Table 77 Input data, ***.DEC**, for the "DECIDE" processor for the **unstiffened equivalent ellipsoidal shell with the thick apex** (Shell Segment 1 in Fig. 2). The apex region (Segment 1, Fig. 2) is constrained to have **uniform thickness** via a linking expression that involves the thickness at the apex, THKSKN(1), and the thickness at the junction of Shell Segment 1 and Shell Segment 2 (Fig.2), THKSKN(2). [THKSKN(2) = THKSKN(1)]. For a correspondence of decision variable number and decision variable see the next table. Note that here the lower bound of the thickness, t(apex), of Shell Segment 1 (Fig.2) is set equal to 0.4 inches. Results with that lower bound are presented in Figs. 144 – 225 and in Tables 78 – 91. Later that lower bound is increased to 0.6 inch. Results with that increased lower bound are presented in Figs. 226 – 253 and in Tables 92 – 95. Compare this table with Table 57.

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      n          $ Do you want a tutorial session and tutorial output?
         1       $ Choose a decision variable (1,2,3,...)     THKSKN(1)
 0.4000000       $ Lower bound of variable no.( 1) ← Note lower bound!
  1.000000       $ Upper bound of variable no.( 1)
      y          $ Any more decision variables (Y or N) ?
         3       $ Choose a decision variable (1,2,3,...)     THKSKN(3)
 0.1000000       $ Lower bound of variable no.( 3)
  1.000000       $ Upper bound of variable no.( 3)
      y          $ Any more decision variables (Y or N) ?
         4       $ Choose a decision variable (1,2,3,...)     THKSKN(4)
 0.1000000       $ Lower bound of variable no.( 4)
  1.000000       $ Upper bound of variable no.( 4)
      y          $ Any more decision variables (Y or N) ?
         5       $ Choose a decision variable (1,2,3,...)     THKSKN(5)
 0.1000000       $ Lower bound of variable no.( 5)
  1.000000       $ Upper bound of variable no.( 5)
      y          $ Any more decision variables (Y or N) ?
         6       $ Choose a decision variable (1,2,3,...)     THKSKN(6)
 0.1000000       $ Lower bound of variable no.( 6)
  1.000000       $ Upper bound of variable no.( 6)
      y          $ Any more decision variables (Y or N) ?
         7       $ Choose a decision variable (1,2,3,...)     THKSKN(7)
 0.1000000       $ Lower bound of variable no.( 7)
  1.000000       $ Upper bound of variable no.( 7)
      y          $ Any more decision variables (Y or N) ?
         8       $ Choose a decision variable (1,2,3,...)     THKSKN(8)
 0.1000000       $ Lower bound of variable no.( 8)
  1.000000       $ Upper bound of variable no.( 8)
      y          $ Any more decision variables (Y or N) ?
         9       $ Choose a decision variable (1,2,3,...)     THKSKN(9)
 0.1000000       $ Lower bound of variable no.( 9)
  1.000000       $ Upper bound of variable no.( 9)
      y          $ Any more decision variables (Y or N) ?
```

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      10      $ Choose a decision variable (1,2,3,...)     THKSKN(10)
 0.1000000    $ Lower bound of variable no.(10)
  1.000000    $ Upper bound of variable no.(10)
     y        $ Any more decision variables (Y or N) ?
      11      $ Choose a decision variable (1,2,3,...)     THKSKN(11)
 0.1000000    $ Lower bound of variable no.(11)
  1.000000    $ Upper bound of variable no.(11)
     y        $ Any more decision variables (Y or N) ?
      12      $ Choose a decision variable (1,2,3,...)     THKSKN(12)
 0.1000000    $ Lower bound of variable no.(12)
  1.000000    $ Upper bound of variable no.(12)
     y        $ Any more decision variables (Y or N) ?
      13      $ Choose a decision variable (1,2,3,...)     THKSKN(13)
 0.1000000    $ Lower bound of variable no.(13)
  1.000000    $ Upper bound of variable no.(13)
     n        $ Any more decision variables (Y or N) ?
     y        $ Any linked variables (Y or N) ?  ← Note this!
        2     $ Choose a linked variable (1,2,3,...)       THKSKN(2)
        1     $ Choose type of linking (1=polynomial; 2=user-defined)
        1     $ To which variable is this variable linked? THKSKN(1)
  1.000000    $ Assign a value to the linking coefficient, C(j)
        1     $ To what power is the decision variable raised?
     n        $ Any other decision variables in the linking expression?
     n        $ Any constant C0 in the linking expression?
     n        $ Any more linked variables (Y or N) ?
     n        $ Any inequality relations among variables? (type H)
     y        $ Any escape variables (Y or N) ?
     y        $ Want to have escape variables chosen by default?
=====================================================================
```

NOTE: This **new formulation of the optimization problem** leads to an optimized design that, while still a bit under-designed, is much better than the grossly under-designed shell the dimensions of which are listed in Table 33 under the heading, "**unstiffened, imperfect**". A satisfactory optimum design is one obtained with the lower bound of THKSKN(1) set equal to 0.6 inch instead of 0.4 inch (Table 93).