OCT 17 1984

Docket No. 50-387/388

Mr. Norman W. Curtis
Vice President
Engineering and Construction-Nuclear
Pennsylvania Power & Light Company
2 North Ninth Street
Allentown, Pennsylvania 18101

Dear Mr. Curtis:

SUBJECT: RESOLUTION OF BWR SCRAM DISCHARGE VOLUME (SDV) PIPE BREAK, NUREG-0803

In conjunction with the BWR Owner's Group (BWROG), an acceptable generic approach to resolution of the concerns identified in NUREG-0803 has been developed. This approach involves a reexamination of the postulated break in the scram discharge piping against current SRP licensing criteria, a reevaluation of the fracture mechanics properties of the piping both deterministically and probabilistically and the establishment of periodic visual pipe integrity verification based on the results of the fracture mechanics evaluation. Specifically, this approach has led to a generic resolution on the basis of the following findings:

1. The Mechanical Engineering Branch (MEB) has concluded that there is reasonable assurance that the stress levels in the SDV piping system will not cause a through-wall leakage crack in accordance with the criteria of SRP Section 3.6.2.

2. The findings by the Materials Engineering Branch (MTEB) support the above conclusion. Specifically, after review of the BWROG deterministic fracture mechanics submittals, MTEB has concluded that even with the staff postulated through-wall flaw in the piping system, it would not propagate into a break under the indicated loads, and the bounding values for leak rates, loading conditions, and material properties identified by the BWROG are reasonable. MTEB has also found that the above non-break determination by deterministic fracture mechanics analysis is supported by the probabilistic fracture mechanics evaluations.

3. The Auxiliary Systems Branch (ASB) has concluded that the leakage from the flaw postulated by the staff in the system is low enough ($\leq$3.5 gpm; $\leq$5.3 gpm even conservatively assuming 400 scram cycles for the 40-year plant life time) such that a harsh environment will not result, thus precluding the need for environmentally qualifying equipment exposed to the leak environment. The Equipment Qualification Branch (EQB) concurs with the above conclusion. ASB has also concluded that the periodic leak inspections (required by Section XI of the ASME Code for Class 1 and Class 2 piping) and the additional periodic post-scram reset walkdown recommended by the BWROG provide adequate leak detection capability for the system. ASB has further concluded that the normal operating procedures for BWRs and applicable generic emergency procedure guidelines (EPGs) for secondary containment provide adequate guidance for mitigating the consequences of leakage resulting from the staff postulated flaw in the SDV piping system.

In summary, the staff finds the above approach and conclusions provide sufficient defense-in-depth to preclude the SDV pipe break and its resulting consequences as postulated in NUREG-0803.

In order to resolve the plant specific concerns, PP&L is requested to provide written verification that 1) the leak rates, loading conditions and material properties for the SDV piping systems at Susquehanna Units 1 and 2 and bounded by the limiting values for these parameters identified by the BWROG, 2) Susquehanna Units 1 and 2 comply with the BWROG recommendations for leak detection capability, 3) Susquehanna Units 1 and 2 comply with the applicable generic secondary containment EPGs, and 4) provide assurance that the expected radiation fields and contact exposure levels at the SDV piping systems in Susquehanna Units 1 and 2 will not impair the performance of routine tests, inspections and post-scram reset walkdowns.

If your have any questions regarding the matter please contact R. Perch, Project Manager.

Sincerely,

Original signed by

A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing

cc: See next page

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