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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

PROCEDURE FOR CONTINUATION OF CONTAINMENT INTEGRATED LEAKAGE RATE TEST WITH EXCESSIVE LEAKAGE

WATERFORD GENERATING STATION, UNIT 3

DOCKET NO. 50-382

1.0 INTRODUCTION

By letter dated March 3, 1988, Louisiana Power and Light (LP&L) requested a partial exemption from Appendix J to 10 CFR Part 50, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors". The exemption requests waiver of the Appendix J, III.A.1(a) requirement to stop the Type A test (Containment Integrated Leakage Rate Test or CILRT) if excessive leakage is determined and instead to allow adjustments in the Type A leakage rate considering the "as found" and "as left" conditions.

2.0 EVALUATION

Appendix J, Section III.A.1.(a), in part requires that if during a Type A test, potentially excessive leakage paths are identified which will interfere with satisfactory completion of the test, the Type A test shall be terminated and local leakage testing performed on the paths of concern. Repairs and/or adjustments shall be made to affected equipment and a Type A test performed. The staff has in the past, concluded that acceptable means exist for satisfactory completion of Type A tests when excessive leakage is discovered without terminating the Type A test.

The objective of Appendix J Type A testing is to determine both the "as found" containment leakage condition and also the final ("as left") condition, if repairs are made. First, a satisfactory completion of a Type A test is essential to ensure that actual leakage rates ("as left") do not exceed those rates assumed by accident analyses. Second, the "as found" condition of the containment must be measured to obtain an indication of the ability of the containment to remain leaktight throughout the period between tests and for purpose of determining subsequent testing frequency.

The licensee's proposal describes the approach it intends to follow to ensure the technical adequacy of Type A testing. Specifically, when excessive leakage is experienced during a Type A test, significant leaks will be identified and isolated from the test. Penetrations so isolated will be capable of local leakage rate testing. Once these leaks have been isolated, the Type A test will be continued. Following the Type A test, local leakage rates will be measured

before and after repairs to each isolated leakage path. The results of the Type A test will then be back-corrected using the "minimum pathway" leakage rate for each penetration. The local leakage measurements before the repair are added to the Type A results to determine the "as found" condition and possible "as found" Type A test failure, which could increase future Type A test frequency as required by Section III.A.6 of Appendix J. The after-repair measurements (the Type A test measurement plus the "as left" local leakage rates) determine the final acceptability of the test. For a satisfactory Type A test, the corrected Type A results (the sum of the appropriate local leakages and the Type A test results) must be less than 75% of the maximum allowable leakage rate, La or Lt as appropriate.

An approach of this type is described in the recently proposed Appendix J revisions [51 FR 39538, October 29, 1986]. This approach provides the information needed concerning the pre-and post-repair ("as found" and "as left") containment condition. At the same time, it will tend to minimize occupational radiation exposure as well as the length of time for which the containment is pressurized. Therefore, it satisfies the intent and objective of Appendix J Type A testing.

3.0 CONCLUSION

Based on review of the licensee's request, the staff concludes that the licensee's approach for continuing Type A containment leakage testing when excessive leakage is identified satisfies the intent of the regulation and is therefore, technically acceptable.

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