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 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylv 05000388
 AUTH. NAME AUTHOR AFFILIATION
 KEISER, H. W. Pennsylvania Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION
 ADENSAM, F. BWR Project Directorate 3

SUBJECT: Forwards application for revised Amends 83 & 36 to Licenses NPF-14 & NPF-22, respectively, revising Tech Specs to reduce number of required diesel generator starts in action statements or 18-month surveillance tests.

DISTRIBUTION CODE: A056D COPIES RECEIVED: LTR 3 ENCL 40 ^{ON SHELF} SIZE: 8 + 24
 TITLE: DR Submittal: Fast Cold Starts of Diesel Generators QL-83-41 (QL-84-15)

NOTES: 1cy NMSS/FCAF/PM. LPDR 2cys Transcripts. 05000387
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	BWR PDS LA		1	0	BWR PDS PD	01	3	3
	CAMPAGNONE		1	1	BWR PSB		1	1
	BWR RSB		1	1				
INTERNAL:	ACRS	13	6	6	ADM/LFMB		1	0
	AEOD	07	1	1	IE/DEPER/EAB 08		1	1
	NRR BWR PSB		1	1	NRR PWR-A PSB		1	1
	NRR PWR-B PEICS		1	1	NRR/DSRO/RSIB		1	1
	NRR/ORAS BRENNE		1	1	<u>REG FILE</u>	04	1	1
	RES BARANOWSKI		1	1	RES/DRAO/RRB 12		1	1
	RGN1	06	1	1				
EXTERNAL:	LPDR	03	2	2	NRC PDR	02	1	1
	NSIC	05	1	1				
NOTES:			3	3				

ACCESSION NO: 8000388 FACIL DO: 107 SUGARHORN STATION Unit 1 Pennsylvania
DOCS: 8000388 SUGARHORN STATION Electric Station Unit 1 Pennsylvania
AUTHOR: PROMYSLYAN Power & Light Co.
RECIPIENT: REPUBLICAN INFORMATION
ADMIN: BWR Project Director

SUBJECT: Formed application for revised Amends 88 & 89 to license
NRP-18 & NRP-22 to operate, revising Tech Specs to reduce
number of required diesel generator starts in certain
statements or 18-month surveillance tests.

DISTRIBUTION CODE: 4050 COPIES RECEIVED: 17 ENCL: 2
TITLE: OR Submit: East Cold State of Diesel Generator 01-83-41 (01-8-18)

NOTES: 17 NRP-18 ENCL: 2
NOTES: 17 NRP-22 ENCL: 2

RECIPIENT ID CODE NAME	COPIES	1 TR ENCL	RECIPIENT ID CODE NAME	COPIES	1 TR ENCL
BWR ADP	1	1	BWR EB	1	1
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BWR PDS LA	1	0	BWR PDS PD 01	3	3
CAMPANILE	1	1	BWR PDB	1	1
BWR RSB	1	1			
INTERNAL: VCRS	18	0	ADM/LFMB	1	0
AD-OD	07	1	IE/DEPER/EAR 08	1	1
NRR BWR PDR	1	1	NRR PWR-A PDR	1	1
NRR PWR-B PDR	1	1	NRR/DERO/RSH	1	1
NRRORAB BR/INE	1	1	REG FILE 04	1	1
RES DAWANOWSKI	1	1	RES/DRA/RRB 12	1	1
REMI	08	1			
EXTERNAL: LDR	03	2	NRC PDR 02	1	1
REMI	05	1			
		3			3



Pennsylvania Power & Light Company

Two North Ninth Street • Allentown, PA 18101 • 215 / 770-5151

Harold W. Keiser
Vice President-Nuclear Operations
215/770-7502

JUL 17 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
REVISION TO PROPOSED AMENDMENTS 83
AND 36 TO NPF-14 AND NPF-22
DIESEL GENERATOR RELIABILITY
TECHNICAL SPECIFICATION CHANGES
PLA-2684 FILE R41-2, S024, A17-2

Docket Nos. 50-387
and 50-388

Reference: PLA-2633 dated April 23, 1986

Dear Ms. Adensam:

The referenced letter requested changes to Technical Specification 3.8.1.1 which would reduce the number of required diesel generator starts when in an action statement or during the 18 month surveillance tests. Comments and requests for additional information from your staff necessitated modifications to those proposed changes. Modifications which respond to your Staff's concerns to the proposed changes are provided under this letter. All proposed changes are provided in this letter, therefore this submittal supersedes our previous submittal.

These proposed changes are consistent with NRC Generic Letter 84-15 and 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. 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. All references to our new "E" diesel generator have been deleted. The changes associated with the "E" diesel generator will be handled in a separate submittal. A description of each change, including a justification, is provided below.

Footnote #

This footnote is being deleted since all work associated with tying in the new "E" diesel generator has been completed and therefore this footnote is no longer required. This proposed change is an administrative change.

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At the time of the meeting, the following members were present: [illegible names]

The meeting was held on [illegible date] at [illegible location].

The following minutes were read and approved: [illegible text]

The meeting adjourned at [illegible time].

The next meeting will be held on [illegible date] at [illegible location].

The following members were elected to the committee: [illegible names]

The meeting was held on [illegible date] at [illegible location].

The following minutes were read and approved: [illegible text]

The meeting adjourned at [illegible time].

The following members were elected to the committee: [illegible names]

The meeting was held on [illegible date] at [illegible location].

The following minutes were read and approved: [illegible text]

The meeting adjourned at [illegible time].

The following members were elected to the committee: [illegible names]

The meeting was held on [illegible date] at [illegible location].

The following minutes were read and approved: [illegible text]

The meeting adjourned at [illegible time].

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Ms. E. Adensam

Proposed 3.8.1.1 Action Statement a.

This action statement covers the responses when declaring one offsite circuit inoperable. Making this a separate action statement from the existing action statement is an administrative change. There are also three 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) Within 24 hours of declaring the offsite circuit inoperable,
- 2) The diesel will not be started if successfully tested in the previous 24 hours.
- 3) If Surveillance Requirement 4.8.1.1.2.a.4 was not performed in the previous 24 hours it will be performed once on each remaining diesel for this action statement within 24 hours.

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 the diesels 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. The 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 responses when declaring one emergency diesel generator inoperable. Making this a separate action statement for an inoperable diesel generator is merely an administrative change. There are also two 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:

Very truly yours,
[Signature]

[Faint text]

[Faint text]

[Faint text]

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- 1) If the remaining operable diesels must be started they will be started within 24 hours.
- 2) If the diesels are to be started within 24 hours they will only be started once to demonstrate operability.

Basis:

The reason to perform a diesel operability test following the loss of another diesel, is to ensure that the remaining diesel 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). Rather than relying on previous surveillance testing, operability testing within 24 hours is proposed 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 responses 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 two technical changes:

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

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



[The text in this section is extremely faint and illegible due to the quality of the scan. It appears to be several paragraphs of a document.]

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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 back 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 not a technical 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 technical change and one clarification. The performance of Surveillance Requirement 4.8.1.1.2.a.4, demonstration of diesel operability, will be performed 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.

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 one technical change.

The performance of Surveillance Requirement 4.8.1.1.1.a, verification of breaker alignment, will be performed within one hour after entering the action statement and at least once per 8 hours thereafter.

Basis:

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

4.8.1.1.2.d.3 Surveillance Requirement

This surveillance indicates generator voltage shall not exceed 4360 volts. The number "4360" is a typographical error which was made when NRC issued Amendment No. 36. The correct value is 4560. This is an administrative change.

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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 three 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.
- 3) A new surveillance has been incorporated which describes testing of the LOCA relays.

Basis:

Safety functions occur as a result of:

- a. Loss-of-offsite power (LOOP)
- b. ECCS actuation signal (LOCA)
- c. A combination of a LOOP and a LOCA signal
- d. Either a LOOP or a LOCA signal

The circuits for LOOP and LOCA are independent. Testing these functions simultaneously is acceptable. The only advantage of testing these functions non-concurrently is to verify that one signal is not dependent upon the other signal. However, there is no reason to assume that the circuits have become dependent upon each other.

Testing for actions which occur as a result of a concurrent LOOP and LOCA signals should be tested with concurrent LOOP and LOCA signals. Since both signals are required for actuation, both signals should be present during testing.

Testing for item d. above is the only item where each signal should be individually actuated. One trip is defeated while the other is tested. Then the other trip is defeated while the first trip is tested.

In summary, testing of the LOOP and LOCA functions concurrently is acceptable as long as those functions which occur due to either signal are tested with only one signal at a time.

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.

11-11-68

Dear Mr. [Name]

I am writing to you regarding the [subject] which you mentioned in your letter of [date].

The [subject] is currently being handled by the [department] and we expect to have a final decision by [date].

I am sorry that it is taking longer than expected but we are doing our best to expedite the process.

If you have any questions or need further information, please do not hesitate to contact me at [phone number].

Thank you for your patience and understanding.

Sincerely,
[Name]

[Title]

[Address]

[City, State, Zip]

[Phone Number]

[Fax Number]

[Email Address]

[Additional Information]

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The proposed surveillance requirement deletes the restart of the engine within 5 minutes after the completion of the 24-hour test and deletes the asterisk 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 effect of this change is to allow the restart test to be performed within 5 minutes of completing a 1-hour 4000 KW run or within 5 minutes of reaching stable operating temperatures.

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 Surveillance Requirement 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 change.

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

Basis:

This test 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:

- o All the auto connected loads are known and the sum of these loads can be compared to the 2000 hour rating.
- o All the auto connected loads would not necessarily be running at full load.

- o By calculation the two unit loads could be considered rather than the loads associated with one unit.

4.8.1.1.2.d.11 (existing)

The requirement to verify the fuel transfer pump transfers fuel from each tank to the engine mounted day tank of each diesel generator has been deleted.

Basis:

Regulatory Guide 1.108 recommends this surveillance if the practice is part of normal operating procedures. At Susquehanna, this transferring is not part of normal operating procedures and should not be verified in the Technical Specifications. Fuel transfer from the fuel oil tank to the corresponding diesel generator day tank is tested every 31 days. There is no impact on safety since no credit is taken for this capability in any safety analyses.

Proposed 4.8.1.1.2.d.11 Surveillance Requirement

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. The proposed surveillance is a rewrite of the existing surveillance which more accurately reflects how the lockout features are verified.

Basis:

This change is administrative.

Proposed Change 4.8.1.1.3 - Reports

This section requires all diesel failures, valid or non-valid, to be reported to the Commission. The proposed change revises the method for determining the number of failures in the last 100 valid tests from a per nuclear unit basis to a per diesel generator basis.

Basis:

Consistent with criteria established for Table 4.8.1.1.2-1 (See justification for that Table).

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, changes the valid tests per nuclear unit basis to a per diesel generator basis.

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Basis:

The current test frequency is determined on a per nuclear unit basis. This requires that all the diesel be tested even if 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 September 1, 1986.

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
L. R. Plisco NRC



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