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January 26, 1993
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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Gentlemen:

Subject: Oyster Creek Nuclear Generating Station (OCNGS)
Operating License No. DPR-50
Docket No. 50-219
Reactor Vessel Fracture Mechanics Analysis for Upper
Shelf Energy Requirements

Your letter dated November 9, 1992 requested postulated interior axial flaws to be evaluated to determine the adequacy of the upper shelf toughness for the Oyster Creek reactor vessel based material.

A report (GE-NE-523-70-0692) submitted by our letter dated September 22, 1992 only considered circumferential flaws in base material.

This letter transmits the results of our recent study on upper shelf energy requirements for the postulated axial flaws.

In the analysis two (2) Charpy-V-Notch (CVN) energy levels were considered: 53.8 ft-lbs. and 62 ft-lbs. The first value corresponds to 1/.65 (per the conversion factor given in Standard Review Plan 5.3.2) of the 35 ft-lbs. transverse direction CVN value used in our evaluation of a circumferential crack reported in the aforementioned report. The 62 ft-lbs. is the lowest end-of-life predicted CVN value in the longitudinal direction. Figures 1 (J_0 analysis) and 2 (stability evaluation) show the results for Level A and B condition evaluations. It is seen that the applicable criteria are satisfied in each case.

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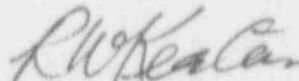
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An axial flaw evaluation for Level C and D conditions is not considered necessary for the following reason. Thermal stresses are dominating in these cases and the stress intensity factor values for the circumferential flaw were calculated conservatively in the original analysis such that essentially the same values are also applicable to an axial flaw. Thus, the Level C and D applied J-integral values for axial flaw are expected to be bounded by those reported for the circumferential crack in the original analysis. Since the material toughness corresponding to the longitudinal crack is considerably higher than that for the circumferential flaw, the margins for Level C and D conditions reported in the original report would be even larger for the axial flaw case.

If you have any questions regarding the information provided in this letter, please call Mike Laggart, Manager, Corporate Licensing at (201) 316-7968.

Very truly yours,



R. Keaten
Vice President and Director
Technical Functions

YN/plp
Attachments

cc: Administrator, Region I
Oyster Creek NRC Project Manager
Sr. Resident Inspector, OC

LEVEL A & B EVAL., 1.15 ACCUM. PRESSURE

MEAN - 2*SIGMA J-R CURVES, AXIAL CRACK

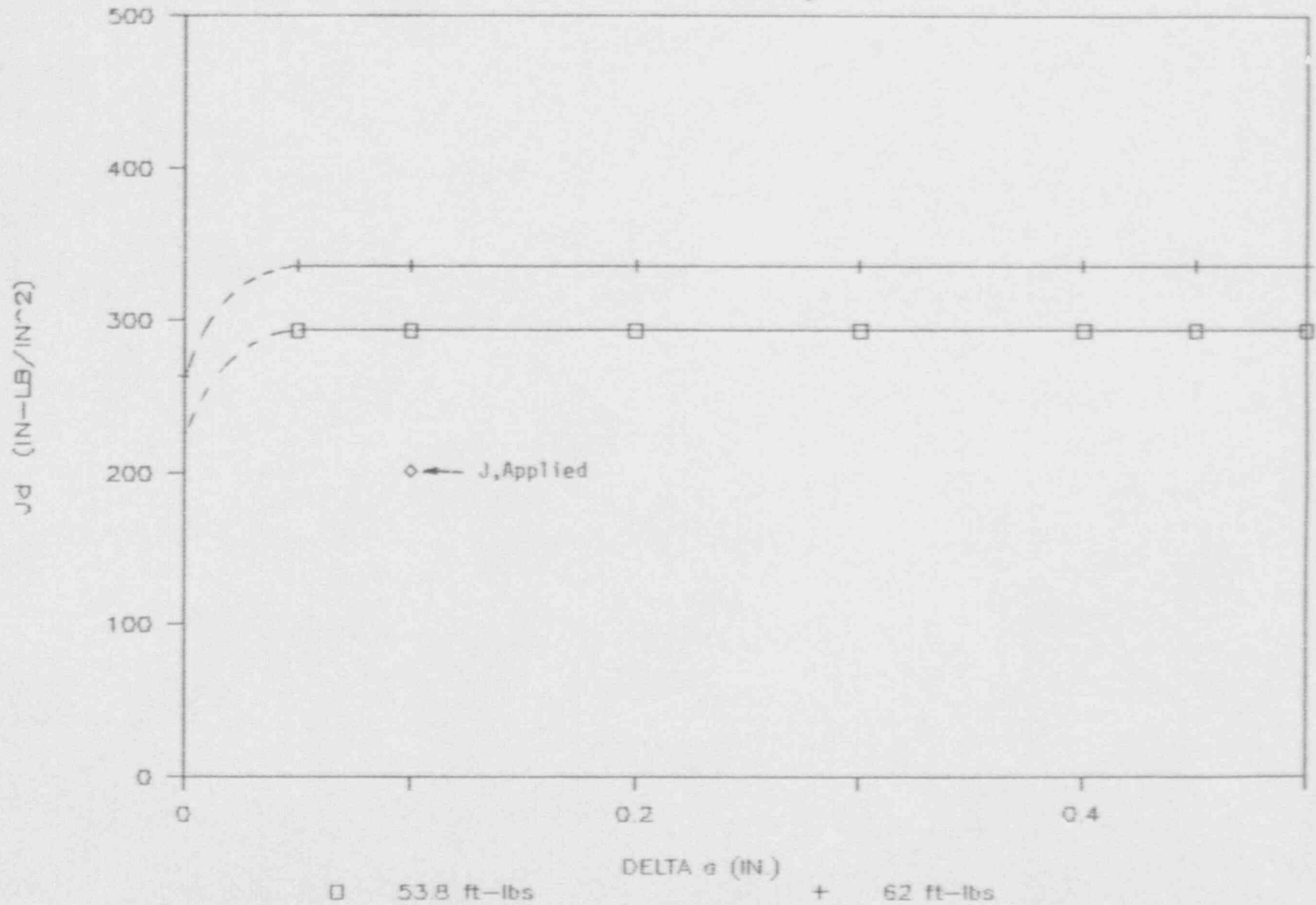


FIGURE 1

LEVEL A & B EVAL., 1.25 ACCUM. PRESSURE

MEAN - 2*SIGMA J-R CURVES, AXIAL CRACK

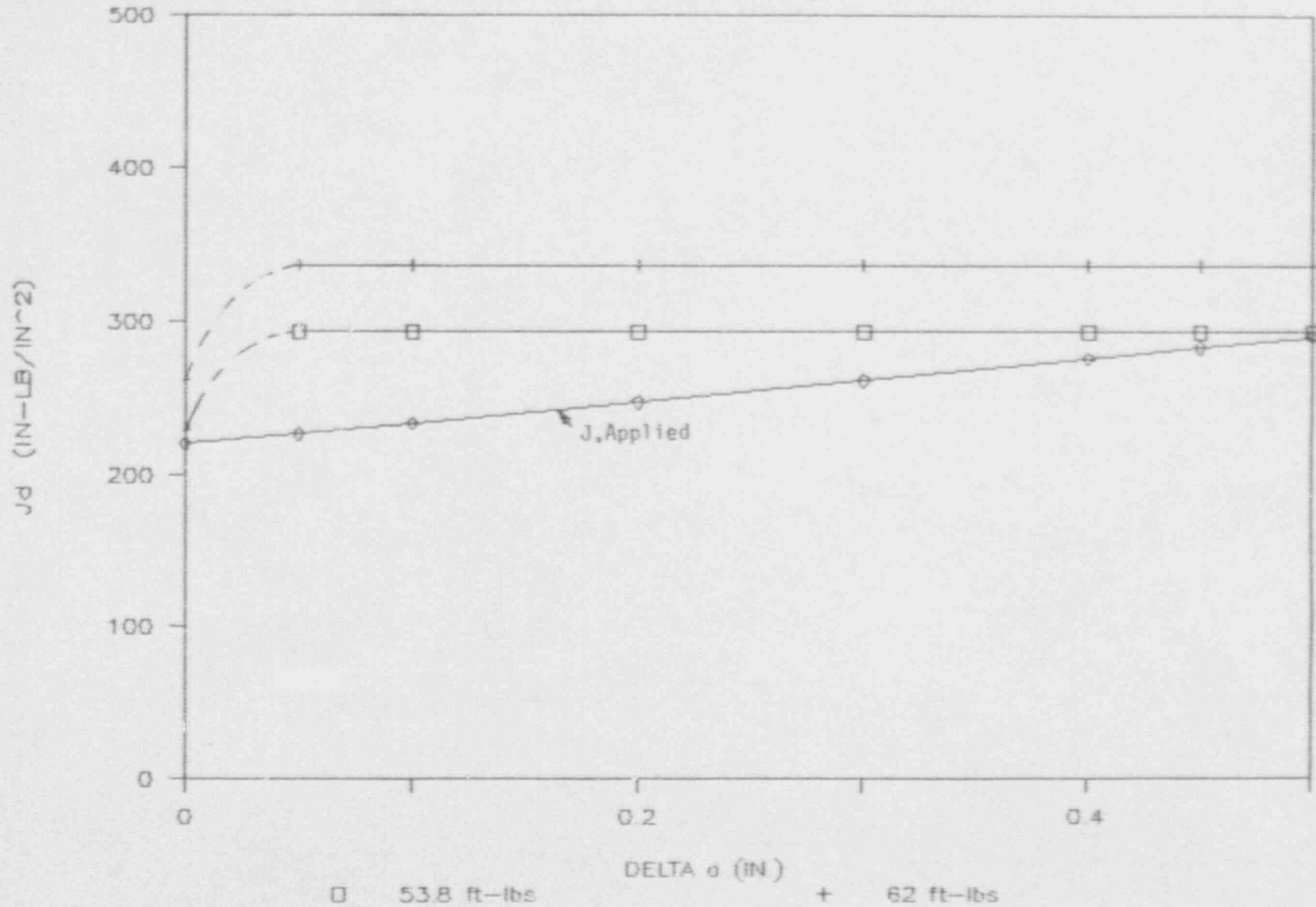


FIGURE 2