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December 16, 1981

Mr. A. Schwencer, Chief
Licensing Branch #2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: LaSalle County Station Units 1 and 2
Increase in Accident Pressure, Pa
NRC Dockets Nos. 50-373 and 50-374

Reference (a): C. E. Sargent letter to A. Schwencer dated November 24, 1981.

Dear Mr. Schwencer:

The purpose of this letter is to provide information requested by Mr. A. Bournia in recent telephone conversations concerning the increase in the LaSalle County Station Primary Containment Accident Pressure, Pa. Also provided is our basis for not reperforming the high pressure bypass leakage test as a result of the change in accident pressure, Pa.

a) Factors Affecting Pa Change

The peak drywell pressure has changed from the initially reported value of 32.5 psig to a revised calculated value of 39.6 psig. The increase is identified in changes to Chapter 6 pages in the FSAR Amendment 59. This change was provided to the NRC staff by transmittal of Reference (a). The reason for the increase was two-fold:

1. Recalculation of the pressure rise associated with the inclusion of subcooled inventory in the recirculation line break accident. This increment of change amounted to 1.5 psi or approximately 21 percent of the total increase.

2. Recalculation of the inlet pressure drop across the inverted covers on the drywell downcomers from the as-built condition. This increment of change amounted to 5.6 psi or roughly 79 percent of the total increase.

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b) High Pressure Bypass Leakage Test

The maximum differential pressure acting downward on the drywell floor changed from 17 psi to 24.2 psi. The associated temperature curve had no significant change relative to structural impact. The increased Pa is of most significance on testing rather than on design, however, the high pressure structural adequacy test across the drywell floor need not be repeated because it was originally performed at 25 psi differential pressure. Additionally, the high pressure bypass leakage test was performed as a one-time test at 17.7 psid which corresponded to the original peak downward differential pressure. The purpose of that test was to ensure that no unexpected phenomenon existed for the configuration of a concrete floor with a stainless-steel lined suppression pool ceiling constituting the barrier. Because the flow is sonic at this pressure 17.7 psid (and at 25 psid also), additional increases in pressure will not significantly increase the flow rate. The measured value which is compared to the acceptance criteria is an area of the leakage path ($A/\sqrt{P}$) which will not change at different pressures.

For LaSalle the leakage measured in the initial test at 17.7 psid was only 2.7% of the calculated area ($A/\sqrt{P}$ = 0.03 ft^2), which is a very small fraction of the acceptance criteria. A large fraction of this small leakage rate was through the covers to the downcomers which could not be totally sealed. This is not a bypass leakage path, however it could not be sealed off during the test because the covers on some downcomers could not be sealed without damaging instruments and other equipment installed in the containment (normal confirguation).

Based upon the test results and their small magnitude as stated above, the initial test is adequate to meet the intent of SRP 6.2.1.1.c. Additionally:

1) The peak drywell floor differential pressure occurs during the first few seconds of the design-basis LOCA such that this peak does not coincide with the limiting case for steam suppression bypass. (See FSAR Figures 6.2-2 and 6.2-14). The peak differential pressure resulting from a large pipe break has an allowable leakage capacity ($A/\sqrt{P}$) approximately five times greater than the design value. Therefore, testing the drywell floor at the peak differential pressure and then applying an allowable leakage based upon the smallest line break area represents an extremely conservative approach.

2) The limiting case for steam suppression bypass leakage occurs during a small line break that is assumed to be undetected, hence it continues for an extended period. The differential pressure across the drywell floor during this scenerio is insufficient to clear the suppression downcomer vents, but it is the driving force behind the bypass leakage. This pressure differential is in the range of 5 psid which is markedly less than the already tested value of 17.7 psid. The test result established that a significant margin exists.

3) The existence of the stainless steel liner in the wetwell which backs up the concrete floor should be acknowledged as a barrier to progesssively increasing leakage cracks in the concrete floor. Any potential leakage site through that barrier would evidence itself in a localized bulge in the stainless steel liner.

In accordance with the information provided above, our current plans do not include a reperformance of the high pressure bypass leakage test. We request your concurrence of this plan as soon as possible. This is necessary to resolve a concern, expressed by an NRC Region III Inspector, regarding this subject.

If there are any questions in this regard, please contact this office.

Very truly yours,

C E Sargent

C. E. Sargent
Nuclear Licensing Administrator

cc: NRC Resident Inspector - LSCS

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