

# GENERAL ELECTRIC

NUCLEAR ENERGY  
PROJECTS DIVISION  
MFN-169-79

GENERAL ELECTRIC COMPANY, 175 CURTNER AVE., SAN JOSE, CALIFORNIA 95125  
MC 905, (408) 925-3495

June 25, 1979

U. S. Nuclear Regulatory Commission  
Office of Nuclear Reactor Regulation  
Washington, D.C. 20555

Attention: Mr. D. G. Eisenhut, Deputy Director  
Division of Operating Reactors

Gentlemen:

SUBJECT: GENERAL ELECTRIC REPORT NEDO-21052-A, "MAXIMUM DISCHARGE  
RATE OF LIQUID - VAPOR MIXTURES FROM VESSELS"

Reference: Letter, D. Eisenhut (NRC) to L. J. Sobon (GE), dated  
December 27, 1978, "Review of General Electric Topical  
Report NEDO-21052, Maximum Discharge Rate of Liquid -  
Vapor Mixtures from Vessels"

The reference letter provided an evaluation of report NEDO-21052 which concludes that the model described, in conjunction with its methods of application for Mark I containment response analyses, are acceptable for reference as specified in the NRC staff Topical Report Evaluation. In accordance with your request, a revised version of NEDO-21052 has been issued which includes the text of the original report, the supplementary information previously provided for your review, the reference letter and the NRC staff evaluation. Seventy copies of the revised report, NEDO-21052-A, "Maximum Discharge Rate of Liquid - Vapor Mixtures from Vessels" are enclosed.

Minor revisions to previously submitted information have been incorporated in the revised report NEDO-21052-A. These revisions, which are described below, do not affect the NRC staff conclusion and are being included for completeness. Responses 1(a) and 1(d) provided in the General Electric transmittal dated June 30, 1978 indicated that plants without jet pumps (BWR/2) have slightly different mass flow rate characteristics for the design basis recirculation line break than plants with jet pumps (BWR/3, 4). However, during the preparation of plant unique containment response analyses for the Mark I Containment Program, the BWR/2 plants were found to include flow restricting devices (venturis) in the discharge side of the recirculation piping. With these restrictors, the general mass flow

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rate characteristics for a design basis recirculation line break at the safe end to pipe weld are the same for plants with or without jet pumps, i.e., the flow rate drops from the initial value based on the pipe break area to a lower value determined by the jet pump nozzle flow area (BWR/3, 4) or by the restrictor flow area (BWR/2). Additionally, several typographical errors on pages 3 and 5 of the original report have been corrected.

Very truly yours,



L. J. Sobon, Manager  
BWR Containment Licensing

LJS:pab/297-298

Enclosure

cc: L. S. Gifford (GE-Bethesda)  
C. I. Grimes (NRC)

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