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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

NOVEMBER 13 1979

Docket Nos. 50-272
and 50-311

LICENSEE: PUBLIC SERVICE ELECTRIC AND GAS COMPANY (PSEG)

FACILITIES: SALEM UNITS 1 AND 2

SUBJECT: SUMMARY OF MEETING HELD ON OCTOBER 25, 1979 TO DISCUSS PROTECTION FROM DEGRADED VOLTAGE CONDITIONS

On October 25, 1979, the staff met with representatives of PSEG to discuss proposed modifications to the station electrical system to protect against sustained voltage degradation from offsite power. A list of attendees is attached.

This meeting was initiated by PSEG so that its representatives could elaborate on information related to the adequacy of the Salem electric distribution system voltage. In its letter of October 10, 1979 PSEG had shown that the Salem electric power system has the capacity and capability to automatically start and operate all safety loads within their voltage ratings for all anticipated transients and accidents. During the meeting, several methods for assuring sufficient electrical capacity for ECCS loads during sustained degraded voltage from offsite electrical grids were discussed.

All of the proposed methods involved modifications of the existing system by installation of relays that would actuate the transfer of the ESF buses from one offsite power transformer to the others and/or transfer to the emergency diesel generators when and if the voltage from th 13 kv/4 kv transformers were to be degraded to 90% plus an appropriate time delay. This protection would be in addition to the similar, existing scheme where relays are actuated by a grid degradation to 70%.

At the conclusion of a discussion of the merits and shortcomings of the various options, a consensus was reached that a combination of two modifications, as described below, would offer the greatest protection.

Modification No. 1: Add two sets of undervoltage relays, each set having three relays - one on each phase in parallel to the existing undervoltage relays set at 70% voltage. These relays would transfer the ESF buses from one offsite source auxiliary power transformer to the other. These additional relays would transfer the ESF buses (one relay per bus) for voltage less than 90% with a 30-second time delay.

Memo CCP

Modification No. 2: Add one undervoltage relay on each of the three buses parallel to the existing 70% and 2.5 second time delay loss of voltage relays. These relays would generate offsite source trip in two out of three logic and would be used for sustained degraded grid voltage below 90% with a time delay of 35 seconds.

PSEG will submit a written description of the proposed modification for staff review. The staff requested that this description specifically address the basis for the acceptability of the time delays selected under all design basis event conditions. If found to be acceptable, the modifications will probably be required to be implemented during the next reload outage for for each Salem unit. Consequently, after informing the staff that the lead time for delivery of the proposed relays might be approximately nine months, PSEG committed to submitting its proposal by January 1, 1980.

William J. Ross

William J. Ross, Project Manager
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
List of Attendees

ATTENDEES

NRC

W. J. Ross
I. Ahmed
F. Rosa
A. Dromerick
N. Trehan
S. Rhow

PSEG

R. Bashall
J. J. Wroblewski
K. J. Yaworsky
P. A. Moeller
W. M. Parincich
S. K. Bardhau