Section 32

DRAFT SUPPORTING STATEMENT
FOR
PRIMARY REACTOR CONTAINMENT LEAKAGE TESTING FOR WATER-COOLED POWER REACTORS

10 CFR 50, APPENDIX J

DESCRIPTION OF THE INFORMATION COLLECTION

10 CFR 50, Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors," provides for preoperational and periodic verification, by tests, of the leakage integrity of the primary reactor containment and systems and components which penetrate containment of water-cooled power reactors other than facilities for which the certifications required under 10 CFR 50.82(a)(1) have been submitted. Tests are conducted upon completion of construction of the primary reactor containment building (containment), and periodically thereafter.

Two major revisions have been made to Appendix J. One rule change affected only the reporting requirements while the second completely changed the character of the rule. The latter change also affected reporting requirements.

On March 14, 1995, the NRC announced in the Federal Register (60 FR 13615) that it was amending 10 CFR 50, Appendix J, to eliminate the requirement for licensees under Part 50 to submit summary reports of containment leakage rate tests to the NRC, but to preserve the requirements of 50.72 and 50.73 under which licensees currently report any instances of leakage exceeding authorized limits in the technical specifications of the license.

On September 26, 1995, the NRC announced in the Federal Register (60 FR 49505) that it was amending Appendix J to provide a performance-based option for leakage rate testing of containments of light water-cooled nuclear power plants. Appendix J is now divided into two options: Option A which is the previous Appendix J, and Option B, which is a performance-based rule in which the intervals between tests are established, in part, based on the previous leakage rate performance of the component or system. A licensee may adopt, on a voluntary basis, either or both the overall leakage testing requirements (Type A tests) and the local leakage rate testing requirements (Type B and C tests). In either case, the recordkeeping requirements of Option B must be implemented. The preoperational and periodic Type A, B and C tests must be documented to show that the performance criteria for leakage have been met. The comparison to previous results of the performance of the overall containment system and of individual components within it must be documented to show that the test intervals established for the containment system and components within it are adequate. These records must be available for inspection at plant sites, but licensees are not required to submit these results to the NRC.

OPTION A

Section III requires licensees to develop a program consisting of a schedule for conducting Type A, B and C tests for leak testing the primary reactor containment and related systems and components penetrating the primary containment pressure boundary. Since this information is presented in the Final Safety Analysis Report (FSAR), any burden involved in its preparation is considered under preparation of the FSAR. (See the Section 1 Supporting Statement.)

Section III.A.6 states that if a licensee's containment does not pass the Type A test, the test schedule applicable to subsequent Type A tests will be reviewed and approved by the Commission. No notifications are expected during this clearance period.

Section V.B requires recordkeeping of test results. The preoperational and periodic tests must be documented in a readily available summary report that will be made available for inspection, upon request, at the nuclear power plant. The summary report shall include a schematic arrangement of the leakage rate measurement system, the instrumentation used, the supplemental test method, and the test program selected as applicable to the preoperational test, and all the subsequent periodic tests. The report shall contain an analysis and interpretation of the leakage rate test data for the Type A test results to the extent necessary to demonstrate the acceptability of the containment's leakage rate in meeting acceptance criteria.

For each periodic test, leakage test results from Type A, B, and C tests shall be included in the summary report. The summary report shall contain an analysis and interpretation of the Type A test results and a summary analysis of periodic Type B and Type C tests that were performed since the last Type A test. Leakage test results from Type A, B, and C tests that failed to meet the acceptance criteria of Appendix J, Sections III.A.5(b), III.B.3, and III.C.3 shall be included in a separate accompanying summary report that includes an analysis and interpretation of the test data, the least squares fit analysis of the test data, the instrumentation error analysis, and the structural conditions of the containment or components, if any, which contributed to the failure in meeting the acceptance criteria. Results and analyses of the supplemental verification test employed to demonstrate the validity of the leakage rate test measurements shall also be included.

OPTION B

Section III.A requires that a Type A test be conducted 1) after the containment system has been completed and is ready for operation and 2) at a periodic interval based on the historical performance of the overall containment system as a barrier to fission product releases to reduce the risk from reactor accidents. The test results must be compared with previous results to examine the performance history of the overall containment system to limit leakage.

Section III.B requires Type B and Type C pneumatic tests to be conducted (a) prior to initial criticality, and (b) periodically thereafter at intervals based on the safety significance and historical performance. The performance-based testing program must be established which contains a performance criterion for Type B and C tests, consideration of leakage-rate limits and factors that affect performance, evaluations of performance, and comparison to previous test results.

Section IV requires that the results of preoperational and periodic Type A, B, and C tests must

be documented to show that performance criteria for leakage have been met. The comparison to previous results of the performance of the overall containment system and of individual components within it must be documented to show that the test intervals established for the containment system and components within it are adequate. These records must be available for inspection at plant sites.

Section V.A requires that if the requirements for tests in Option B, Section II.A, or Option B, Section III.B, are implemented, the recordkeeping requirements in Option B, IV, for these tests must be substituted for the reporting requirements of the tests contained in Option A.

Section V.B.2 requires that a licensee or applicant for an operating license can adopt Option B, or parts thereof, by submitting its implementation plan and request for revision to technical specifications. (Burden for changes to technical specifications is covered by the Section 2 Supporting Statement.) The regulatory guide or other implementation document used to develop a performance-based leakage program must be included, by general reference, in the plant's technical specifications. The submittal for technical specification revisions must contain justification, including supporting analyses, if the licensee chooses to deviate from methods approved by the Commission and endorsed in a regulatory guide. The detailed licensee programs for conducting testing under Option B must be available at the plant site for inspection.

A. JUSTIFICATION

1. Need for and Practical Utility of the Collection of Information

The primary reactor containment is designed to contain any operational or post-accident releases of radioactivity within specified limits. Calculations of the impact of a radiological release on public health and safety are dependent upon predictable leakage from the containment. The required tests, and their documentation, ensure that the containment is built and maintained as designed, and that leakage limits are not exceeded.

2. Agency Use of Information

Preoperational leakage tests are the only means to verify that containment structures have in fact been built within the leakage levels specified as a condition of licensing by the NRC. Information included in the on-site licensee records is reviewed to determine the results achieved, as well as to judge the accuracy and validity (reliability) of the data.

The records of the periodic leakage tests are needed by the NRC in order to verify, on an audit basis, that containment leakage is maintained below the specified level throughout its operational life. Periodic information is needed for the same reasons as preoperational test information, but in addition, is compared with that in the preoperational test report and previous periodic test reports.

3. Reduction of Burden Through Information Technology

There is no legal obstacle to the use of information technology. Moreover, NRC encourages its use; however, at the current time, no responses are submitted electronically.

4. Effort to Identify Duplication and Use Similar Information

The provisions of this regulation are not duplicated by other government regulations. The Information Requirements Control Automated System (IRCAS) was searched for duplication, and none was found. Power reactor licensees are the only source for this information.

5. Effort to Reduce Small Business Burden

This information collection requirement does not affect small business.

6. Consequences to Federal Program or Policy Activities if the Collection is Not Conducted or is Conducted Less Frequently

The NRC would not be able to determine, in a timely fashion, whether structures have been built and maintained within limits that have been established to ensure the protection of the health and safety of the public.

7. Circumstances which Justify Variation from OMB Guidelines

Leakage test results, implementation plans and records of the performance-based testing program must be kept for the operating lifetime of each nuclear plant for reference purposes.

8. Consultations Outside the NRC

Notice of opportunity for public comment on the information collections has been published in the Federal Register.

9. Payment or Gift to Respondents

Not applicable.

10. Confidentiality of Information

This information is usually not confidential or proprietary. If it is submitted as such, it is protected in accordance with 10 CFR 2.790 of the NRC's regulations.

11. Justification for Sensitive Questions

This regulation does not request sensitive information.

12. Estimated Industry Burden and Burden Hour Cost

OPTION A

Those licensees remaining partially under Option A are expected to document Appendix J test results approximately every 3-1/3 years in a summary report that will be made available for inspection at plant sites. The number of licensees remaining partially under Option A during this clearance period is 4. Each summary report requires about 80 hours. The recordkeeping burden required to maintain the information to produce this report is 320 hours (80 x 4) every 3 1/3 years or approximately 100 hours annually.

OPTION B

40 hours annually are necessary for analysis and maintenance of the ongoing program for each licensee. This results in an estimated recordkeeping burden of 4,160 hours for this clearance period based on 104 licensees per year.

Based on the above, the total annual recordkeeping burden and cost for NRC licensees to comply with Appendix J is 4,260 hours at a cost of $600,660 (100 + 4160 X $141/hr).

See Table 1.

13. Estimate of Other Additional Costs

None.

14. Estimated Annualized Cost to the Federal Government

The NRC has minimized recordkeeping requirements and has eliminated the reporting requirements in Appendix J, except for a one-time requirement to submit implementation plans for licensees adopting Option B which has been completed. The burden on the Federal government for inspection of records is estimated to be minimal. Costs to the NRC are fully recovered through fee assessments to NRC licensees pursuant to 10 CFR Parts 170 and/or 171.

15. Reasons for Changes in Burden or Cost

The total annual recordkeeping burden and cost to maintain compliance with Appendix J has decreased from 13,080 hours in the previous OMB clearance period to 4,260 hours for this clearance period because all licensees who wish to have converted partially or completely from Option A to Option B. In addition, the burden associated with producing the summary report required under Option A has been reestimated, resulting in a burden of 80 hours per licensee vs. the 354 hours originally estimated.

16. Publication for Statistical Use

The collected information is not published for statistical purposes.

17. Reason for Not Displaying the Expiration Date

The requirement is contained in a regulation. Amending the Code of Federal Regulations to display information that, in an annual publication, could become obsolete would be unduly burdensome and too difficult to keep current.

18. Exceptions to the Certification Statement

None.

B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

Not applicable.

TABLE 1
ANNUAL INDUSTRY BURDEN AND COST - RECORDKEEPING

Item	Number of Recordkeepers	Estimated Burden Per Recordkeeper	Total Estimated Burden Hours	Estimated Industry Cost @ $141/hr
OPTION A	4	80/3 1/3	100/yr	$14,100
OPTION B Development of performance based leakage program				
Analyses & maintenance of ongoing program	100	40	4,160/yr	$586,560
TOTAL RECORDKEEPING BURDEN			4,260/yr	$600,660