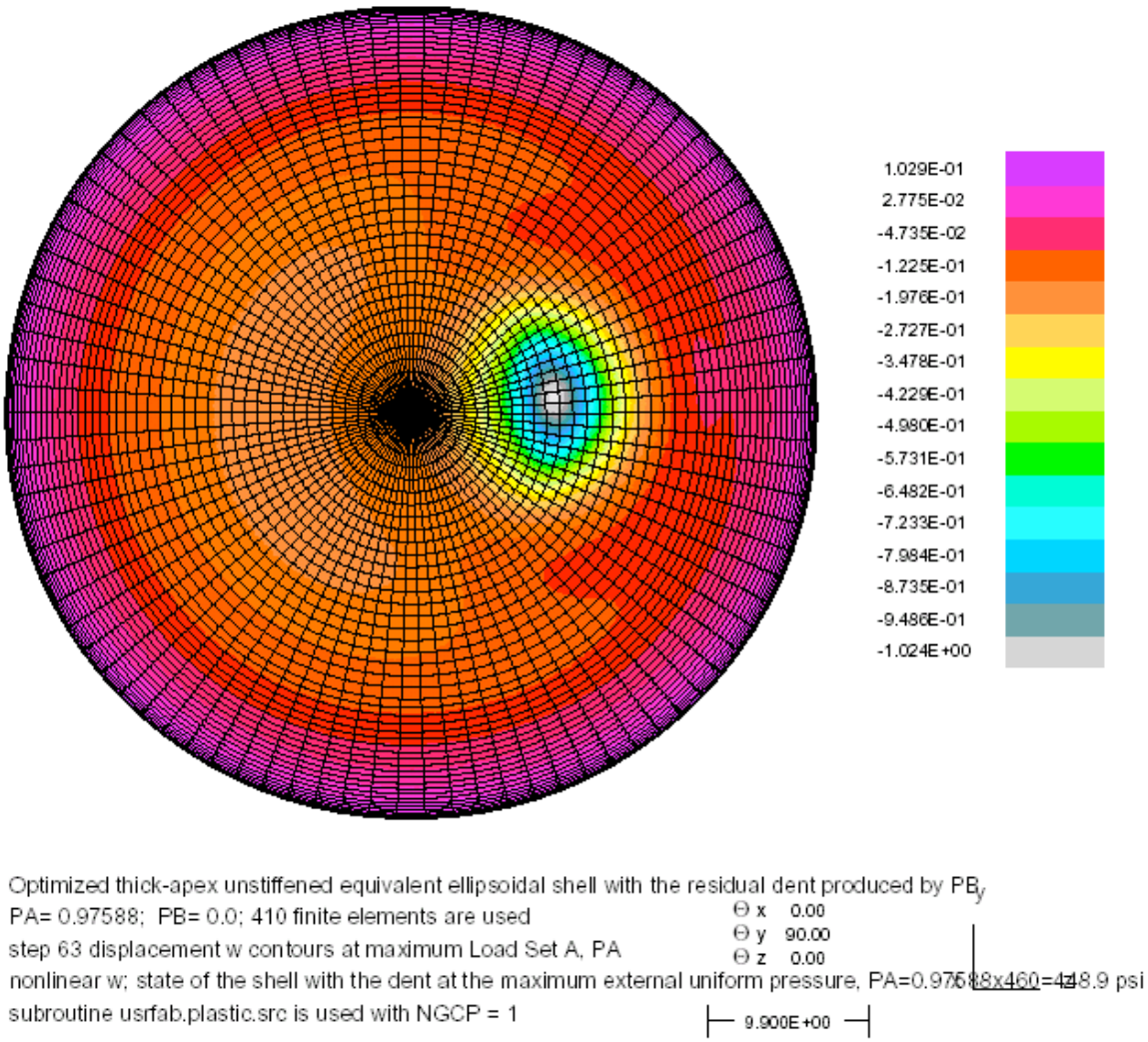

Fig. 168 Elastic-plastic collapse of the **optimized unstiffened equivalent ellipsoidal shell with thick apex, t(apex)=0.4 inch; Wimp=0.2 inch; the optimum design is listed in Table 78.** This figure shows the end of the **third phase** of the complete case, the phase in which a uniform external pressure, PA, is applied to the shell with the residual dent displayed in the previous figure. Shown here is the state of the dented shell as loaded by the highest pressure load factor, PA = 0.97588, attained during the STAGS run. The external pressure-carrying capability of the dented shell is PA x 460 = 0.97588 x 460 = 448.9 psi, slightly less than the design pressure, 460 psi. By comparing the load-carrying capacity of the shell with the residual dent of depth 0.248 inch with the load-carrying capacity of the shell with a linear buckling modal imperfection shape with n = 1 circumferential wave and of depth, Wimp=0.2 inch (third from last trace in Fig. 161), we see that the residual dent produced by a single concentrated load is a significantly less harmful initial imperfection than is a linear buckling modal imperfection with n = 1 circumferential wave.