



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 20, 1994

Docket No. 50-220

Mr. B. Ralph Sylvia
Executive Vice President, Nuclear
Niagara Mohawk Power Corporation
Nine Mile Point Station
P.O. Box 63
Lycoming, New York 13093

Dear Mr. Sylvia:

SUBJECT: ELASTIC-PLASTIC FRACTURE MECHANICS ASSESSMENT OF NINE MILE POINT
NUCLEAR STATION UNIT NO. 1 REACTOR VESSEL BELTLINE PLATES
(TAC NO. M86107)

By letters dated December 17, 1992, and February 26, 1993, respectively, Niagara Mohawk Power Corporation (NMPC) submitted reports entitled, "Elastic-Plastic Fracture Mechanics Assessment of Nine Mile Point Unit 1 Beltline Plates for Service Level A and B Loadings" and "Elastic-Plastic Fracture Mechanics Assessment of Nine Mile Point Unit 1 Beltline Plates for Service Level C and D Loadings," for NRC staff review and approval. These reports were intended to demonstrate through fracture mechanics analysis that there exist margins of safety against fracture equivalent to those required by Appendix G of American Society of Mechanical Engineers Boiler and Pressure Vessel (ASME) Code, Section III, for beltline plates having upper-shelf energy (USE) values below the 50 ft-lb screening criterion.

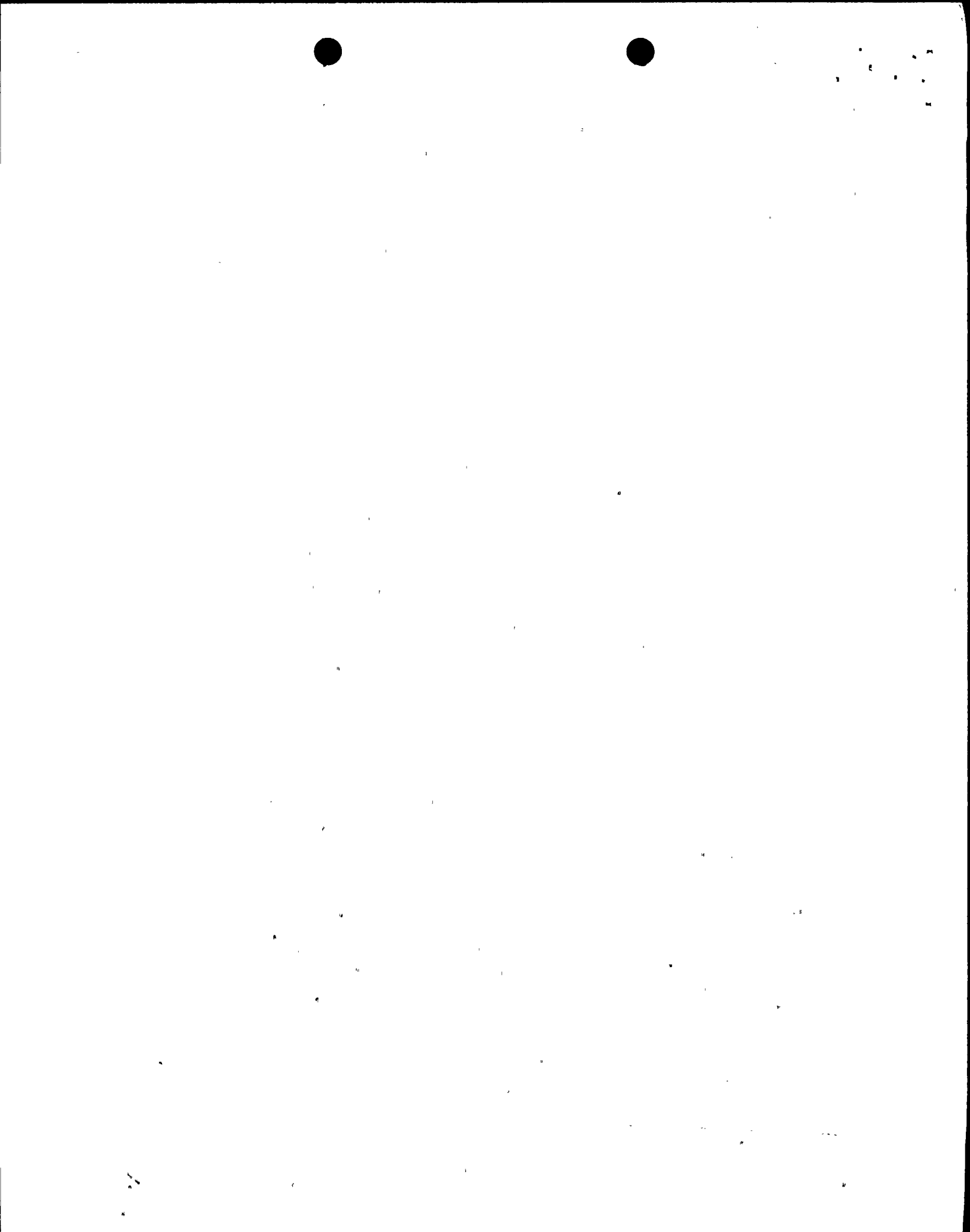
The NRC staff, with assistance from its contractor, Oak Ridge National Laboratory (ORNL), has completed the review of these reports. Based on the NRC staff's own review and the technical evaluation report (TER) by ORNL, the NRC staff concludes that the Nine Mile Point Nuclear Station Unit No. 1 (NMP-1) reactor pressure vessel plates have adequate margins of safety against fracture until the end-of-life (25 EFY) for all Level conditions (A, B, C, and D) and meet the criteria in ASME Section XI Code Case N-512. This conclusion applies to weld material as well because based on a generic initial USE developed by the NRC staff for Combustion Engineering fabricated welds, the welds were determined to be not limiting. The NRC staff further concludes that the NMP-1 reactor pressure vessel plates and weld material satisfy the requirements of 10 CFR Part 50, Appendix G, Section IV.A.1, in that the USE values for these plates and welds will provide margins of safety against fracture equivalent to those required by Appendix G of Section III of the ASME Code and are, therefore, acceptable.

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Mr. B. Ralph Sylvia

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This completes our effort on TAC No. M86107. Our review of NMPC's response to Generic Letter 92-01, Revision 1, "Reactor Vessel Structural Integrity" was performed under TAC No. M83486. The results of that review are being reported separately to you. Please contact the NRC NMP-1 Project Manager, Donald S. Brinkman at (301) 504-1409 if you have any questions.

Sincerely,

Robert A. Capra

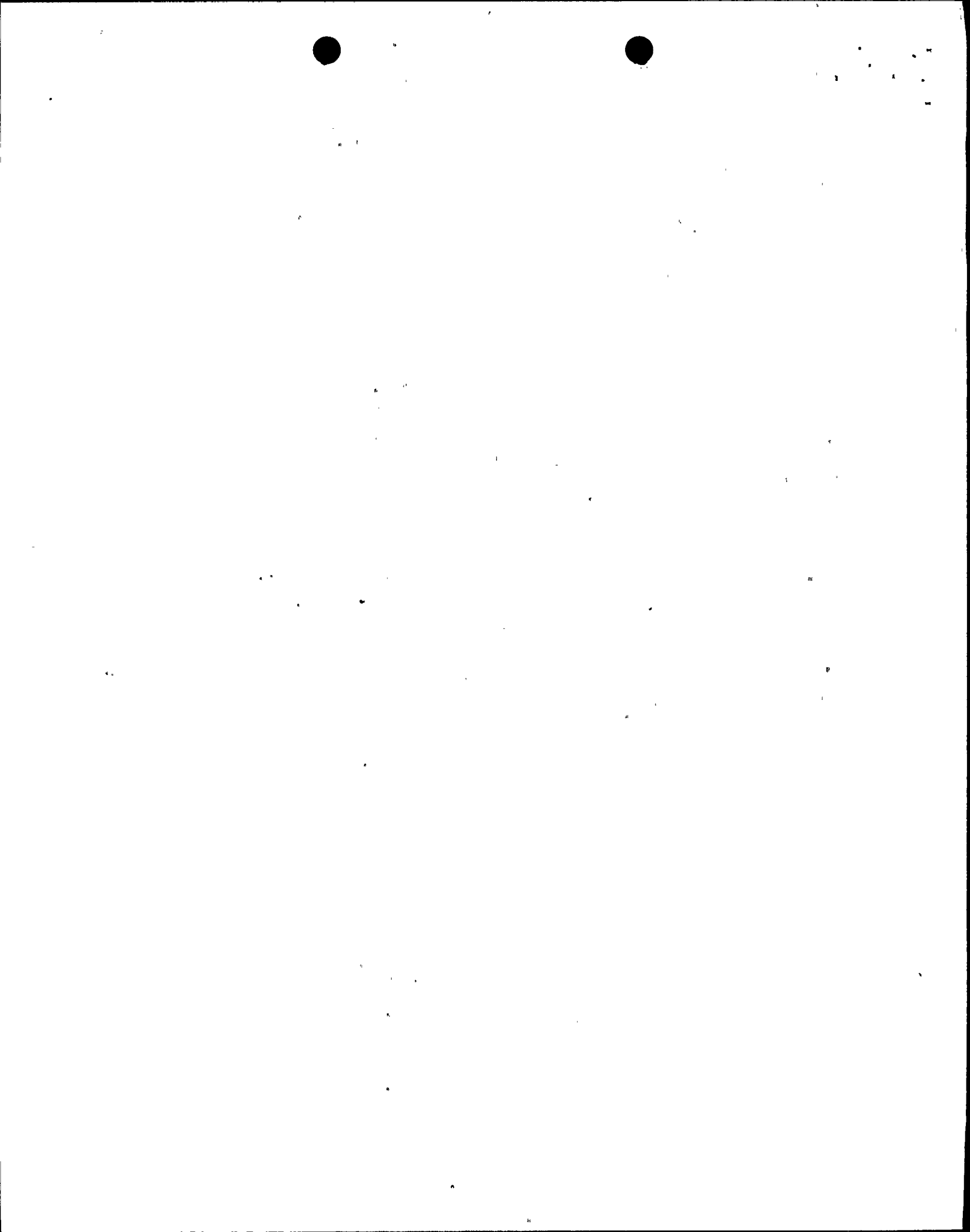
Robert A. Capra, Director
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Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Safety Evaluation
2. Technical Evaluation Report

cc w/enclosures:

See next page



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