OAK RIDGE NATIONAL LABORATORY
OPERATED BY
UNION CARBIDE CORPORATION
NUCLEAR DIVISION

POST OFFICE BOX Y
OAK RIDGE, TENNESSEE 37830

February 28, 1983

Mr. Gunter Arndt
Mechanical-Structural Engineering Branch
Division of Engineering Technology
NL 238
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Gunter:

This letter summarizes our progress on the Containment Leak Rate Testing Investigations (Fin. No. B0489) Program for the month of February 1983.

Technical Highlights

Browns Ferry was visited February 14-17, 1983 to observe the integrated leak rate test on Unit 2 containment. The following is an account from our perspective of what occurred and can not be considered as typical since this is only the first of a series of tests which we plan to observe under this program. Local leak testing of the drywell head and drywell airlock were completed prior to the beginning of the Type A test. After successfully pressurizing the containment and allowing for containment stabilization, excessive leakage was noted. As this leakage showed no signs of abating, a search for possible leak sources was begun. During this time there was a reactor vessel low water indication in the control room. As a result, water was pumped into the vessel to the point that some of it overflowed and fell to the floor of the containment. Althought it turned out that the vessel water level had not been low, this produced a change in the humidity, pressure and temperature for the leak test. After correcting for the above, the test was then resumed, but an excessive leak rate was still observed. The leak was traced to a loose valve flange which was then tightened and the test resumed. The measured leak rate was then found to be acceptable.

An overview of available exemption requests has been completed. One area of continued requests involves the schedule and pressure for airlock testing. Another area concerns the local testing of main steam isolation valves in BWRs with respect to location (i.e., between valves), pressure, and the pressure directions. The testing of BWR traversing in-core probe lines also was the subject of several exemptions. Additonal

requests involved venting and draining lines, hydrostatic testing instead of pneumatic, leak rate extrapolation from low pressure to high, short duration testing, and Type B and C test schedules. Also, requests were made concerning the use of local leak test results to adjust Type A test results.

An overview of the available licensee event reports has also been completed. These events included: excessive penetration and valve leakage during Type B and C testing; time limits being exceeded for Type A, B, and C tests; and failure of a Type A test due to excessive leakage caused by holes inadvertently drilled through the containment sphere.

Expenditures

Expenditures under this program during this fiscal year are shown below

	Oct.	Nov.	Dec.	Jan.	Feb.*
Expenditure ($K)	7.2	8.9	7.8	8.9	8.3
Cumulative ($K)**	14.2	23.1	30.9	39.8	48.1

*Estimated
**Program Total

Sincerely,

Dan

D. J. Naus

DJN:ege

cc: J. R. Dougan

OAK RIDGE NATIONAL LABORATORY
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NUCLEAR DIVISION

POST OFFICE BOX Y
OAK RIDGE, TENNESSEE 37830

April 4, 1983

Mr. Gunter Arndt
Mechanical-Structural Engineering Branch
Division of Engineering Technology
NL 238
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Gunter:

This letter summarizes our progress on the Containment Leak Rate Testing Investigations (Fin. No. B0489) Program for the month of March 1983.

Technical Highlights

A paper has been written for presentation at the Eleventh Biennial Topical Meeting on Reactor Operating Experience to be held August 1-3, 1983, in Scottsdale, Arizona. The paper is entitled "The Issue of CILRT Duration," and provides a brief background discussion of: the reasons for modifying the present duration requirements, several proposed concepts for determining the duration of CILRTs, and several of the concerns raised by the move to redefine the duration.

A report entitled "A Critique of Containment System Leakage Test Requirements," has been received from Z. Reytblatt. This report represents partial fulfillment of the subcontract agreement between ORNL and Reytblatt. The report identifies potential sources of error in leak rate testing and illustrates the significance of these errors through examples. The report also contains a discussion of the existing industry standard (ANSI/ANS-56.8-1981). The portion of the contract remaining to be fulfilled concerns recommendations for improving ANSI/ANS-56.8-1981 and the procedures for placing and determining weighting factors for the sensors. This information is expected to be contained in a forthcoming report by Reytblatt entitled "Containment System Leakage Testing Requirements.