

The following table summarizes the maximum stresses of the rack components for each pertinent load combination. The following calculated seismic stresses are based on the cumulative conservations associated with bounding the OBE and DBE response spectra and using the 2-percent damping values. Figures II-4 and II-5 are structural drawings for the assembly of the spent fuel modules.

7 x 8 RACK MAXIMUM STRESS INTERACTIONS (ACTUAL/ALLOWABLE) (a)

Load Combinations	.135 Cans	.120 Cans	Grid	Cruciform(b)	Foot	Perimeter Bar	Foot Stiffner
D + L + T + P	-	.26	.38	.31	.32	.21	.20
D + L + T + H <sub>x</sub>	-	.08	.41	.32	.32	.22	.21
D + L + T + H <sub>z</sub>	-	.07	.40	.32	.31	.23	.19
(c) D + L + T + I <sub>1</sub>	-	.64	.58	.54	.47	.47	.32
(c) D + L + T + I <sub>2</sub>	.52	.27	.46	.51	.46	.20	.24
(c) D + L + T + I <sub>3</sub>	-	.90	.69	.69	.41	.31	.26
D + L + T + E	.65	.97	.51	.28	.38	.29	.36
D + L + T <sup>1</sup> + E <sup>1</sup>	.47	.70	.36	.20	.26	.21	.26

6 x 7 RACK MAXIMUM STRESS INTERACTIONS (ACTUAL/ALLOWABLE) (d)

Load Combinations	.135 Cans	.120 Cans	Grid	Cruciform(b)	Foot	Perimeter Bar	Foot Stiffner
D + L + T + E	.70	.87	.44	.28	.21	.15	.26
D + L + T <sup>1</sup> + E <sup>1</sup>	.50	.63	.31	.19	.14	.12	.18

NOTES:

- (a.) 7 x 7 rack bounded by the 7 x 8 rack.
- (b.) Fuel support cruciform.
- (c.) I<sub>4</sub> & I<sub>5</sub> are bounded by these drop conditions.
- (d.) Static load cases are bounded by the 7 x 8 racks.

IV.(5) Design and Analysis Procedures

The following is a brief description of the methods used to structurally analyze the spent fuel storage rack design. This freestanding rack design was structurally qualified by a detailed time history and static analysis.

Simplified time history analysis was done at both 0.2 and 0.8 coefficients of friction ( $\mu$ ) conditions with 0, 1/4, 1/2, 3/4, and full eccentric fuel loading conditions. The low