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KEISER, H. W. Pennsylvania Power & Light Co.
RECIP. NAME RECIPIENT AFFILIATION
ADENSAM, E. BWR Project Directorate 3

SUBJECT: Application for amends to Licenses NPF-14 & NPF-22, modifying Tech Spec 3.8.1.1 to reduce number of required starts on diesel generators when plant action statement or during 18 month surveillance tests. Fee paid.

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TITLE: OR Submittal: Fast Cold Starts of Diesel Generators GL-83-41 (GL-84-15

NOTES: 1cy NMSS/FCAF/PM. LPDR 2cys Transcripts. 05000387
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APR 23 1986

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, D.C. 20555

SUSQUEHANNA STEAM ELECTRIC STATION
PROPOSED AMENDMENTS 83 AND 36
TO NPF-14 AND NPF-22
DIESEL GENERATOR RELIABILITY
TECHNICAL SPECIFICATION CHANGES
PLA-2633 FILE R41-2,S024,A17-2

Docket Nos. 50-387
and 50-388

Dear Ms. Adensam:

Pursuant to 10CFR50.90, Pennsylvania Power & Light Company requests amendments, in the form of Technical Specification changes, to Operating Licenses NPF-14 and NPF-22 for Susquehanna Steam Electric Station Units 1 and 2.

This request modifies Technical Specification 3.8.1.1. The purpose of the proposed Technical Specification changes is to reduce the number of required starts on the diesel generators when in an action statement or during the 18 month surveillance tests. These proposed changes do not reduce the ability of the diesels to mitigate the consequences of an accident but are intended to increase the diesel's reliability by not excessively testing them. The listed changes are also consistent with the NRC Generic Letter 84-15, recently issued Technical Specifications to other utilities, and Cooper Energy Services recommendations (letter dated 9/23/85). Also FSAR Sections 9.5.4.8, 8.3.1.4.7 and SER Section 8.3.1 were reviewed and there is no conflict between these sections and the proposed changes. A description of each change, including a justification, is provided below.

Proposed 3.8.1.1 Action Statement a.

This action statement covers the actions when declaring one offsite circuit inoperable. Making this a separate action statement from the inoperable offsite power or one inoperable diesel generator is an administrative change. There are also three substantive technical items included within this proposed action statement.

The performance of Surveillance Requirement 4.8.1.1.2.a.4, demonstration of diesel operability, will be done:

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1) Within 24 hours of declaring the offsite circuit inoperable,

2) The diesels will not be started if successfully tested in the previous 24 hours.

3) If Surveillance 4.8.1.1.2.a.4 was not performed in the previous 24 hours, it will be performed once within 24 hours on each diesel.

Basis:

The reason to perform diesel operability tests following the loss of one offsite circuit is to ensure that the backup power source will be available and capable of starting as designed. The present action statement requires verification of diesel starting within four hours and then once every eight hours thereafter. Demonstration of diesel starting capability within four hours of a loss of an offsite power source and subsequent testing every eight hours thereafter is both excessive and unwarranted. The diesel manufacturer, Cooper Energy Services, agrees that starting them every eight hours does not demonstrate reliability and does not recommend starting them this frequently. Starting the diesels once in 24 hours without retesting is consistent with Generic Letter 84-15.

If the diesel has been tested in the previous 24 hours there is adequate assurance that the diesel will start. Diesel reliability is not suspect due to a loss of an offsite circuit.

Proposed 3.8.1.1 Action Statement b.

This action statement covers the appropriate actions when declaring one Emergency Diesel Generator inoperable. Making this a separate action statement for an inoperable diesel generator is an administrative change. There are also three substantive technical items included within this proposed action statement:

The performance of Surveillance Requirement 4.8.1.1.2.a.4, demonstration of diesel operability, will be done:

1) If a diesel became inoperative due to any other reason other than a preplanned outage, or testing as part of the outage activity, or as a result of substituting diesel generator E to the Class 1E System, the remaining diesels will be started.

2) If the remaining operable diesels must be started they will be started within 24 hours.

3) If the diesels are to be started within 24 hours they will only be started once to demonstrate operability.

Basis:

The operable diesels will not be started to demonstrate operability if a diesel is inoperable due to a preplanned outage, or testing as part of the outage activity or as a result of substituting diesel generator E to the Class 1E system. The reliability of the diesels is not in question or decreased if the cause for taking one out of service is for preventative maintenance or testing as part of the maintenance activity. Therefore, we do not advocate starting the operable diesels as a demonstration of their reliability.

The reason to perform a diesel operability test following the loss of a diesel, due to other than preplanned outage or testing as part of the outage activity, is to ensure that the remaining diesels will be available and capable of starting as designed. Specifically, an operability test of the remaining diesel provides assurance that the remaining operable diesels are not subject to the same failure (i.e., common mode failure). The operability testing within 24 hours is consistent with Generic Letter 84-15.

As discussed in Item 3.8.1.1.a above, repetitive operability testing every eight hours following the initial confirmation of diesel availability is unwarranted and counterproductive. To be consistent with the philosophy of reducing excessive testing and thereby enhancing diesel reliability, only one operability start is proposed as confirmation of the remaining diesels' availability.

Proposed 3.8.1.1 Action Statement c

This action statement covers the appropriate actions when declaring one offsite circuit and one diesel generator inoperable. (In the existing Technical Specifications this is action statement b.) The proposed action statement has three substantive changes:

The performance of Surveillance Requirement 4.8.1.1.2.a.4, demonstration of diesel operability, will be done:

1) If a diesel became inoperative due to any other reason other than a preplanned outage or testing as part of the outage activity, the remaining diesels will be started.

2) If the remaining operable diesels must be started they will be started within 8 hours.

3) If the diesels are to be started within 8 hours, they will only be started once to demonstrate operability.

The present requirement is to perform Surveillance Requirement 4.8.1.1.2.a.4 within three hours and at least once per 8 hours thereafter.

Basis:

The proposed changes are consistent with the changes to action statement b. These changes are also consistent with Generic Letter 84-15.

Proposed 3.8.1.1 Action Statement d

This action statement covers the verification to be performed when a diesel generator is inoperable. This statement currently refers to ACTION a or b; this is changed to ACTION b or c. This change is needed since old ACTION a was split into ACTION a & b, and b is the applicable reference for the subject statement. Old ACTION b is now ACTION c, hence the change to b & c. This is an administrative change.

Proposed 3.8.1.1 Action Statement e

This action statement covers the appropriate responses when declaring both offsite circuits inoperable. The proposed action statement has one substantive change and one clarification. The performance of Surveillance Requirement 4.8.1.1.2.a.4, demonstration of diesel operability, will be performed within 8 hours after a loss of both offsite circuits. The present requirement is to perform Surveillance Requirement 4.8.1.1.2.a.4 within 4 hours.

The clarification is that, if Surveillance Requirement 4.8.1.1.2.a.4 is successfully performed under this action statement this satisfies the diesel test requirement of Action Statement a.

Basis:

The proposed change is consistent with those made for action statements a, b, and c above. As previously noted, loss of an offsite circuit does not suggest that the diesels have become less reliable. This change is also consistent with Generic Letter 84-15.

Proposed 3.8.1.1 Action Statement f

The action statement covers the appropriate responses when two diesel generators are declared inoperable. The proposed action statement has two substantive changes and one clarification.

Performance of Surveillance Requirement 4.8.1.1.1.a will be performed within one hour and at least once per 8 hours thereafter.

The performance of Surveillance Requirement 4.8.1.1.2.a.4, demonstration of diesel operability, will be performed once for this action statement within 2 hours.

The clarification is that, if Surveillance Requirement 4.8.1.1.2.a.4 is successfully performed under this action statement this satisfies the diesel test requirement of Action Statement b.

Basis:

The proposed change is consistent with those made for action statements a, b & c above. This change is also consistent with Generic Letter 84-15.

Proposed 4.8.1.1.2.d.4 Surveillance Requirement

This proposed surveillance requirement will demonstrate the diesel's ability to respond to a loss-of-offsite power (LOOP) in conjunction with an ECCS actuation test signal, a LOOP by itself, and an ECCS signal without a LOOP. These three cases will be demonstrated with only one start of the diesel.

There are two substantive changes in this surveillance requirement:

1) The diesel will not be started for the simulated LOOP by itself.

2) The diesel will not be started for the ECCS actuation test signal, without a LOOP.

Basis:

The present requirements demand that the diesel start for each of three cases:

LOOP
ECCS Actuation Test Signal
LOOP and ECCS Actuation Test Signal

There is no need to start the diesel three separate times to demonstrate ability to respond in these three cases. The purpose of these tests is to demonstrate that these start signals will ultimately cause a diesel start. After it is demonstrated that the diesel starts by one of these signals the only purpose of performing the other two start cases is to check relays. It is not necessary to start the diesel to demonstrate that the initiation relays are working correctly.

The proposed change will start the diesel by a LOOP in conjunction with a ECCS actuation test signal and verify all the parameters presently required by these tests. Then while the diesel is running the LOOP and ECCS actuation test signals will be reset, and a LOOP will be simulated on the diesel bus. By verifying that the diesel start relays have deenergized, confirmation of the test objective is met, namely a LOOP would have caused a diesel start, bus deenergization, and load shedding. Similarly, the diesel start signal will be reset and the test performed again with a ECCS actuation test signal.

Proposed 4.8.1.1.2.d.5 Surveillance Requirement

This surveillance requirement is currently 4.8.1.1.2.d.7 and describes the 24 hour load test to be performed and a restart within five minutes of this load test.

The proposed surveillance requirement deletes the restart of the diesel within 5 minutes after the completion of the 24-hour test and deletes the asterisked note associated with this section.

Basis:

This is essentially an administrative change in that the restart test is being deleted from the 24 hour load run section, however, the restart test will be required in the next test, Surveillance Requirement 4.8.1.1.2.d.6. The LOOP restart test may place the plant in a precarious condition if performed during normal operation therefore this test is performed during an outage. However, this in turn places the diesel generator 24 hour run on the critical path and the potential for increasing outage duration. In addition, diesel generator temperatures are stable after one hour of operation at full load. Therefore the temperatures experienced after 24 hours are not significantly different than after one hour and the restart of the diesel can be completed after a one hour run.

Proposed 4.8.1.1.2.d.6 Surveillance Requirement

This surveillance requirement is part of present 4.8.1.1.2.d.7 and describes the restart test of the diesel generator.

The proposed change has the same requirements as prescribed in the existing Technical Specification however, it removes it from the 24-hour load run test.

Basis:

The basis for this change is consistent with that of 4.8.1.1.2.d.5.

Proposed 4.8.1.1.2.d.7 Surveillance Requirement

This surveillance requirement is currently 4.8.1.1.2.d.8 and requires that a verification be performed to assure that the auto-connected loads to each diesel generator do not exceed the 2000 hour rating of 4700 KW.

The proposed surveillance requirement has one substantive change.

The verification of the auto-connected loads will be done by calculation.

Basis:

This surveillance is to assure that the 2000 hour rating of the diesel generator is not exceeded. It is more suitable to demonstrate this by calculation rather than test for the following reasons:

- All the auto connected loads are known and the sum of these loads can be compared to the 2000 hour rating.
- All the auto connected loads would not necessarily be running at full load.
- By calculation the two unit loads could be considered rather than the loads associated with one unit.

Proposed 4.8.1.1.2.d.11 and 4.8.1.1.3.e.5 Surveillance Requirements

This surveillance requirement is currently 4.8.1.1.2.d.13 and requires verification that the listed diesel generator lockout features prevent diesel generator starting and/or operation only when required. This surveillance requirement has been re-written to more accurately reflect how the lockout features are verified. The current lockout features are overspeed, generator differential and engine low lube oil pressure.

Basis:

Change is administrative.

Proposed Change to Table 4.8.1.1.2-1

The subject table lists the frequency of diesel tests as a function of failures. The proposed change revises the valid tests from a per nuclear unit basis to a per diesel generator basis.

Basis:

The current test frequency is determined on a per nuclear unit basis. This requires that all the diesels be tested even if only one has been unreliable. This unnecessarily tests the reliable diesels more frequently than would normally be required. The change to a per diesel basis would demand that the less reliable diesels be tested to prove reliability. This change is consistent with Generic Letter 84-15.

The proposed changes do not:

(1) involve an increase in the probability or consequences of an accident previously evaluated. The proposed changes reduce test frequencies and modify loading requirements consistent with manufacturer's

recommendations. These changes are expected to enhance diesel reliability by minimizing severe test conditions and required number of starts. In this regard there is no increase in the probability of an accident. The consequences of any previously evaluated accident are not increased since the changes only involve diesel loadings and test frequencies. There are no physical modifications to the diesel generators as a result of these changes. Therefore the limiting accident is the failure of one diesel generator which has been evaluated in Section 8.3 of the Final Safety Analysis Report.

(2) create the possibility of a new or different kind of accident from any accident previously evaluated. As stated in Part I, the proposed changes are intended to enhance diesel reliability. Any accident created as a result of these changes would be no worse than the failure of a diesel generator which has been evaluated.

(3) involve a reduction in a margin of safety. The margin of safety has been determined acceptable assuming the loss of one diesel generator. The proposed changes will enhance diesel reliability thereby reducing the probability of a loss of a diesel generator.

We request these amendments be approved and made effective on June 15, 1986. Pursuant to 10CFR170.22, the appropriate fee is enclosed.

If you have any questions, please contact D. J. Walters.

Very truly yours,

H. W. Keiser
Vice President-Nuclear Operations

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

BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of :

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

PROPOSED AMENDMENT NO. 83

FACILITY OPERATING LICENSE NO. NPF-14

SUSQUEHANNA STEAM ELECTRIC STATION
UNIT NO. 1

Licensee, Pennsylvania Power & Light Company, hereby files 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 23 of April, 1986.

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

PROPOSED AMENDMENT NO. 36

FACILITY OPERATING LICENSE NO. NPF-22

SUSQUEHANNA STEAM ELECTRIC STATION
UNIT NO. 2

Licensee, Pennsylvania Power & Light Company, hereby files proposed Amendment No. 36 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 23 of April, 1986.

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