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L. Rogers, Director, Directorate of Regulatory Standards

SRI-1 ORNL V-5 INTERMEDIATE VESSEL TEST RESULT

This memo is the first of a series of memos to transmit safety research information (SRI) to you for assistance it may provide in regulatory use.

The importance of this first transmittal is that it presents experimental evidence that a "safe" failure-mode (leak-before-break) for reactor pressure vessels may exist. The existence of this mode has been a subject for speculation in the past, but this experimental evidence is the first.

The enclosed ORNL test result of V-5 intermediate vessel demonstrated that a leak occurred instead of a fracture break when the vessel was heated to 190°F and pressurized to 26,600 psi. Further analytical study to generalize this result is underway.

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Herbert J. C. Kouts, Director
Division of Reactor Safety Research

Enclosure:
ORNL test result of
V-5 intermediate vessel

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