three Type A containment integrated leakage rate tests (ILRTs) of the primary containment, at approximately equal intervals during each 10-year service period. The third test of each set shall be conducted when the plant is shut down for the 10-year inservice inspection program.

III

By letter dated April 28, 1995, the licensee requested temporary relief from the requirement to perform a set of three Type A tests at approximately equal intervals during each 10-year service period of the primary containment. The requested exemption would permit a one-time interval extension of the third Type A test by approximately 18 months (from the October 1995 refueling outage, to the February 1997 refueling outage) and would permit the third Type A test of the second 10-year inservice inspection period to not correspond with the end of the current American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) inservice inspection interval.

The licensee's request cites the special circumstances of 10 CFR 50.12, paragraph (a)(2)(ii), as the basis for the exemption. The licensee points out that the existing Type B and C testing programs are not being modified by this request and will continue to effectively detect containment leakage caused by the degradation of active containment isolation components as well as containment penetrations. It has been the experience at Surry Unit 1 during the Type A tests conducted from 1986 to date, that the Type A tests have not identified any significant sources of leakage in addition to those found by the Type B and C tests.

During operation, the Surry Unit 1 containment is maintained at a subatmospheric pressure (approximately 10.0 psia) which provides a good indication of the containment integrity. Technical Specifications require the containment to be subatmospheric whenever Reactor Coolant System temperature and pressure exceeds 350 °F and 450 psig, respectively. Containment air partial pressure is monitored in the control room to ensure Technical Specification compliance. If the containment air partial pressure increases above the established Technical Specification limit, the unit is required to shut down.

IV

In the licensee's April 28, 1995, exemption request, the licensee stated that special circumstance 50.12(a)(2)(ii) is applicable to this situation, i.e., that application of the regulation is not necessary to achieve the underlying purpose of the rule.

Appendix J states that the leakage test requirements provide for periodic verification by tests of the leak tight integrity of the primary reactor containment. Appendix J further states that the purpose of the tests ''is to assure that leakage through the primary reactor containment shall not exceed the allowable leakage rate values as specified in the Technical Specifications or associated bases''. Thus, the underlying purpose of the requirement to perform type A containment leak rate tests at intervals during the 10-year service period is to ensure that any potential leakage pathways through the containment boundary are identified within a time span that prevents significant degradation from continuing or becoming unknown.

The NRC staff has reviewed the basis and supporting information provided by the licensee in the exemption request. The NRC staff has noted that the licensee's record of ensuring a leak-tight containment has improved markedly since 1986. All ''as-found'' Type A tests since 1986 have passed and the results of the Type A testing have been confirmatory of the Type B and C tests which will continue to be performed. The licensee will perform the general containment inspection although it is only required by Appendix J (Section V.A.) to be performed in conjunction with Type A tests. The NRC staff considers that these inspections, though limited in scope, provide an important added level of confidence in the continued integrity of the containment boundary.

The Surry Unit 1 containment is of the subatmospheric design. During operation,the containment is maintained at a subatmospheric pressure (approximately 10 psia) which provides for constant monitoring of the containment integrity and further obviates the need for Type A testing at this time. If the containment air partial pressure exceeds the established Technical Specification limit, the unit must be shut down.

The NRC staff has also made use of a draft staff report, NUREG–1493, which provides the technical justification for the present Appendix J rulemaking effort which also includes a 10-year test interval for Type A tests. The integrated leakage rate test, or Type A test, measures overall containment leakage. However, operating experience with all types of containments used in this country demonstrates that essentially all containment leakage can be detected by local leakage rate tests (Type B and C). According to results given in NUREG–1493, out of 180 ILRT reports covering 110 individual reactors and approximately 770 years of operating history, only 5 ILRT failures were found which local leakage rate testing could not detect. This is 3% of all failures. This study agrees well with previous NRC staff studies which show that Type B and C testing can detect a very large percentage of containment leaks.

The Nuclear Management and Resources Council (NUMARC), now the Nuclear Energy Institute (NEI), collected and provided the NRC staff with summaries of data to assist in the Appendix J rulemaking effort. NUMARC collected results of 144 ILRTs from 33 units; 23 ILRTs exceeded $1.0L_a$. Of these, only nine were not due to Type B or C leakage penalties. The NEI data show that in about one-third of the cases exceeding allowable leakage, the as-found leakage was less than $2L_a$; in one case the leakage was found to be approximately $2L_a$; in one case the as-found leakage was less than $3L_a$; one case approached $10L_a$; and in one case the leakage was found to be approximately $21L_a$. For about half of the failed ILRTs the as-found leakage was not quantified. These data show that, for those ILRTs for which the leakage was quantified, the leakage values are small in comparison to the leakage value at which the risk to the public starts to increase over the value of risk corresponding to L_a (approximately $200L_a$, as discussed in NUREG–1493). Therefore, based on those considerations, it is unlikely that an extension of one cycle for the performance of the Appendix J, Type A test at Surry, Unit 1, would result in significant degradation of the overall containment integrity. As a result, the application of the regulation in these particular circumstances is not needed to achieve the underlying purpose of the rule.

Based on generic and plant specific data, the NRC staff finds the basis for the licensee's proposed exemption to allow a one-time exemption to permit a schedular extension of one cycle for the performance of the Appendix Type A test, provided that the general containment inspection is performed, to be acceptable.

Pursuant to 10 CFR 51.32, the Commission has determined that granting this Exemption will not have a significant impact on the environment (60 FR 35439).

This Exemption is effective upon issuance and shall expire at the completion of the 1997 refueling outage.