UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

February 14, 1975

Honorable William A. Anders
Chairman
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: CRACK PROPAGATION RATE IN SENSITIZED STAINLESS STEEL

Dear Mr. Anders:

Your letter of February 12, 1975 requested that the Advisory Committee on Reactor Safeguards supplement the description of rapid in the context of crack propagation rate discussed in the ACRS "Report on Cracking in Boiling Water Reactor Piping" of February 8, 1975.

The term rapid rate of crack propagation cited in the ACRS letter is used in the context of a total anticipated design life of about 40 years. Failures, such as leaks, which occur in a time period of 100 to 1000 days after crack initiation in components, such as bypass loops, are considered rapid. At the low calculated loads in the 4" bypass piping there will be an additional period of time for the crack to grow to a size that would result in abrupt failure due to crack instability. However, this period is difficult to predict quantitatively due to the several variables involved which are not well defined under all conditions.

Sincerely,

/s/ W. Kerr

W. Kerr
Chairman