

Public Service
Electric and Gas
Company

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December 26, 1985

Director of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
7920 Norfolk Avenue
Bethesda, Maryland 20814

Attention: Ms. Elinor Adensam, Director
Project Directorate 3
Division of BWR Licensing

Dear Ms. Adensam:

BAILEY 862 SSLM TELECON OF DECEMBER 18, 1985
HOPE CREEK GENERATING STATION
DOCKET NO. 50-354

Pursuant to the telecon held on December 18, 1985 between representatives of Public Service Electric and Gas Company (PSE&G), Bechtel and the NRC concerning I) RFI susceptibility testing of Bailey 862 Solid State Logic Modules (SSLMs) and II) buffer output of the SSLMs, PSE&G hereby submits the following.

I. RFI EFFECTS ON BAILEY 862 MODULE

The RFI susceptibility testing of the Bailey 862 module carried out by Bailey was superseded by the testing done by TKC on the basis that the TKC test was a more realistic and truer test of these effects.

This judgement is based on the following:

1. The Bailey test was carried out in a test chamber with the logic module standing alone so that the reflections from the walls of the test chamber would amplify the signal reaching the board. Also a receiving antenna that had been used to calibrate the transmitter was left in the vicinity of the test specimen and as this was a tuned dipole, could have acted as a reflector to further distort the results. The signals were derived from an unmodulated signal generator sweeping from 20-500 Mhz with adverse effects only noted at below 300 Mhz, below the operations frequency in use at Hope Creek.

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2. The TKC test was carried out using a simulator with the card mounted first on the top standing alone but outside the building, then with the card in the card cage. The signals were derived from walkie talkies at 150 and 450 Mhz, being the two frequencies in use at Hope Creek. This was more representative of the actual operating conditions that the system will be working under.
3. Site verification testing was carried out to prove the effectiveness of zoning and the results substantiated the TKC tests in that no adverse effects resulted from the transmission of RF signals from the walkie talkies in use at Hope Creek.

II.

BUFFER OUTPUT

The buffer output of the SSLM operates as follows: 1) acts as a ground when activated by an input signal to turn on a main control room indicating light or energize an output relay within the logic assembly. 2) acts as a ground when activated by an input signal to activate an input buffer of another SSLM within the same logic assembly (both Class 1E and non-Class 1E circuits) or in a different logic assembly (non-Class 1E circuits only).

The cables that carry the signals into the SSLM buffer outputs are confined to elevations 102 and 137 of the control room complex. The maximum voltages these cables could be subjected to are 140v dc and 132v ac, substantially less than the 2500-3000v applied during the surge withstand testing.

Should a voltage surge of sufficient magnitude to cause damage be applied to a conductor connected to an SSLM output buffer, the damage would be confined to the output buffer. As noted in summary report number QR-3101AE93-75, the SSLM output buffer would not respond to an input signal following the surge withstand test due to component damages. No other adverse effects due to applying the voltage surge to the SSLM output buffer were noted.

12/26/85

Based on the above information provided for the operation of the SSLM output buffer and the voltage levels of the control complex cabling, the SSLM should not be subjected to high voltage surge. As noted in the summary report, if a surge did occur, the failure would be limited to the SSLM output buffer and would not propagate to other circuits.

In the event there are any questions with respect to the above, do not hesitate to contact us.

Sincerely,

CAM^c Neill Jr / JDB

C D.H. Wagner
USNRC Licensing Project Manager

R.W. Borchardt
USNRC Senior Resident Inspector