4000kw. When diesel generator E is substituted for any one of the existing diesels, the paraments do not change except for the addition of diesel E's house loads which are minimal and do not cause the overall loading to exceed 4000kw. Therefore it is appropriate to test diesel E to the conditions it will experience when called upon to do its intended function.

The proposed changes do not:

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

The additional testing requirements do not involve a significant increase in the probability or consequences of an accident previously evaluated. The bounding case associated with the installation of a fifth diesel generator is the failure of a diesel generator and one loop of Emergency Service Water (ESW). The additional testing will not increase the consequences of a previously evaluated accident since the bounding accident has been analyzed in the Final Safety Analysis Report, and the additional testing is identical to the testing performed on the existing diesel generators. The probability of an accident previously evaluated occurring is impacted merely because an additional diesel generator is being incorporated into the plant design however that impact is nil and the probability of this proposed testing causing an accident is no different than the existing diesel generator testing since both testing programs are identical.

The proposed one-time test exemption does not increase the probability of an accident previously evaluated since adequate alternate testing will be performed to demonstrate compliance with the surveillance. Further the one time exemption does not increase the consequences of an accident previously evaluated since the worst case would be the failure of diesel generator E - the consequences of which are the same as the failure of one of the existing diesel generators.

Testing diesel generator E to 4000kw does not increase the probability of occurrence of an accident previously evaluated. The 4000kw load test is a test of the machine and will not impact the ability of diesel generator E to perform its intended function. Therefore the probability of diesel generator E failing is not a function of testing it to 4000kw or 5000kw. Similarly, testing to 4000kw will not increase the consequences of an accident. The worst case resulting from testing to 4000kw is the failure of diesel generator E which is no different than a failure of one of the existing diesel generators.

II. Create the possibility of a new or different kind of accident.

The additional testing requirements are consistent with testing currently performed on the existing diesel generators. Further the additional testing aligns the surveillances for diesel generator E to the recommendations in Regulatory Guide 1.108. The worst case scenario anticipated as a result of these additional tests, is the failure of diesel generator E when substituted for diesel A,B,C or D. The failure of one diesel generator is analyzed in the Final Safety Analysis Report (FSAR) and is incorporated into the design basis of the plant.

The one time exemption from the surveillance requirement to verify diesel generator E's capability to synchronize with the offsite power source while the generator is loaded with emergency loads, transfer its loads, and be restored to standby status does not increase the probability or consequences of an accident previously evaluated. The alternate testing proposed in lieu of performing the actual surveillance adequately demonstrates compliance with the surveillance since the same components are tested under the alternate testing as would be under the surveillance.

Testing diesel generator E to 4000kw does not increase the probability of occurrence of an accident previously evaluated. 4000kw is a function of the machine and will not impact the ability of diesel generator E to perform its intended function. Therefore the probability of diesel generator E failing is not a function of testing it to 4000kw or 5000kw. Similarly, testing to 4000kw will not increase the consequences of an accident. The worst case resulting from testing to 4000kw is the failure of diesel generator E which is no different than a failure of one of the existing diesel generators.

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

The proposed additional testing does not reduce the margin of safety since it provides increased assurance that diesel generator E is available as an operable substitute for diesel generator A,B, C or D. Further, the additional testing aligns diesel generator E's testing to the testing currently performed on the existing diesel generators.

The margin of safety is not reduced by the one-time exemption. Adequate alternate testing provides a high degree of confidence that diesel generator E is capable of synchronizing with offsite power, transferring loads and being restored to standby status. This level of confidence is founded on the knowledge that the same components will be tested during the alternate testing as would be tested during the actual surveillance.

Testing to 4000kw does not reduce the margin of safety. Diesel generator E will be demonstrated operable consistent with the existing diesel generators. Testing to 4000kw in fact increase the margin of safety since under this condition diesel generator E is actually being tested under the parameters it would experience if it were called upon to perform its safety function.

We request these Amendments be approved and made effective by January 27, 1987.

If you have any questions please contact D. J. Walters at (215) 770-7861.

Very truly yours,

H. W. Keiser
Vice President-Nuclear Operations

cc: Document Control Desk (original)
NRC Region 1
Mr. L. R. Plisco - NRC Resident
Mr. M. C. Thadani - NRC Project Manager

BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of :

PENNSYLVANIA POWER & LIGHT COMPANY : Docket No. 50-387

REVISION TO PROPOSED AMENDMENT NO. 83

FACILITY OPERATING LICENSE NO. NPF-14

SUSQUEHANNA STEAM ELECTRIC STATION
UNIT NO. 1

Licensee, Pennsylvania Power & Light Company, hereby files a revision to proposed Amendment No. 83 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:

H. W. Keiser
Vice President-Nuclear Operations

Sworn to and subscribed before me
this 21st of January, 1987.

Notary Public
MARTHA C. BARTO, NOTARY PUBLIC
ALLENTOWN, LEHIGH COUNTY
MY COMMISSION EXPIRES JAN. 15, 1990
Member, Pennsylvania Association of Notaries

BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of :

PENNSYLVANIA POWER & LIGHT COMPANY : Docket No. 50-388

REVISION TO PROPOSED AMENDMENT NO. 33

FACILITY OPERATING LICENSE NO. NPF-22

SUSQUEHANNA STEAM ELECTRIC STATION
UNIT NO. 2

Licensee, Pennsylvania Power & Light Company, hereby files a revision to proposed Amendment No. 33 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:

H. W. Keiser
Vice President-Nuclear Operations

Sworn to and subscribed before me
this 21st of January, 1987.

Notary Public

MARTHA C. BARTO, NOTARY PUBLIC
ALLENTOWN, LEHIGH COUNTY
MY COMMISSION EXPIRES JAN. 15, 1990
Member, Pennsylvania Association of Notaries