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Nuclear Business Unit

JUN 3 2000

LR-N000027

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

**REQUEST FOR ADDITIONAL INFORMATION
TECHNICAL SPECIFICATIONS 3/4 8.1. AC SOURCES
SALEM NUCLEAR GENERATING STATION UNIT NOS 1 AND 2
FACILITY OPERATING LICENSE NOS. DPR-70, DPR-75
DOCKET NOS. 50-272, AND 50-311**

By letter dated July 23, 1999, Public Service Electric and Gas Company (PSE&G) submitted to the Nuclear Regulatory Commission (NRC) a change to the Technical Specifications (TS) for the Salem Nuclear Generating Station, Units 1 and 2. Specifically, PSE&G requested a change to TS surveillance requirement 4.8.1.1.2.d.7 to remove the restriction to perform the 24-hour emergency diesel generator endurance run only during shutdown conditions (TAC Nos. MA6154 and MA6155).

By letter dated December 15, 1999, the NRC requested PSE&G to provide additional information relative to the above submittal. In attachment 1 to this letter, PSE&G documents its response to the request for additional information. The original questions, as stated in the December letter are restated in boldface type as written in the NRC's request for additional information and each request is followed by the PSE&G response in regular (non-boldface) type.

Should there be any additional questions or comments on this transmittal, please do not hesitate to contact us.

Sincerely,

M. B. Bezilla
Vice President - Operations

Attachment (1)

The power is in your hands.

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LR-N000027

-2-

JAN 31 2000

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ATTACHMENT 1
LR-N000027
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
TECHNICAL SPECIFICATIONS 3/4 8.1. AC SOURCES
SALEM NUCLEAR GENERATING STATION
UNITS 1 AND 2

Provide a description of the offsite power lineup to safety-related vital buses that will be used during the 24-hour emergency diesel generator (EDG) endurance (load run) test. The Nuclear Regulatory Commission (NRC) staff notes that during power operation, one station power transformer powers two safety-related vital buses and another powers one safety-related vital bus, if the EDG being tested is connected to the bus that is being powered by the transformer that is powering multiple vital buses, discuss whether the potential exists for perturbations during the test to affect the operability of both vital buses. Discuss any actions that can be taken to preclude this from occurring.

PSE&G response:

The Nuclear Regulatory Commission (NRC) staff understanding of the electrical power lineup as described above is correct. During power operation, one station power transformer powers two safety-related vital buses and another power transformer powers the remaining safety-related vital bus.

This is the same electrical lineup that exists during the performance of the normal 1-hour EDG test performed every 31 days. PSE&G does not transfer vital buses when performing the normal 1-hour EDG test. The ability to transfer automatically vital bus infeed breaker is one of the engineered safety features (TS 3.3.2.1 Table 3.3-3 item 7) designed to protect the integrity of the electrical system as a result of a potential fault in the 13 KV/4 KV electrical distribution. This transfer can be accomplished automatically (by the undervoltage instrumentation, as described in our original submittal), or manually by the control room operator. The ability to successfully transfer vital bus infeed breakers is also a required TS surveillance requirement (4.8.1.1.1.b.), which is performed every 18-months during shutdown.

PSE&G recognizes that synchronizing the emergency diesel generator to the grid for an additional 23 hours once per cycle will potentially expose the emergency diesel generator to an electrical disturbance for a longer period of time. The automatic response of the electrical distribution system protection scheme to any potential electrical disturbances and/or accident, as described in our submittal, is the same regardless of the test duration. This protection scheme is the same scheme that made it acceptable to the NRC staff to allow the performance of the monthly 1-hour run without transferring vital buses.

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LR-N000027
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
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UNITS 1 AND 2

The Salem vital buses are loaded with equipment needed to support power operations. Equipment such as service water, component cooling, charging pumps, and containment fan coil units are powered by the vital buses. Manually transferring the bus to the opposite power transformer will unnecessarily challenge the stability of the system.

Additionally, in support of the original submittal, PSE&G performed an assessment of the risk of an additional 24 hours of diesel generator testing. The increase in the baseline internal events core damage frequency (CDF) was determined to be 1.6E-07 events/year for both Salem Units 1 and 2. Based on the definition provided in Regulatory Guide 1.174, Paragraph 2.2.4, this increase is considered a very small increase in risk (less than 1.0E-06 events/year). Also as described in our original submittal, for any potential electrical disturbance or fault to affect more than one vital bus, regardless of electrical bus alignment, more than one single active failure of a safety related equipment/instrumentation would have to occur.

In conclusion, PSE&G believes that there is no net safety gain in the transferring of the infeed breaker to the opposite station power transformer to align the emergency diesel generator to one station power transformer. The installed protection scheme affords the necessary protection to assure that no electrical disturbance or fault will cause more than one vital bus to be affected in compliance with the Salem Licensing Basis.

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LR-N000027
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On page 12 (of 17) of the July 23, 1999, letter, you have proposed four administrative controls to be imposed during the on-line performance of the 24-hour EDGE run.

a. Which document(s) will include these controls?

b. Are there any plans to preclude performing this surveillance during unstable grid conditions or during other maintenance and test conditions that could have adverse effects on the off site power system? If not, discuss the reasons for not having these restrictions.

c. Are there any plans for restricting additional maintenance or testing of required safety systems, subsystems, trains, Components and devices that depend on the remaining EDG as sources of emergency power? If not, discuss the reasons for not having these restrictions,

PSE&G response to part a:

In the July 23, 1999, letter, PSE&G proposed to impose administrative controls during the on-line performance of the 24-hour EDG run. These requirements will be included in the Technical Specification (TS) surveillance test procedure. The procedure revision will be in place prior to the performance of the 24-endurance run test.

PSE&G response to part b:

PSE&G does not intend to perform this surveillance during unstable grid conditions or during other maintenance and test conditions that could have adverse effects on the off site power system. The proposed administrative controls will be modified to read as follows:

1. Only one Emergency Diesel Generator will be tested at a time.
2. The remaining emergency diesel generators will be operable.
3. An operator will continuously attend the EDG during testing.

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LR-N000027
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TECHNICAL SPECIFICATIONS 3/4 8.1. AC SOURCES
SALEM NUCLEAR GENERATING STATION
UNITS 1 AND 2

4. On-line performance of the Emergency Diesel Generator 24-hour endurance run will not be performed during unstable grid conditions such as: severe weather conditions, the threat of severe weather conditions, electrical instability or any maintenance or test conditions that could adversely affect the stability of the grid.

PSE&G response to part c:

NC.WM-AP.ZZ-0001(Q), Revision 1 "Work Management Process," (WMAP-0001) is the controlling document used by PSE&G for its work management. The on-line methodology for scheduling work is a program, which assures work operations are appropriately scheduled to insure plant safety, equipment availability as well as efficient use of station resources. Attachment M "NBU On-Line Scheduling Philosophy" of WMAP-001 provides the necessary guidance and controls to assure plant safety and equipment availability. Some of the good scheduling practices included in Attachment M are to: (1) schedule equipment that is a redundant train or performs a redundant function in separate windows of the scheduling matrixes, (2) schedule redundant trains or functions in a staggered basis.

The work control process employed by PSE&G and specified in WMAP-0001 already insures that redundant equipment will be maintained operable during periods of maintenance or testing of a safety related piece of equipment. This is the same work control process used successfully by the Hope Creek generating station in performing the 24-hour endurance run on-line. Therefore, no additional processes are required.

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LR-N000027
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
TECHNICAL SPECIFICATIONS 3/4 8.1. AC SOURCES
SALEM NUCLEAR GENERATING STATION
UNITS 1 AND 2

The current technical specification (TS) surveillance requirement (SR) requires that the EDG be loaded to 2760-2860 kW for the first 2 hours and 2500-2600,kW for the remaining 22 hours. The current SR does not include the power factor (pf) of the load. The Improved Standard TS includes a pf requirement based on EDG loading calculations. Thus, without a proper pf requirement, the proposed SR may not simulate actual loading of the EDG during accident conditions. Provide your justification for not modifying this SR to include the pf of the load.

PSE&G response:

PSE&G does not plan to include a power factor requirement in the Technical Specification surveillance requirement at this time.

The primary purpose behind the 24-hour endurance run is for the engine performance under load, i.e., Real Power. PSE&G has field verified that increasing/decreasing Vars on the system (under steady load) has very little effect on the Real Power (engine). Although the current TS do not require the EDGs to be loaded to a specific power factor, the surveillance test procedures require the EDGs to be loaded to a KVAR value of 1500. This KVAR value corresponds to a power factor range of approximately 0.86 to 0.89 during the performance of the 24-hour endurance test. A change to this requirement from the TS surveillance procedure will have to be screened through the 10 CFR 50.59 process.

Incorporating the requirement to maintain a specific power factor into the TS surveillance requirement will necessitate changing some of the administrative controls placed on the varmeter presently installed. Some of these changes and enhancements are: (1) The creation of an Engineering Instrument Accuracy Calculation (new engineering document) that would specify an 18-month calibration periodicity (vice the 54 month currently). It is this document that will drive most of the changes in the station regarding the varmeter. This would require a Preventive Maintenance Change Request (PMCR) and would be an increased recurring burden to the Station, (2) A TS Basis change would have to be developed on the reactive loading range picked, and (3) Material Master records and Bill Of Material for the varmeter would have to be revised.

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LR-N000027
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
TECHNICAL SPECIFICATIONS 3/4 8.1. AC SOURCES
SALEM NUCLEAR GENERATING STATION
UNITS 1 AND 2**

Therefore, PSE&G believes that there is no safety gain in the added burden/cost of adding this requirement to the TS surveillance because is already controlled by surveillance procedure (even though it is not part of the present TS).

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TECHNICAL SPECIFICATIONS 3/4 8.1. AC SOURCES
SALEM NUCLEAR GENERATING STATION
UNITS 1 AND 2**

Discuss whether the applicable TS Bases need to be revised.

PSE&G Response:

The Salem TS Bases provides design and clarifying information relative to the purpose, maintaining operability of the AC and DC sources, the limiting condition for operation (LCO) requirements, the action statements, and the applicability of the LCOs. It also provides clarifying statements relative to the purpose for performing certain TS surveillances and the basis behind the acceptance criteria for them.

The proposed change does not alter the physical manner in which the 24-hour emergency diesel generator endurance run test is performed; neither changes any surveillance acceptance criteria. The proposed change removes the restriction of having to perform the 24-hour endurance run during shutdown conditions. The proposed administrative controls imposed by PSE&G in the removal of the restriction will be incorporated into the TS surveillance test procedure, thus making them more readily available to the operators.

Therefore, PSE&G concludes that a change to the Salem TS Bases is not necessary at this time.