



Fig. 251 Elastic-plastic analysis of the **optimized unstiffened equivalent ellipsoidal shell with the thick apex with $t(\text{apex}) = 0.61996$ inch; $W_{\text{imp}}=0.2$ inch; the optimum design is listed in Table 93.** Collapse of the imperfect shell with a **Case 3** residual dent of depth close to 0.2 inch. The **Case 3** dent is generated by a load set B (PB) cycle. Load Set B consists of a number of normal, inward-directed concentrated loads applied, in **Case 3**, along row 4 of shell segment 7 (Figs. 2, 169, 232, and 233) that has a $\cos(\theta)$ circumferential distribution from $\theta = 0$ to 90 degrees. This load distribution is used because it generates a residual dent that **locally** resembles the negative of the deformation in Figs. 232 and 233, that is, the negative of the linear buckling modal imperfection with $n = 1$ circumferential wave. Compare with Fig. 246.