



Fig. 97 Optimization via SUPEROPT of the **imperfect unstiffened** equivalent ellipsoidal shell with the use of plus and minus **mode 1, mode 2, mode 3, and mode 4** axisymmetric imperfection shapes with amplitude, $W_{imp} = 0.2$ inch. The starting design is the optimum design determined with the use of only plus and minus mode 1 and mode 2 axisymmetric imperfection shapes, that is, the design listed in Table 33 under the heading, “unstiffened, imperfect”. The SUPEROPT run was allowed to proceed until completion four days after launch on the efficient LINUX machine on which this work was done. The optimum design and design margins are listed in Table 65.