U-600530
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ILLINOIS POWER COMPANY

CLINTON POWER STATION, P.O. BOX 678, CLINTON, ILLINOIS 61727

Docket No. 50-461

April 14, 1986

Director of Nuclear Reactor Regulation
Attention: Dr. W. R. Butler, Director
BWR Project Directorate No. 4
Division of BWR Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Clinton Power Station
Fire Damper Closure Angles

Dear Dr. Butler:

Illinois Power's Letter U-600441 dated February 13, 1986, advised the NRC that the closure angles of the Ruskin fire dampers are welded together at the corners. Sargent & Lundy has performed analyses to verify that the welded corner closure angles do not hinder the ability of the fire dampers to perform their design function. At the request of a member of the NRC Staff, these analyses (calculation No. CQD-027437 Revision 0) are enclosed.

There is no gap between the bottom of the damper sleeve assembly and the penetration. Fire damper tests show that the damper functions properly in this configuration. The ducts connected to the fire damper sleeve are supported by duct supports and not the sleeve assembly. The attachment of the ducts to the fire damper sleeves is by "S" clip breakaway connections which are not rigid connections. These design features were discussed with the Staff in a telephone call on April 2, 1986.

If you need any further information, please call me.

Sincerely yours,

F. A. Spangenberg
Manager - Licensing
and Safety

B002
1/9

LTR. TO ALL
ENCLSTO:

Enclosure

DWW/kaf

cc: B. L. Siegel, NRC Clinton Licensing Project Manager
NRC Resident Office
Regional Administrator, Region III, USNRC
Illinois Department of Nuclear Safety

Reg. File
PDR
LPDR
NSIC
24x
BWR PSB
B. Siegel
J. KUDRICK

SARGENT & LUNDY ENGINEERS

Calcs. For	Clinton HVAC Penetration Mounted Fire Dampers
Calc. No.	CQD-027437
Rev.	0
Date	1/20/86
Page	1 of 24
X	Safety-Related
	Non-Safety-Related

Client	Illinois Power Company	
Project	Clinton Power Station Unit 1	
Proj. No.	4536-00 Equip. No.	
Prepared by	[signature]	Date 1/20/86
Reviewed by	[signature]	Date 1/20/86
Approved by	Y. A. Patel	Date 1/20/86

References

1 ASTM Standard E119-83, 1984 Annual Book of ASTM Standards, Volume 4.07

2 Sargent and Lundy Calculation CQD-020745

3 Sargent and Lundy Drawing M14-1119, Rev. U

4 ANSYS 4, Sargent and Lundy Program No. 09.5.185-4.1

5 Holman, J.P., Heat Transfer, Fifth Edition, 1981 McGraw-Hill, Inc.

6 ASME Boiler and Pressure Vessel Code Section III, Division 1, Appendix I.

7 Sargent and Lundy Specification K-2910

8 Underwriters Laboratory Standard for Fire Dampers and Ceiling Dampers, UL555, Third Edition, May 1979

9 Ruskin Manufacturing Co. NIBU-23/1179, 1979

10 Mark's Standard Hand book for Mechanical Engineers, Eighth Edition.

11 Elevated-Temperature Properties of Carbon Steels, ASTM Special Technical Publication No. 180.

SARGENT & LUNDY ENGINEERS CHICAGO

Calcs. For	Calc. No. CQD-027437
X Safety-Related / Non-Safety-Related	Rev. 0 Date 1/20/86
	Page 2 of

Client Illinois Power Company	Prepared by	Date
Project Clinton Power Station - Unit 1	Reviewed by	Date
Proj. No. 4536-00 Equip. No.	Approved by	Date

Purpose: To evaluate the effect of thermal expansion of an HVAC penetration frame due to heating by a fire on a fire damper mounted inside the penetration

Conclusion: A conservative evaluation of the deformation of the frame of the HVAC penetration mounted fire damper under conditions of severe thermal loading demonstrated that the fire damper deformation is sufficiently small compared to the dimensions of the frame of the fire damper that the barrier provided by damper would not be compromised by heating due to fire.

Methods: A survey of typical fire dampers at Clinton Power Station-Unit 1, reference 2, was used to identify fire dampers that could be severely deformed by heating of the HVAC penetration in which the fire damper is mounted. Rectangular fire dampers with a large width to height ratio were considered to be severe configurations since heating of a long side of the damper would cause large thermal expansion of that side, and a short height would cause a large rotation to account for the thermally induced difference in length of the two long sides. The penetration and damper that was chosen as representative of severe configurations was 59" x 16". The construction details of the penetration were taken from reference 3. The construction details of the frame of the

fire damper were obtained from the manufacturer's catalog, reference 9, and reference 2. The temperature conditions representative of a fire were taken from UL555, reference 8, which the fire dampers purchased for Clinton Power Station - Unit 1, are required to satisfy by the applicable project specification, reference 7. Standard UL555 specifies a time-temperature curve that is to be the average temperature of at least 9 locations near the damper during a test in which the damper is installed on a furnace. Some variation of temperature could be expected in a furnace test of a fire damper, but the variation would be relatively small. In order to simulate an extreme case, the temperature curve specified by UL555, and given in more detail by ASTM

E119-83 reference 1, was imposed on one long side of the chosen penetration frame. A transient thermal analysis was performed using ANSYS to calculate the temperature distribution in the penetration frame due to the selective heating. The thermal analysis included conduction and radiation effects. The thermal analysis modeled the angle frame of the HVAC penetration. This assumes no significant loss of heat occurs by conduction through the sheet metal of the duct or penetration. Radiation coefficients were calculated assuming heating only from the angle frame. The coefficients of thermal conductivities of carbon steel that were obtained from reference 5 are listed in table 1. The specific heats of iron that were obtained from reference 10 are listed in table 2.

Temperature °C	Temperature °F	Thermal Conductivity W/m°C	Thermal Conductivity BTU/in.sec.°F
0	32	55	7.36×10^{-4}
100	212	52	6.95×10^{-4}
200	392	48	6.42×10^{-4}
300	572	45	6.02×10^{-4}
400	752	42	5.62×10^{-4}
600	1112	35	4.63×10^{-4}
800	1472	31	4.15×10^{-4}

Table 1. Thermal Conductivity of low carbon steel.

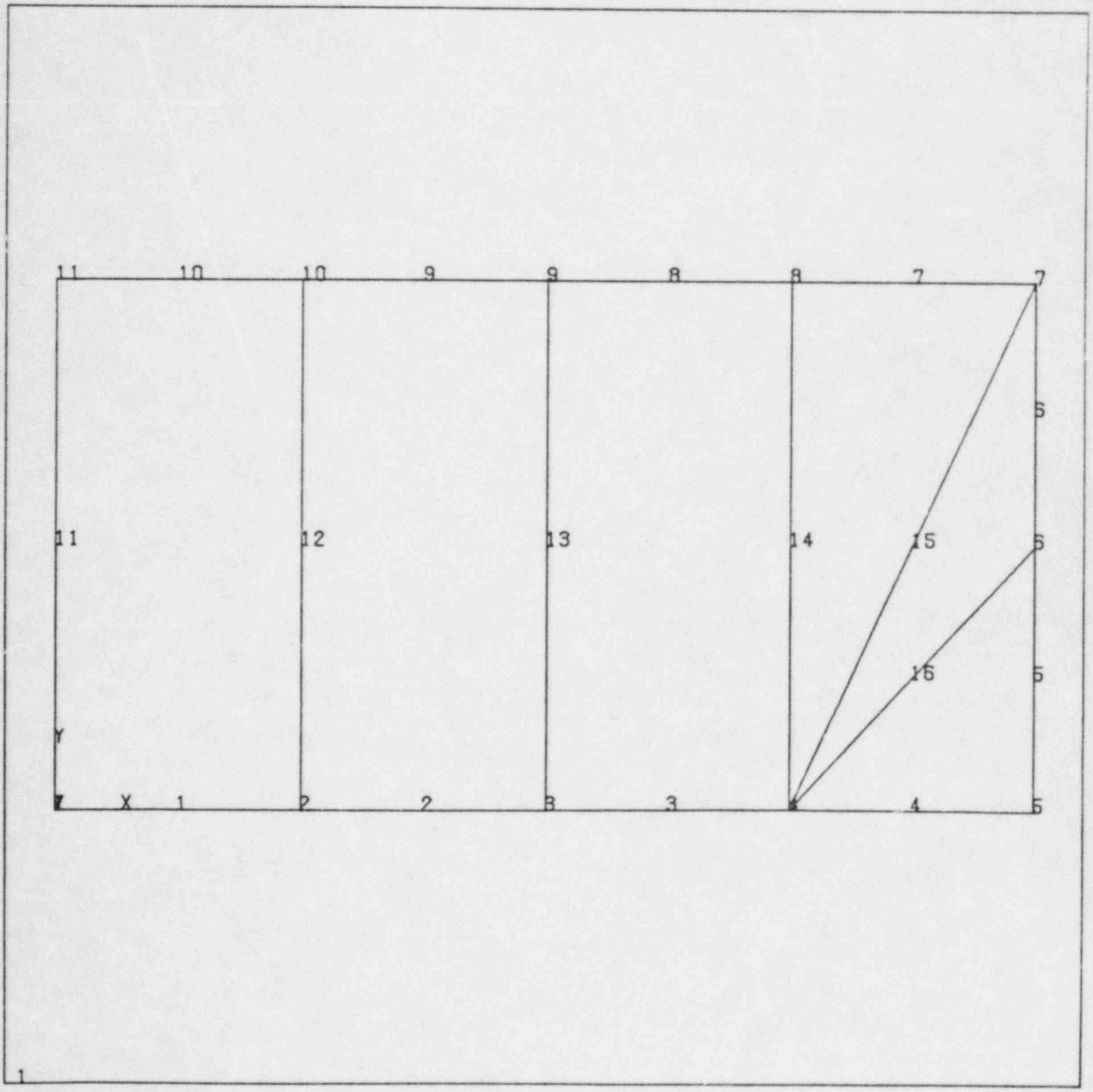
Temperature (°F)	Specific Heat BTU/lb°F
32	.12
316	.127
700	.151
900	.163
1100	.193

Table 2. Specific Heat of Iron.

The properties used for the radiation elements were obtained from reference 5. The emissivity used was .3, reference 5 p547. The form factor used was .6, reference 5 pages 320 and 321. The area of the radiation elements was the

product of the penetration frame width, 2", and the frame element length, 7.4". The area was divided by 3600, so the product of the Stefan-Boltzmann constant used by ANSYS and the area would result in a value whose time unit was seconds. Figure 1 illustrates the mesh that was used for transient thermal analysis. Thermal analysis was performed by specifying all nodal temperatures to be 70°F initially, and imposing the temperature time history of UL-555 at nodes 1 through 5 shown in figure 1. The maximum calculated temperature difference calculated by the thermal analysis was used as input to a structural finite element model of the HVAC penetration and fire damper frame. Figure 2 illustrates the modeled penetration and fire damper frame configuration.

Figure 1. Mesh of thermal radiation and conduction elements.



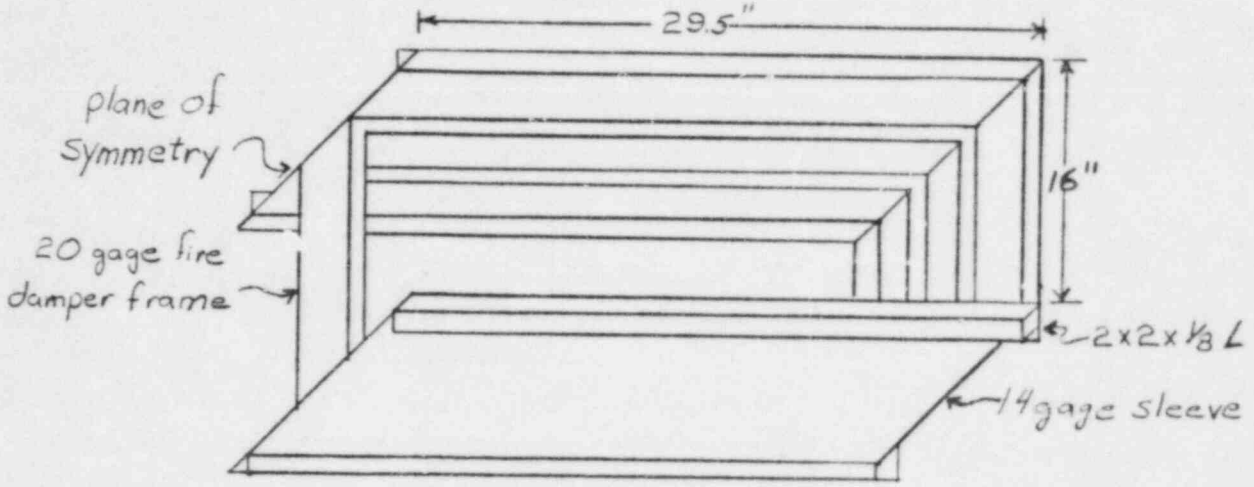
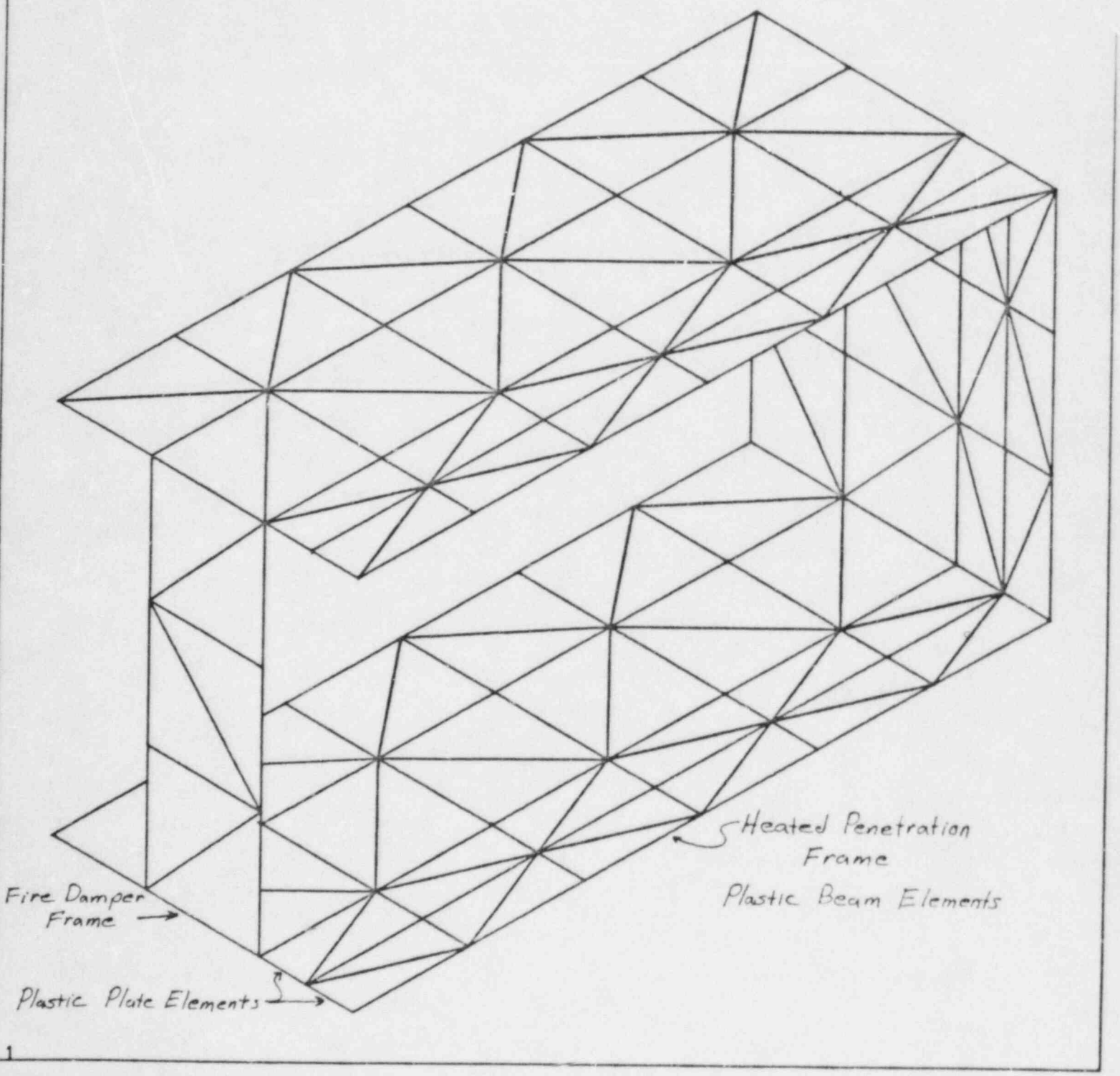


Figure 2 Modeled Configuration of Half of an HVAC Penetration and Fire Damper Frame.

Figure 3 illustrates the structural finite element model of the HVAC penetration and fire damper frame illustrated in figure 2. The 2x2x1/8 L penetration frame and the rolled edge of the fire damper frame were modelled by STIF24 thin walled beam elements with plastic capabilities. The section of the penetration between the heated frame and fire damper was modeled by STIF48 triangular plate elements with plastic capabilities. The fire damper frame and penetration

Figure 3. Finite Element Structural Model of the HVAC Penetration and Fire Damper Frame



section of the model was modeled by STIF63 plate elements using the triangular option. These elements modeled the total thickness of the 14 gage penetration and 20 gage fire damper frame. The section of the penetration between the fire damper frame and the unheated frame was modeled with STIF63 elements using the triangular option.

The nodes on the plane of symmetry were constrained consistently with the symmetry condition. The nodes of the unheated penetration frame were constrained in the direction of the duct.

The material model chosen to represent the plastic properties of the penetration was the classical kinematic hardening. The temperature dependent elastic modulus and coefficient of thermal expansion are shown in figures 4 and 5 Yield stresses from reference 11 are shown in table 3. The ratio of plastic to elastic modulus was taken to be .2 at all temperatures.

Figure 4 Coefficient of thermal expansion.

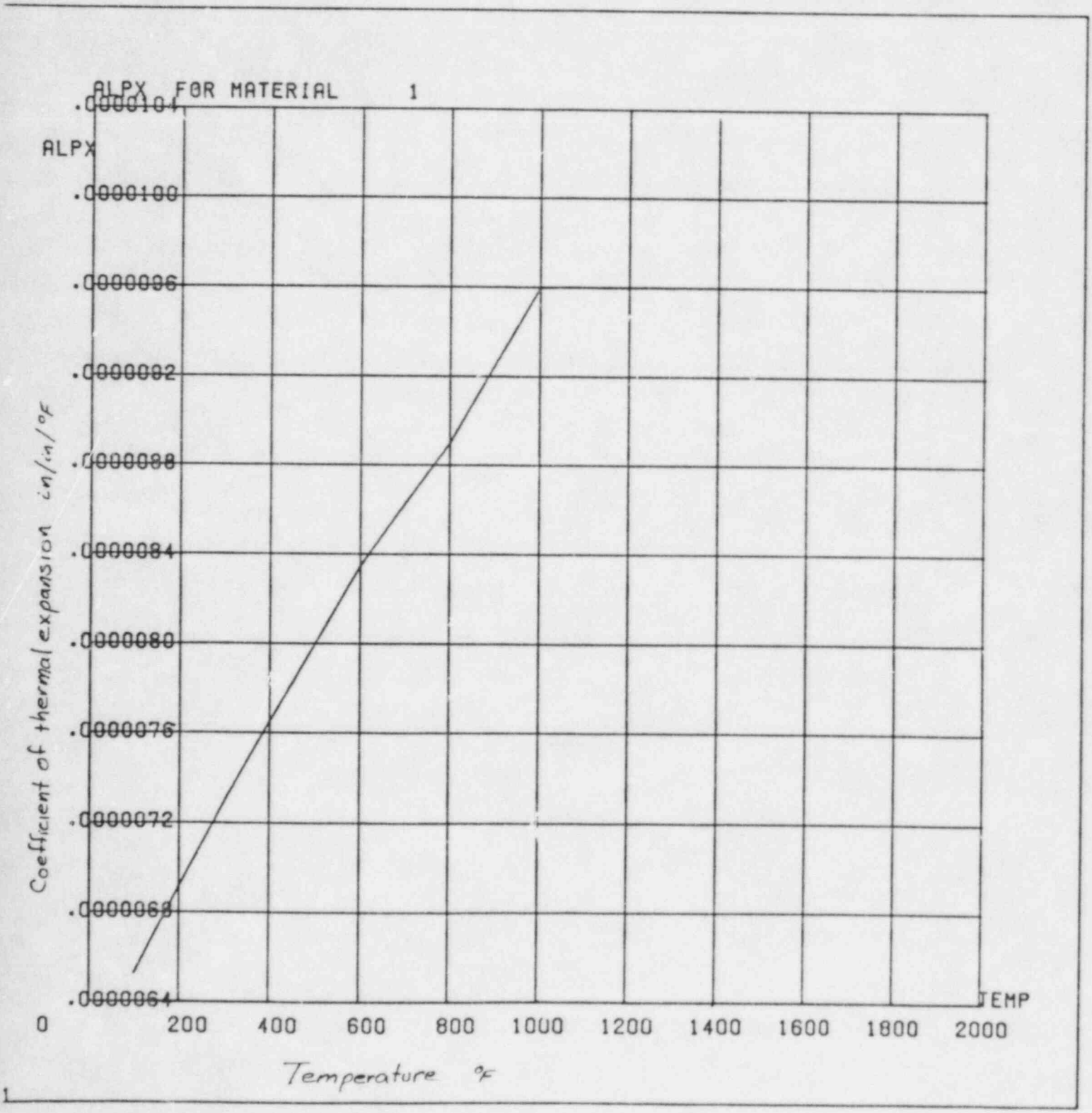
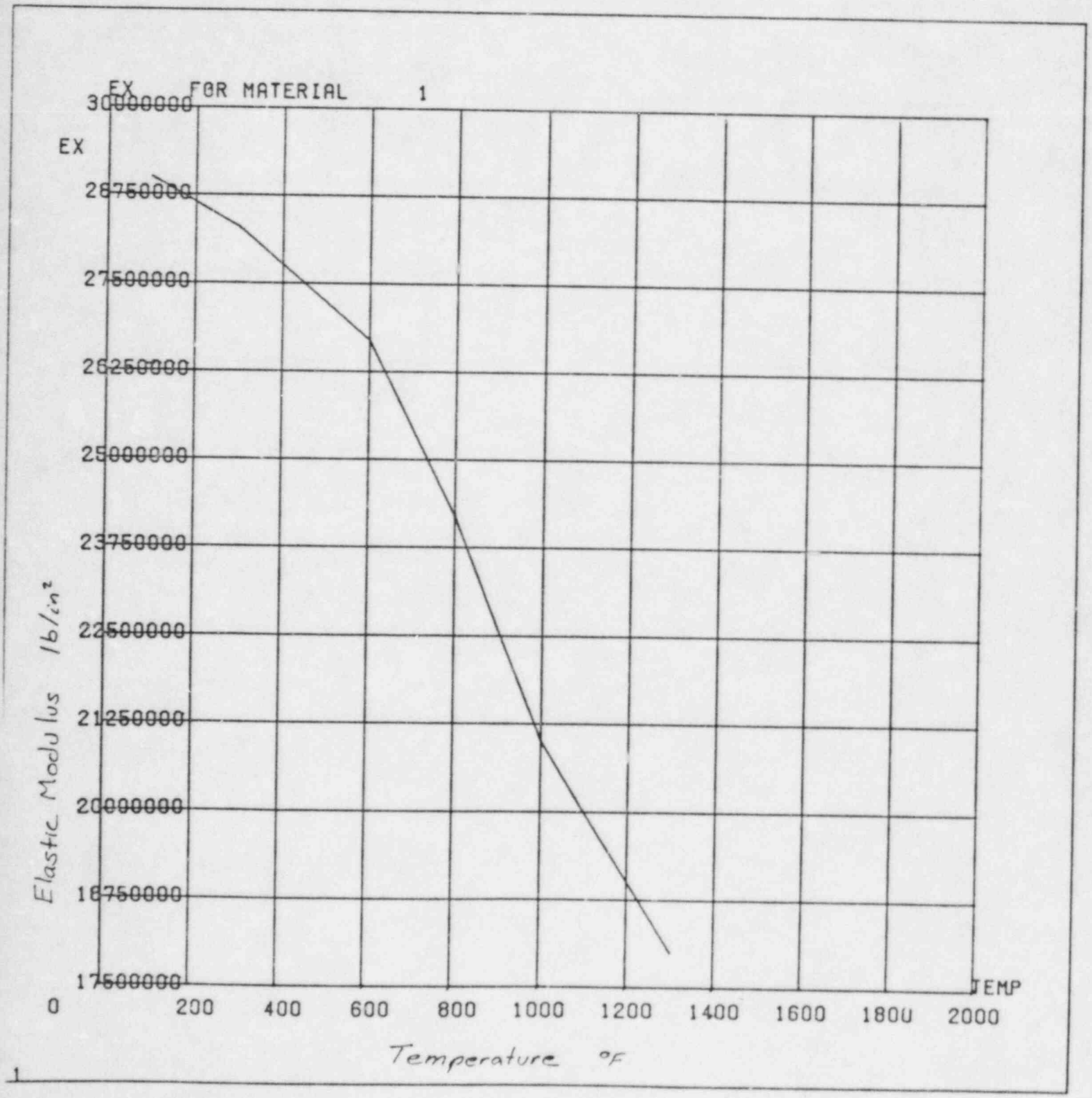


Figure 5 Elastic Modulus.

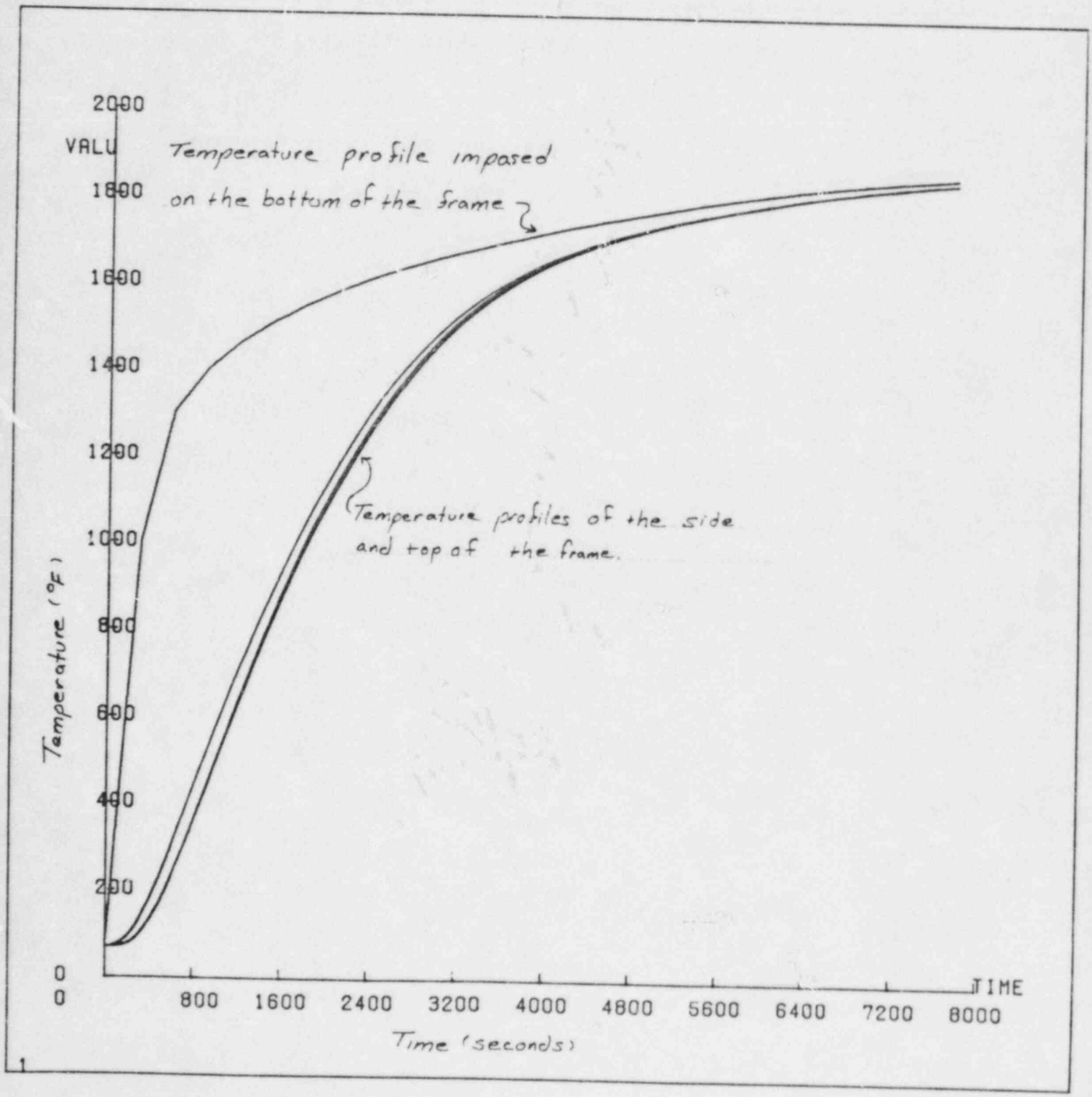


Temperature °F	Yield Stress (KSI)
100	36
300	33
600	27
800	23
1000	18
1300	6

Table 3. Temperature Dependent Yield Stress.

Results: The results of the thermal analysis of the penetration frame model are shown in figure 4. The maximum difference in the temperature between the bottom of the frame and the top of the frame occurred when the bottom of the frame was at 1300°F. After that point, the rate of temperature increase lessens, and the rate of heating of the frame due to conduction and radiation is great enough to decrease the difference in temperature. The temperature distribution in the frame that corresponds to this maximum difference in temperature was chosen for

Figure 6 Temperature time history of the penetration frame.



evaluation of the fire barrier using the structural model of the penetration. The distribution corresponding to the maximum temperature difference was chosen rather than the maximum temperature. The damper, having passed the test specified by reference 3, had been shown to withstand these high temperatures without compromise of the fire barrier. A linear simulation of a uniform temperature increase from 70°F to 150°F, Run IDSJH95, calculated a maximum displacement of .15", but as expected from uniform heating of a body composed entirely of the same material, no deformation and no stress. Since the fire damper curtain would expand due to heating as well, the fire barrier would not be compromised by uniform heating. A linear simulation of the effect of the chosen temperature distribution was performed

(Run ID SJH03). That simulation demonstrated that the HVAC penetration adjacent to the heated frame was the highest stressed region of the model. The heated frame was the second most highly stressed region of the model. The fire damper frame was the third highest stressed region of the model. Figure 7 illustrates the deformation of the HVAC penetration and fire damper frame that was calculated by the linear simulation. The maximum displacement was .15" at the corner of the heated penetration frame. The maximum displacement of the fire damper frame was .102". Figures 8, 9, and 10 illustrate the equivalent (von Mises) stress contours on the top, middle, and bottom of the plate elements of the penetration and fire damper frame model. From these figures, it is evident

Figure 7. Deformation of HVAC penetration and fire damper frame - linear simulation

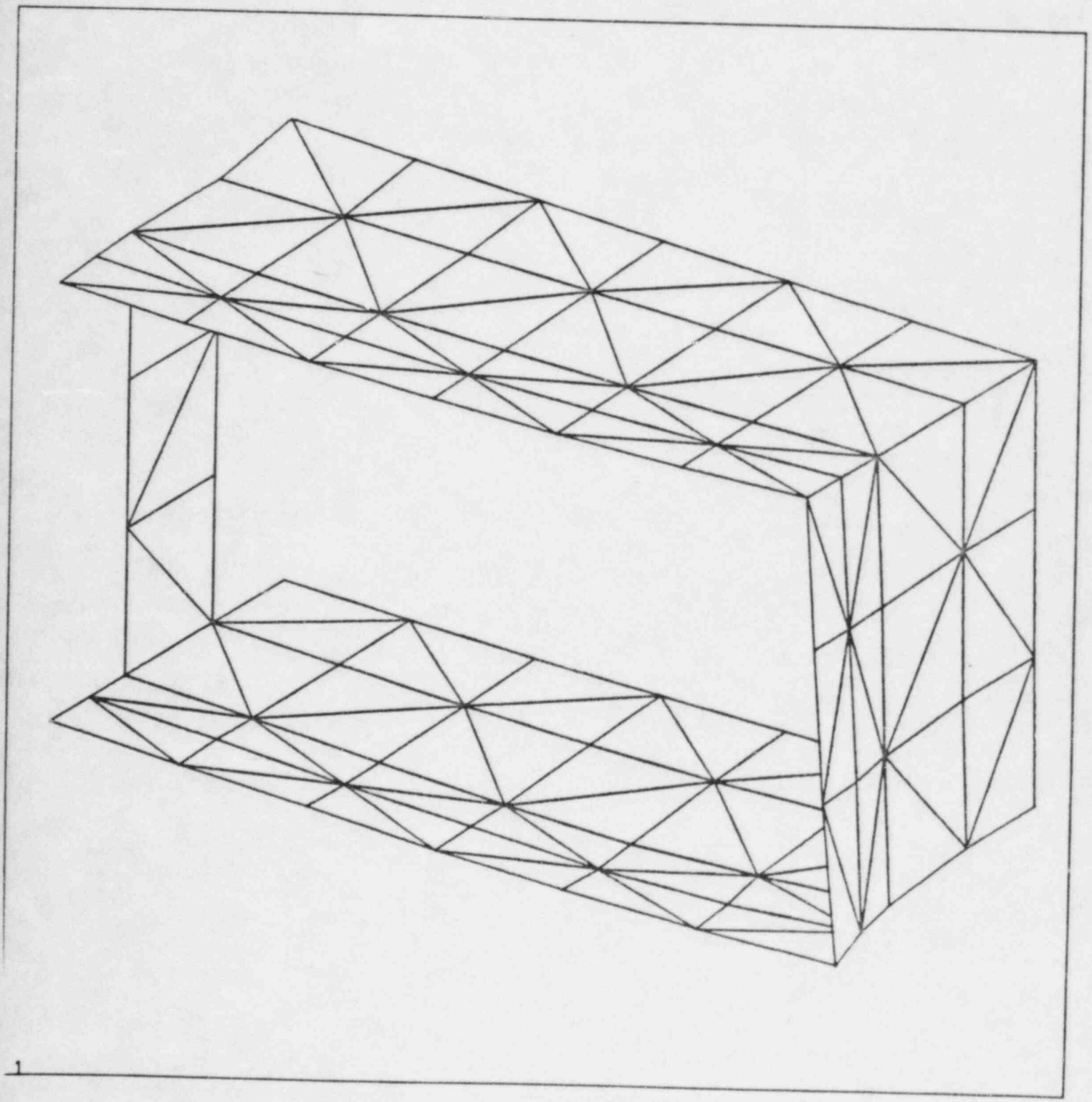


Figure 8. Equivalent stress contours on the top of the plate elements - linear simulation.

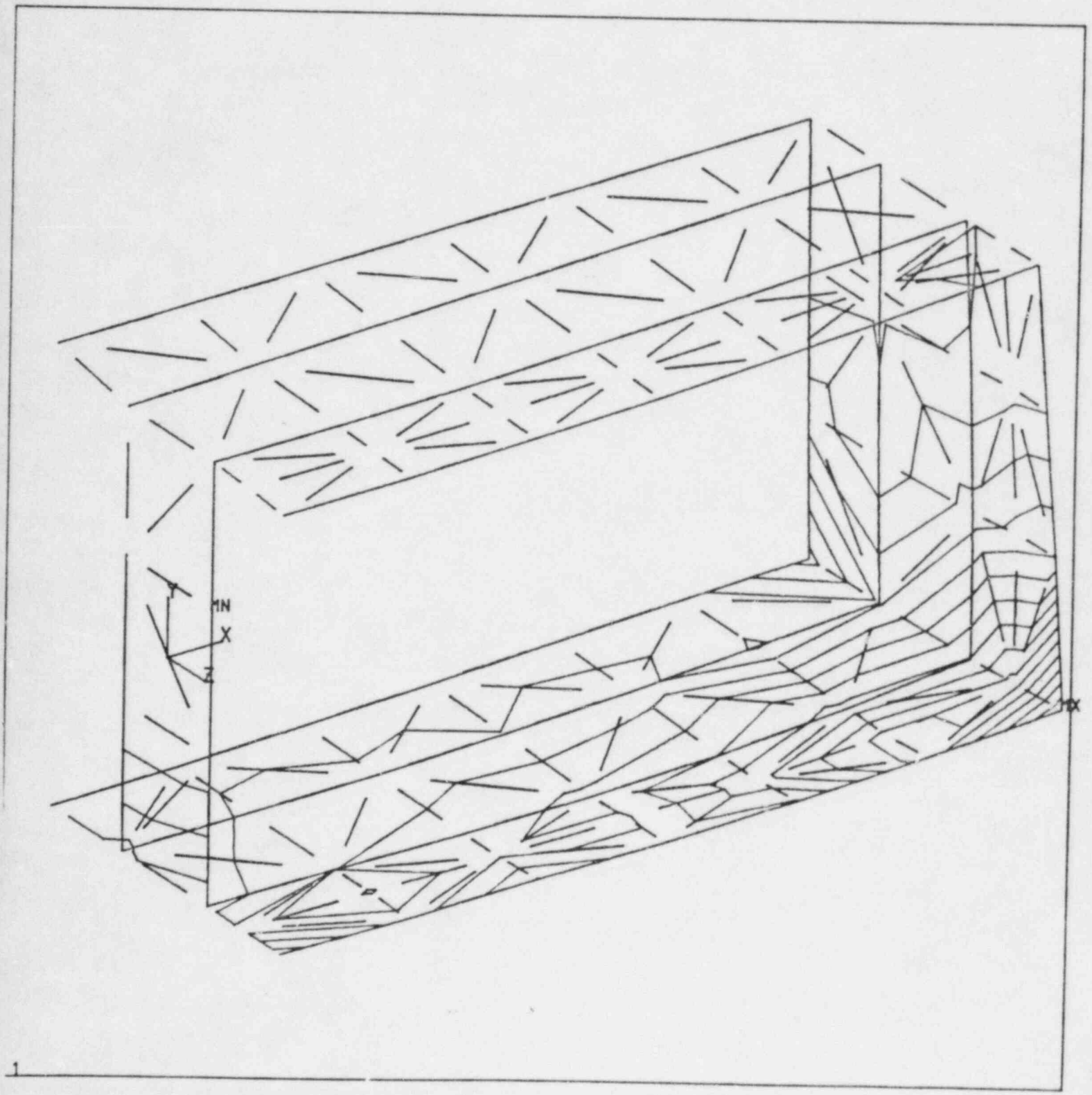


Figure 9. Equivalent stress contours on the midplane of the plate elements - linear solution.

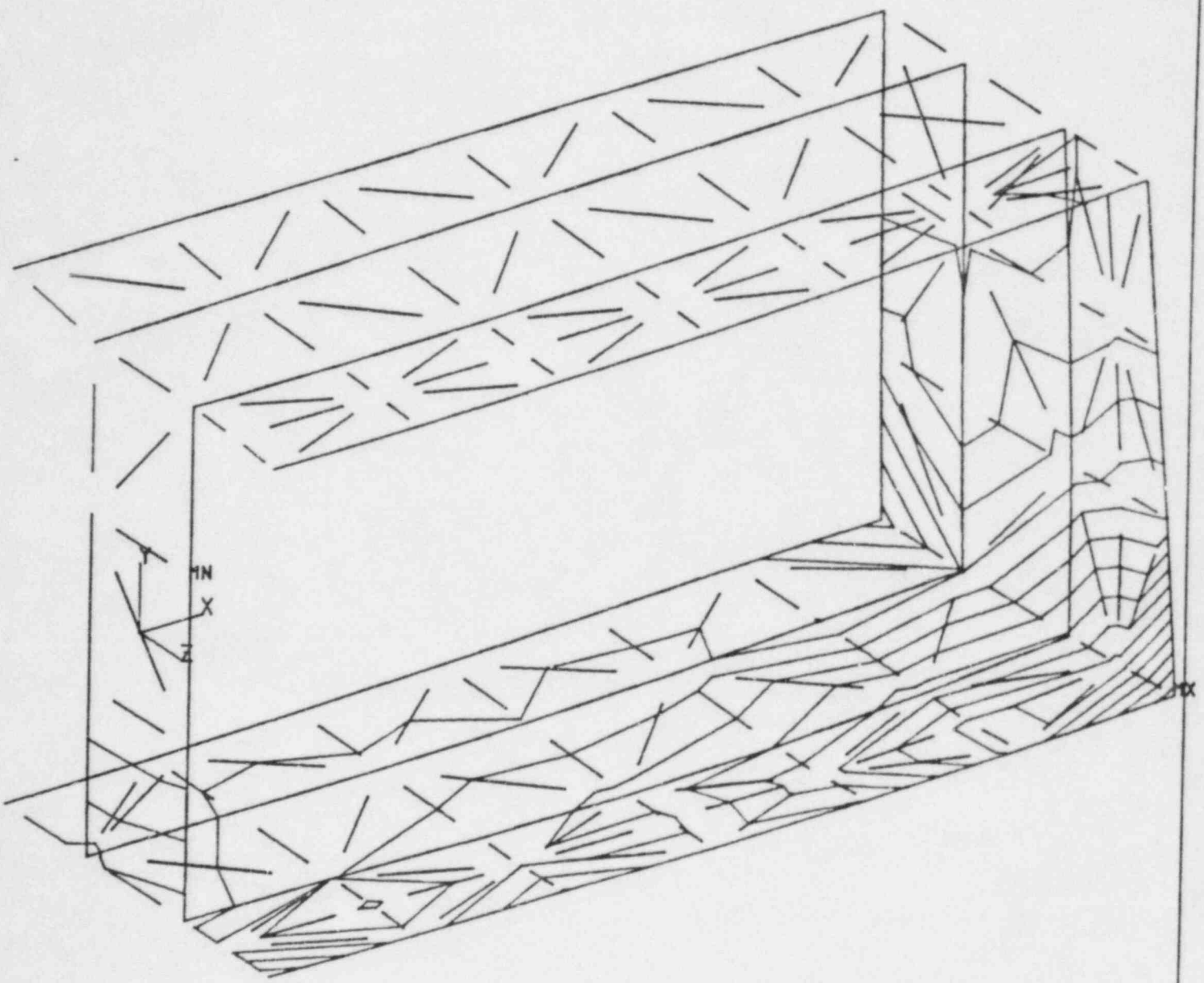
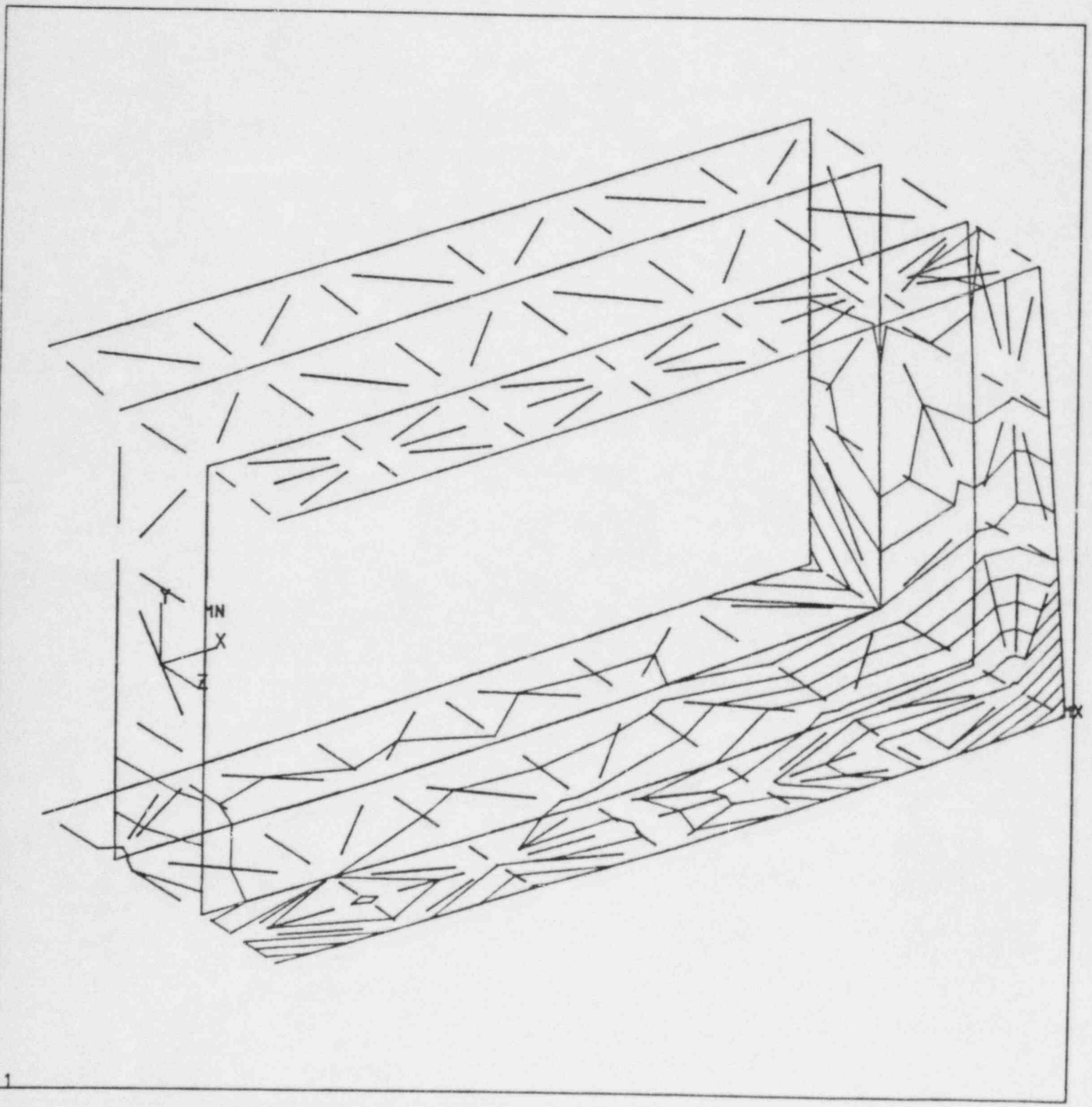


Figure 10. Equivalent stress contours on the bottom of the plate elements - linear simulation



that the maximum stress occurs at the bottom corner of the heated frame. The equivalent stress in the plate element of the bottom of the penetration at that corner is 263 ksi on the top of the element, 259 ksi at the midplane of the element, and 256 ksi at the bottom of the element. This indicates that the element is nearly equally stressed through its thickness. As illustrated by figures 8, 9, and 10, the stress decreases quickly with distance from the corner of the penetration frame. The unrealistically large stress predicted by the linear simulation indicates that the fire damper frame in the linear simulation is experiencing loads that are significantly higher than could realistically be applied by the penetration. A nonlinear large displacement and plastic material simulation of the was performed for penetration frame temperature distributions with a maximum

temperatures of 300°F and 334°F (SJH04). These temperature distributions were specified by scaling the temperatures applied to the linear model. Plastic yielding occurred for both temperature loadings. To evaluate the effect of the plasticity and large deflection nonlinearities, the stress in the highest stressed beam and plate elements of the fire damperframe were compared from scaled values of the linear results and the calculated nonlinear results. The linear resdts were scaled as follows;

Case 1 , scale factor = $\frac{299.9046-150}{1150} = .1303$

Case 2 , scale factor = $\frac{334.3748-150}{1150} = .1603$

The results are tabulated in table 4. These results demonstrate that the offect of the nonlinearities is to unload the fire damper frame.

Maximum Temperature		Maximum Beam Stress element 81 (lb/in^2)	Maximum Plate Equivalent Stress element 105 (lb/in^2)
300°F	Nonlinear	17152	8735
	Linear	17837	10506
344°F	Nonlinear	20532	10422
	Linear	21953	12907

Table 4. Comparison of Linear and Nonlinear Results for Maximum Fire Damper Frame Stress.

Table 4 further demonstrates that the conservatism of the linear solution increases for increased loads.

SARGENT & LUNDY

INTEROFFICE MEMORANDUM

From S. J. Hampton - 30 X6610 Date January 20, 1986

Dept./Div. Mechanical/Component Qualification Project No. 4536-00

Spec. No.

File No. CQD-027437

Page No. 1 of 1

Client Illinois Power Company Stn. Clinton Unit 1

Subject Analysis of Fire Dampers in HVAC Penetrations Subjected To Fire Test Conditions

To: R. A. Parson - 23 (1/0)

CC:
J. Day - Clinton (1/0)
R. J. Kokesh - 30 (1/0)
W. C. McDonald - Clinton (1/0)
A. Nagorzanski - Clinton (1/0)
S. Ornberg - 31 (1/0)
Y. A. Patel - 30 (1/0)
R. D. Raheja - 30 (1/0)
CQD File - 30 (1/1)

REFERENCES:
1. S&L Calculation CQD-020745
2. S&L Drawing M14-1119, Rev. U
3. ASTM Standard E119-83

A survey of typical fire dampers used at Clinton Power Station, Reference 1, was used to identify fire dampers that could be severely affected by warping due to heating of one side of the damper frame by fire. The configuration of a fire damper and surrounding HVAC penetration that was identified as representing a severe case was taken from Reference 2. A conservative thermal anlaysis of the HVAC penetration was performed using the thermal profile of Reference 3 to determine a severe temperature distribution that would cause warping of the HVAC penetration and fire damper frame.

The calculated temperature distribution was used as thermal loading of the angle frame of a finite element model of the HVAC penetration and fire damper frame. The HVAC penetration frame was modelled as continuously attached to the sleeve of the penetration and rigidly continuously attached to the sleeve of the penetration and rigidly continuous at the corners of the penetration. Conservative structural analyses of HVAC penetration and fire damper frame including large deflection and plasticity evaluation calculated fire damper frame displacements enlarging the fire damper frame. The maximum calculated fire damper frame displacement was less than .1". In the closed position, the edge of the curtain of the fire damper is bounded by a .75" frame on both sides of the curtain.

The frame deflection calculated for severe loading is not large enough to compromise the barrier provided by the fire damper.

The supporting calculations are being submitted to file by a copy of this memorandum.

SJH:rmd
Attachment

S J Hampton

HVAC Penetration Frame Thermal Analysis

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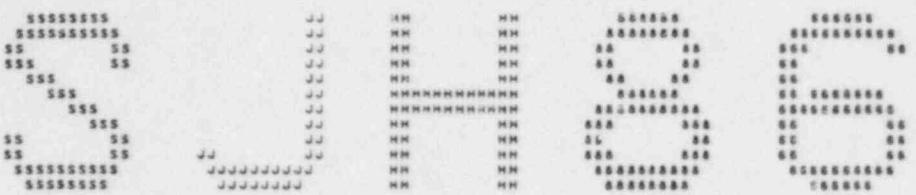

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SARGENT & LUNDY

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SARGENT & LUNDY

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SARGENT & LUNDY

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SARGENT & LUNDY

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SARGENT & LUNDY

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SARGENT & LUNDY

3308

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127             00      LWRITE
128             00      TIME,7800.0
129             00      NT,1,TEMP,1862.0,,5,1
130             00      ITER,2,1,1
131             00      LWRITE
132             00      AFWRIT,,1
133             00      FINISH
134             00      /INPUT,27
135             00      FINISH


@ADD,LP $RUN.

END ELT.  ERRORS: NONE  TIME:  2.487 SEC.  IMAGE COUNT:  135

@PRT,I
FURPUR 28R3A ST4T!! 01/09/86 17:25:03
CL1453600*TPFS(0),D8470,T
SJH-CLINTON*EQUIPMENT(1),D8470,ZOA  @@@J4/SYMSSS,
SYSS*PR@@@@SJH86(1),D8470,IXURP  @@@J4 SYMSSS,
SYSS*$$PROG$NUM$$(0),D8470,T  $PRG$,
CL1453600*$RUN(0),D8470,T  @@@J$PSYMSSS,
SJH-CLINTON*POSTFILE33(1),D8470,XUP  12,

@PRT,$ TPFS DATA.
```

SARGENT & LUNDY

```
CL1453600*TPFS(0),DATA(0)
      1       /PREP7
      2       /TITLE, DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS
      3       C*** NONLINEAR THERMAL TRANSIENT ANALYSIS
      4       KAN,-1
      5       KNL,1
      6       TOFFST,460
      7       C*** USE STIF33 THERMAL ELEMENTS
      8       ET,1,33
      9       C*** USE STIFF 31 CONVECTION ELEMENTS
     10       ET,2,31
     11       R,2,.0039,,6,,3
     12       R,3,.00185,,6,,3
     13       C*** SET UNIFORM TEMPERATURE
     14       TUNIF,,70.0
     15       C*** DEFINE TEMPERATURE DEPENDENT MATERIAL PROPERTIES
     16       MPTEMP,1,32,212,292,572,752,1112 $,7,1472
     17       MPDATA,KXX,1,1,7,3595E-4,5.5965E-4,5.4215E-4,5.0215E-4,5.5185E-4,4.8632E-4
     18       MPDATA,KXX,1,7,4,1485E-4
     19       MPTEMP,1,32,315,700,900,1100
     20       MPDATA,C,1,1,,12,,127,,151,,183,,183
     21       DENS,1,,283
     22       C*** DEFINE ELEMENT CROSS SECTIONAL AREA
     23       R,1,,48
     24       C*** DEFINE NODES
     25       N,1  $,6,29 $ $FILL
     26       N,7,29 $,16.0  $FILL
     27       N,11,0.0,16.0  $FILL
     28       C*** DEFINE ELEMENTS
     29       E,1,2  $EGEN,10,1,1
     30       TYPE,2  $REAL,3
     31       E,1,11  $REAL,2  $E,2,10  $,3,9  $,4,8  $,6,7  $,4,6
     32       C*** DEFINE LOADING
     33       TIME,300.0
     34       ITER,150,5,1
     35       NT,1,TEMP,1000.0,,5,1
     36       LWRITE
     37       TIME,600.0
     38       NT,1,TEMP,1300.0,,5,1
     39       ITER,50,5,1
     40       LWRITE
     41       TIME,900.0
     42       NT,1,TEMP,1389.0,,5,1
     43       ITER,15,5,3
     44       LWRITE
     45       TIME,1200.0
     46       NT,1,TEMP,1462.0,,5,1
     47       ITER,5,1,1
     48       LWRITE
     49       TIME,1500.0
     50       NT,1,TEMP,1510.0,,5,1
     51       ITER,5,1,1
     52       LWRITE
     53       TIME,1800.0
     54       NT,1,TEMP,1550.0,,5,1
     55       ITER,4,1,1
     56       LWRITE
     57       TIME,2100.0
```

SARGENT & LUNDY

```
      NT,1,TEMP,1584.0,,5,1
      LWRITE
      TIME,2400.0
      NT,1,TEMP,1613.0,,5,1
      ITER,4,1,1
      LWRITE
      TIME,2700.0
      NT,1,TEMP,1638.0,,5,1
      ITER,3,1,1
      LWRITE
      TIME,3000.0
      NT,1,TEMP,1661.0,,5,1
      ITER,2,1,1
      LWRITE
      TIME,3200.0
      NT,1,TEMP,1681.0,,5,1
      ITER,2,1,1
      LWRITE
      TIME,3800.0
      NT,1,TEMP,1700.0,,5,1
      ITER,2,1,1
      LWRITE
      TIME,3900.0
      NT,1,TEMP,1718.0,,5,1
      ITER,2,1,1
      LWRITE
      TIME,4200.0
      NT,1,TEMP,1735.0,,5,1
      ITER,2,1,1
      LWRITE
      TIME,4500.0
      NT,1,TEMP,1750.0,,5,1
      ITER,2,1,1
      LWRITE
      TIME,4800.0
      NT,1,TEMP,1765.0,,5,1
      ITER,2,1,1
      LWRITE
      TIME,5100.0
      NT,1,TEMP,1779.0,,5,1
      ITER,2,1,1
      LWRITE
      TIME,5400.0
      NT,1,TEMP,1792.0,,5,1
      ITER,2,1,1
      LWRITE
      TIME,5700.0
      NT,1,TEMP,1804.0,,5,1
      ITER,1,1,1
      LWRITE
      TIME,6000.0
      NT,1,TEMP,1815.0,,5,1
      ITER,1,1,1
      LWRITE
      TIME,6300.0
      NT,1,TEMP,1826.0,,5,1
      ITER,1,1,1
      LWRITE
```

SARGENT & LUNDY

```
      TIME,6600.0
      NT,1,TEMP,1835.0,,5,1
      ITER,1,1,1
      LWRITE
      TIME,6900.0
      NT,1,TEMP,1843.0,,5,1
      ITER,1,1,1
      LWRITE
      TIME,7200.0
      NT,1,TEMP,1850.0,,5,1
      ITER,1,1,1
      LWRITE
      TIME,7500.0
      NT,1,TEMP,1852.0,,5,1
      ITER,2,1,1
      LWRITE
      APWRIT,,1
      FINISH
      /INPUT,27
      FINISH

@ASG,A OPSS*OSSABSOLUTES
W:120333 file is assigned to another run.
W:121433 file is catalogued as a read only file.
W:122333 A write key exists on the file.


@ADD,PL  OPSS*OSSABSOLUTES.ANSOPS185410

@ASG,T   2.,///2500

@ASG,T   3.,///2500

@ASG,T   4.,///2000

@ASG,T   7.,///2000

@ASG,T   8.,///2000

@ASG,T   9.,///2000

@ASG,T   10.,///2000

@ASG,T   11.,///2500

@ASG,T   12.,///3000
W:120133 file is already assigned.
```

SARGENT & LUNDY

3308

12

```
W:122633 option(s) conflict with previous assign options --
option conflict ignored.

@ASG,T   13.,///2000

@ASG,T   14.,///2000

@ASG,T   15.,///2000

@ASG,T   16.,///2000

@ASG,T   17.,///3500

@ASG,T   18.,///2000

@ASG,T   19.,///2000

@ASG,T   20.,///2000

@ASG,T   21.,///2000

@ASG,T   22.,///2000

@ASG,T   23.,///2000

@ASG,T   24.,///2000

@ASG,T   25.,///2000

@ASG,T   30.,///2000

@ASG,A     DSANDOCU$*ANS095185410.
W:121432 file is catalogued as a read only file.
W:122333 a write key exists on the file.

@USE   31.,DSANDOCU$*ANS095183410.
```

SARGENT & LUNDY

13

```
@SLXOT   SYS$*OPS$.ANS095185410
SLXOT 2.2 SL75R1 01/09/86 17:28:07


                PROGRAM ID ANS095185410                                  PROGRAM FILE DATE JANUARY 25, 1985 13:11:25

                RUN ID     SJH86                                         DIVISION STATION ID  CL1453800

                     *****     PROGRAM USED IS VALIDATED ACCORDING TO QQP 4-1     *****
                               AND EXECUTED FROM CSD CONTROLLED FILES
```

SARGENT & LUNDY

3308

```
@XQT    SYS$*OPS$.ANSOBS185A10
```

SARGENT LUNDY

```
          **********  ANSYS INPUT DATA LISTING (FILE16)  **********

          6     12     18     24     30     36     42     48     54     60     66     72     78
          V      V      V      V      V      V      V      V      V      V      V      V      V
  1   /PREP7
  2   /TITLE, DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS
  3   C*** NONLINEAR THERMAL TRANSIENT ANALYSIS
  4   KAN,-1
  5   KNL,1
  6   TOFFST,460.
  7   C*** USE STIF33 THERMAL ELEMENTS
  8   ET,1,33
  9   C*** USE STIFF 31 CONVECTION ELEMENTS
 10   ET,2,31
 11   R,2,.0039,.6,.3
 12   R,3,.00195,.6,.3
 13   C*** SET UNIFORM TEMPERATURE
 14   TUNIF,  70.0
 15   C*** DEFINE TEMPERATURE DEPENDENT MATERIAL PROPERTIES
 16   MPTEMP,1,32,212,392,572,752,1112 $,7,1472
 17   MPDATA,KXX,1,1,7.358E-4,6.598E-4,6.421E-4,6.021E-4,5.816E-4,4.683E-4
 18   MPDATA,KXX,1,7,4.148E-4
 19   MPTEMP,1,32,316,700,900,1100
 20   MPDATA,C,1,1,.12,.127,.151,.183,.193
 21   DENS,1,.283
 22   C*** DEFINE ELEMENT CROSS SECTIONAL AREA
 23   R,1,.48
 24   C*** DEFINE NODES
 25   N,1  $,5,29.5 $FILL
 26   N,7,29.5,15.0  $FILL
 27   N,11,0.0,15.0  $FILL
 28   C*** DEFINE ELEMENTS
 29   E,1,2  $EGEN,10,1,1
 30   TYPE,2  $REAL,3
 31   E,1,11  $REAL,2  $E,2,12  $,3,8  $,4,8  $,4,7  $,4,6
 32   C*** DEFINE LOADING
 33   TIME,300.0
 34   ITER,150,5,1
 35   NT,1,TEMP,1000.0,,5,1
 36   LWRITE
 37   TIME,600.0
 38   NT,1,TEMP,1300.0,,5,1
 39   ITER,50,5,1
 40   LWRITE
 41   TIME,900.0
 42   NT,1,TEMP,1399.0,,5,1
 43   ITER,15,5,3
 44   LWRITE
 45   TIME,1200.0
 46   NT,1,TEMP,1462.0,,5,1
 47   ITER,5,1,1
 48   LWRITE
 49   TIME,1500.0
 50   NT,1,TEMP,1510.0,,5,1
          A     A     A     A     A     A     A     A     A     A     A     A     A
```

3108

SARGENT LUNDY

********** ANSYS INPUT DATA LISTING (FILE18) **********

```
          6     12     18     24     30     35     42     48     54     60     66     72     78
          V      V      V      V      V      V      V      V      V      V      V      V      V
  51    ITER,5,1,1
  52    LWRITE
  53    TIME,1800.0
  54    NT,1,TEMP,1550.0,,5,1
  55    ITER,4,1,1
  56    LWRITE
  57    TIME,2100.0
  58    NT,1,TEMP,1584.0,,5,1
  59    LWRITE
  60    TIME,2400.0
  61    NT,1,TEMP,1613.0,,5,1
  62    ITER,4,1,1
  63    LWRITE
  64    TIME,2700.0
  65    NT,1,TEMP,1638.0,,5,1
  66    ITER,3,1,1
  67    LWRITE
  68    TIME,3000.0
  69    NT,1,TEMP,1661.0,,5,1
  70    ITER,2,1,1
  71    LWRITE
  72    TIME,3300.0
  73    NT,1,TEMP,1681.0,,5,1
  74    ITER,2,1,1
  75    LWRITE
  76    TIME,3600.0
  77    NT,1,TEMP,1700.0,,5,1
  78    ITER,2,1,1
  79    LWRITE
  80    TIME,3900.0
  81    NT,1,TEMP,1716.0,,5,1
  82    ITER,2,1,1
  83    LWRITE
  84    TIME,4200.0
  85    NT,1,TEMP,1735.0,,5,1
  86    ITER,2,1,1
  87    LWRITE
  88    TIME,4500.0
  89    NT,1,TEMP,1750.0,,5,1
  90    ITER,2,1,1
  91    LWRITE
  92    TIME,4800.0
  93    NT,1,TEMP,1765.0,,5,1
  94    ITER,2,1,1
  95    LWRITE
  96    TIME,5100.0
  97    NT,1,TEMP,1778.0,,5,1
  98    ITER,2,1,1
  99    LWRITE
 100    TIME,5400.0
          A      A      A      A      A      A      A      A      A      A      A      A      A
```

SARGENT & LUNDY

********** ANSYS INPUT DATA LISTING (FILE18) **********

```
          6     12     18     24     30     35     42     48     54     60     66     72     78
          V      V      V      V      V      V      V      V      V      V      V      V      V
 101    NT,1,TEMP,1782.0,,5,1
 102    ITER,2,1,1
 103    LWRITE
 104    TIME,5700.0
 105    NT,1,TEMP,1804.0,,5,1
 106    ITER,1,1,1
 107    LWRITE
 108    TIME,6000.0
 109    NT,1,TEMP,1818.0,,5,1
 110    ITER,1,1,1
 111    LWRITE
 112    TIME,6300.0
 113    NT,1,TEMP,1828.0,,5,1
 114    ITER,1,1,1
 115    LWRITE
 116    TIME,6600.0
 117    NT,1,TEMP,1835.0,,5,1
 118    ITER,1,1,1
 119    LWRITE
 120    TIME,6900.0
 121    NT,1,TEMP,1843.0,,5,1
 122    ITER,1,1,1
 123    LWRITE
 124    TIME,7200.0
 125    NT,1,TEMP,1850.0,,5,1
 126    ITER,1,1,1
 127    LWRITE
 128    TIME,7800.0
 129    NT,1,TEMP,1852.0,,5,1
 130    ITER,2,1,1
 131    LWRITE
 132    AFWRIT,,1
 133    FINISH
 134    /INPUT,27
 135    FINISH
```

SARGENT & LUNDY

```
     ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1        C       SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-6655

 TITLE                                                                    17.4431    1/ 9/86 CP=          .000

          ***** ANSYS ANALYSIS DEFINITION (PREPT) *****

 NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS

 C*** NONLINEAR THERMAL TRANSIENT ANALYSIS

 ANALYSIS TYPE=  -1

 NON-LINEAR ANALYSIS - SUPPLY NON-LINEAR PROPERTIES

 TEMPERATURE OFFSET FROM ABSOLUTE ZERO=  460.000

 C*** USE STIF33 THERMAL ELEMENTS

 ELEMENT TYPE   1 USES STIF 33
  KEYOPT(1-8)=   0   0   0      0   0   0      0   0   0  INOTPR=  0  NUMBER OF NODES=   2

 CONDUCTING BAR, 3-D

 CURRENT NODAL DOF SET IS  TEMP
  THREE-DIMENSIONAL STRUCTURE

 C*** USE STIFF 31 CONVECTION ELEMENTS

 ELEMENT TYPE   2 USES STIF 31
  KEYOPT(1-8)=   0   0   0      0   0   0      0   0   0  INOTPR=  0  NUMBER OF NODES=   2

 RADIATION LINK

 CURRENT NODAL DOF SET IS  TEMP
  THREE-DIMENSIONAL STRUCTURE

  REAL CONSTANT SET    2  ITEMS    1 TO    6
       .290-002        .800            .300            .000            .000            .000

  REAL CONSTANT SET    3  ITEMS    1 TO    6
       .195-002        .600            .300            .000            .000            .000

 C*** SET UNIFORM TEMPERATURE

 UNIFORM TEMPERATURE=    70.000  (TREF=       .000)

 C*** DEFINE TEMPERATURE DEPENDENT MATERIAL PROPERTIES

 *** TEMPERATURE TABLE FOR PROPERTIES     NUM. TEMPS=  6 ***
 SLOC=    1      32.00000        212.0000        392.0000
               572.0000        752.0000        1112.000
```

SARGENT & LUNDY

```
 *** TEMPERATURE TABLE FOR PROPERTIES     NUM. TEMPS=  7 ***
 SLOC=    7      1472.000

 PROPERTY TABLEKXX    MAT=    1  NUM. POINTS=  6
 SLOC=    1       .7359000-003    .6598000-003    .8421000-003    .8021000-003
                  .8618000-003    .4883000-003

 PROPERTY TABLEKXX    MAT=    1  NUM. POINTS=  7
 SLOC=    7       .4148000-003

 *** TEMPERATURE TABLE FOR PROPERTIES     NUM. TEMPS=  7 ***
 SLOC=    1      32.00000        316.0000        700.0000
               900.0000        1100.000        1112.000

 PROPERTY TABLEC      MAT=    1  NUM. POINTS=  5
 SLOC=    1       .1200000        .1270000        .1510000        .1830000
                  .1930000

  MATERIAL    1          COEFFICIENTS OF DENS VS. TEMP EQUATION
    C0 =     .2830000

 PROPERTY TABLE DENS  MAT=    1  NUM. POINTS=  7
        TEMPERATURE       DATA          TEMPERATURE       DATA
       32.00000        .2830000        316.0000        .2830000
       700.0000        .2830000        900.0000        .2830000
       1100.000        .2830000        1112.000        .2830000
       1472.000        .2830000

 C*** DEFINE ELEMENT CROSS SECTIONAL AREA

  REAL CONSTANT SET    1  ITEMS    1 TO    6
       .480            .000            .000            .000            .000            .000

 C*** DEFINE NODES

 NODE     1  KCS= 0  X,Y,Z=    .00000          .00000          .00000

 NODE     5  KCS= 0  X,Y,Z=   29.500          .00000          .00000

 FILL     3 POINTS BETWEEN NODE     1 AND NODE     5
  START WITH NODE     2 AND INCREMENT BY      1

 NODE     7  KCS= 0  X,Y,Z=   29.500         18.000          .00000

 FILL     1 POINTS BETWEEN NODE     5 AND NODE     7
  START WITH NODE     6 AND INCREMENT BY      1

 NODE    11  KCS= 0  X,Y,Z=    .00000         18.000          .00000

 FILL     3 POINTS BETWEEN NODE     7 AND NODE    11
  START WITH NODE     8 AND INCREMENT BY      1

 C*** DEFINE ELEMENTS

 ELEMENT     1       1       2
```

SARGENT & LUNDY

3308

```
GENERATE    10 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      1
  SET IS     1 TO     1 IN STEPS OF     1
NUMBER OF ELEMENTS=     10

ELEMENT TYPE SET TO  2

REAL CONSTANT NUMBER=  3
ELEMENT    11         1     11

REAL CONSTANT NUMBER=  2
ELEMENT    12         2     10
ELEMENT    13         3      9
ELEMENT    14         4      8
ELEMENT    15         4      7
ELEMENT    16         4      6

C*** DEFINE LOADING


TIME=  300.00

NITTER=     150  NPRINT=      5  NPOST=      1

ALL PRINT CONTROLS RESET TO      5
 ALL POST DATA FILE CONTROLS RESET TO      1

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1000.0       ADDITIONAL DOFS=

LOAD STEP      1  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  600.00

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1300.0       ADDITIONAL DOFS=

NITTER=      50  NPRINT=      5  NPOST=      1

ALL PRINT CONTROLS RESET TO      5
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP      2  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  900.00

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1398.0       ADDITIONAL DOFS=

NITTER=      15  NPRINT=      5  NPOST=      3

ALL PRINT CONTROLS RESET TO      5
 ALL POST DATA FILE CONTROLS RESET TO      3

LOAD STEP      3  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  1200.0
```

SARGENT & LUNDY

```
SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1462.0       ADDITIONAL DOFS=

NITTER=       5  NPRINT=      1  NPOST=      1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP      4  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  1500.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1510.0       ADDITIONAL DOFS=

NITTER=       5  NPRINT=      1  NPOST=      1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP      5  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  1800.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1550.0       ADDITIONAL DOFS=

NITTER=       4  NPRINT=      1  NPOST=      1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP      6  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  2100.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1584.0       ADDITIONAL DOFS=

LOAD STEP      7  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  2400.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1613.0       ADDITIONAL DOFS=

NITTER=       4  NPRINT=      1  NPOST=      1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP      8  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  2700.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1638.0       ADDITIONAL DOFS=
```

SARGENT & LUNDY

3308

```
NITTER=       3  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP      9  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  3000.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF      1
 VALUES=  1661.0       ADDITIONAL DOFS=

NITTER=       2  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     10  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  3300.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF      1
 VALUES=  1681.0       ADDITIONAL DOFS=

NITTER=       2  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     11  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  3600.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF      1
 VALUES=  1700.0       ADDITIONAL DOFS=

NITTER=       2  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     12  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  3900.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF      1
 VALUES=  1718.0       ADDITIONAL DOFS=

NITTER=       2  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     13  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  4200.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF      1
```

SARGENT & LUNDY

```
 VALUES=  1735.0       ADDITIONAL DOFS=

NITTER=       2  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     14  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  4500.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF      1
 VALUES=  1750.0       ADDITIONAL DOFS=

NITTER=       2  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     15  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  4800.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF      1
 VALUES=  1765.0       ADDITIONAL DOFS=

NITTER=       2  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     16  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  5100.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF      1
 VALUES=  1778.0       ADDITIONAL DOFS=

NITTER=       2  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     17  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  5400.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF      1
 VALUES=  1792.0       ADDITIONAL DOFS=

NITTER=       2  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     18  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  5700.0
```

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SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1804.0       ADDITIONAL DOFS=

NITTER=       1  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     19  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  6000.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1815.0       ADDITIONAL DOFS=

NITTER=       1  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     20  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  6300.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1826.0       ADDITIONAL DOFS=

NITTER=       1  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     21  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  6600.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1835.0       ADDITIONAL DOFS=

NITTER=       1  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     22  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  6900.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1843.0       ADDITIONAL DOFS=

NITTER=       1  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     23  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29
```



```
TIME=  7200.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1850.0       ADDITIONAL DOFS=

NITTER=       1  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     24  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

TIME=  7800.0

SPECIFIED TEMP  DEFINITION FOR TEMP FROM NODE      1 TO NODE      5 IN STEPS OF     1
 VALUES=  1862.0       ADDITIONAL DOFS=

NITTER=       2  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

LOAD STEP     25  WRITTEN ON FILE23.  TOTAL LOAD COMMANDS=     29

*** NOTE ***  KRF KEY NOT SET - NO NODAL HEAT FLOWS
               WILL BE AVAILABLE FOR POSTPROCESSING

DATA CHECKED - NO FATAL ERRORS FOUND
CHECK OUTPUT FOR POSSIBLE WARNING MESSAGES.

ANALYSIS DATA WRITTEN ON FILE27 (   863 LINES)

*** PREP7 GLOBAL STATUS ***

TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS
ANALYSIS TYPE=     -1
NUMBER OF ELEMENT TYPES=      2
NUMBER OF ELEMENTS=     16
MAXIMUM NODE NUMBER=     11
MAXIMUM LINEAR PROPERTY NUMBER=      1
MAXIMUM REAL CONSTANT SET NUMBER=      3
ACTIVE COORDINATE SYSTEM=      0  (CARTESIAN)
NUMBER OF NODAL TEMPERATURES=      5

ALL CURRENT PREP7 DATA WRITTEN TO FILE18
 FOR POSSIBLE RESUME FROM THIS POINT


***** ROUTINE COMPLETED *****  CP =        258.676

***** INPUT FILE SWITCHED FROM FILE18 TO FILE27
```

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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 17.5150 1/ 9/86 CP= 258.540

***** NOTICE ***** THIS IS THE ANSYS GENERAL PURPOSE FINITE ELEMENT COMPUTER PROGRAM. NEITHER SWANSON ANALYSIS SYSTEMS, INC. NOR THE CORPORATION SUPPLYING THE COMPUTER FACILITIES FOR THIS ANALYSIS ASSUME ANY RESPONSIBILITY FOR THE VALIDITY, ACCURACY, OR APPLICABILITY OF ANY RESULTS OBTAINED FROM THE ANSYS SYSTEM. THE USER MUST VERIFY HIS OWN RESULTS.

SWANSON ANALYSIS SYSTEMS, INC. IS ENDEAVORING TO MAKE THE ANSYS PROGRAM AS COMPLETE, ACCURATE, AND EASY TO USE AS POSSIBLE. SUGGESTIONS AND COMMENTS ARE WELCOMED. ANY ERRORS ENCOUNTERED IN EITHER THE DOCUMENTATION OR THE RESULTS SHOULD BE IMMEDIATELY BROUGHT TO OUR ATTENTION.

***** ANALYSIS OPTIONS *****

	VALUE
ANALYSIS TYPE	-1
ELEMENT CONSTANT TABLE	6
MASTER DOF READ KEY	1
MATERIAL TABLE ENTRIES	24
UNIFORM TEMPERATURE	70.00
TEMPERATURE ZERO SHIFT	460.00

***** ELEMENT TYPES *****

TYPE	STIF	DESCRIPTION	KEY OPTIONS 1	2	3	4	5	6	7	8	9	NJ	INOTPR
1	33	CONDUCTING BAR, 3-D	0	0	0	0	0	0	0	0	0	0	0
2	31	RADIATION LINK	0	0	0	0	0	0	0	0	0	0	0

NUMBER OF ELEMENT TYPES= 2

***** TABLE OF ELEMENT REAL CONSTANTS *****

NO.			
1	.48000		
2	.39000-002	.80000	.30000
3	.13500-002	.80000	.30000

NUMBER OF REAL CONSTANT SETS= 3

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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 17.5150 1/ 9/86 CP= 259.021

***** ELEMENT DEFINITIONS *****

ELEMENT	NODES			MAT	TYPE	CLASS	ELEMENT REAL CONSTANTS
SWITCHED TO FIXED FORMAT INPUT							
							AREA
1	1	2		1	1	0	.480
2	2	3		1	1	0	.480
3	3	4		1	1	0	.480
4	4	5		1	1	0	.480
5	5	6		1	1	0	.480
6	6	7		1	1	0	.480
7	7	8		1	1	0	.480
8	8	9		1	1	0	.480
9	9	10		1	1	0	.480
10	10	11		1	1	0	.480
							AREA / FORM / EMIS / SBC
11	1	11		1	2	0	.195-002 / .600 / .300 / .119-010
12	2	10		1	2	0	.390-003 / .600 / .300 / .119-010
13	3	9		1	2	0	.390-003 / .600 / .300 / .119-010
14	4	8		1	2	0	.390-003 / .600 / .300 / .119-010
15	4	7		1	2	0	.390-003 / .600 / .300 / .119-010
16	4	6		1	2	0	.390-003 / .600 / .300 / .119-010

INTEGER STORAGE REQUIREMENTS FOR ELEMENT INPUT CP= 260.015 TIME= 17.51528
MEMORY REQUIRED= 1071 MEMORY AVAILABLE= 4002000
MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE= 2000474

NUMBER OF ELEMENTS = 16 MAXIMUM NODE NUMBER USED = 11

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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 17.51.55 1/ 9/84 CP= 261.075

***** NODE DEFINITIONS *****

NODE	LOCATION X (OR R)	Y (OR THETA)	Z (OR PHI)	ROTATION (DEGREES) THXY (OR RT)	THYZ (TZ OR TP)	THXZ (RZ OR RP)
SWITCHED TO FIXED FORMAT INPUT						
1	.00000	.00000	.00000	.00000	.00000	.00000
2	7.3750	.00000	.00000	.00000	.00000	.00000
3	14.750	.00000	.00000	.00000	.00000	.00000
4	22.125	.00000	.00000	.00000	.00000	.00000
5	29.500	.00000	.00000	.00000	.00000	.00000
6	29.500	8.0000	.00000	.00000	.00000	.00000
7	29.500	16.000	.00000	.00000	.00000	.00000
8	22.125	16.000	.00000	.00000	.00000	.00000
9	14.750	16.000	.00000	.00000	.00000	.00000
10	7.3750	16.000	.00000	.00000	.00000	.00000
11	.00000	16.000	.00000	.00000	.00000	.00000

XMIN= .0000 XMAX= 29.50 YMIN= .0000 YMAX= 16.00 ZMIN= .0000 ZMAX= .0000

INTEGER STORAGE REQUIREMENTS FOR NODE INPUT CP= 261.111 TIME= 17.51.55
MEMORY REQUIRED= 132 MEMORY AVAILABLE= 4002000
MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE= 667000

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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 17.51.51 1/ 9/84 CP= 262.336

***** MATERIAL PROPERTIES *****

MATERIAL 1

KXX PROPERTY TABLE (LINEAR INTERPOLATION)

TEMP	KXX	TEMP	KXX	TEMP	KXX	TEMP	KXX	TEMP	KXX
32.0	.73590-003	212.0	.65960-003	392.0	.64210-003	572.0	.60210-003	752.0	.56160-003
1112.0	.46830-003	1472.0	.41480-003						

C PROPERTY TABLE (LINEAR INTERPOLATION)

TEMP	C	TEMP	C	TEMP	C	TEMP	C	TEMP	C
32.0	.12000	316.0	.12700	700.0	.15100	800.0	.16300	1100.0	.18300

DENS PROPERTY TABLE (LINEAR INTERPOLATION)

TEMP	DENS	TEMP	DENS	TEMP	DENS	TEMP	DENS	TEMP	DENS
32.0	.28300	316.0	.28300	700.0	.28300	800.0	.28300	1100.0	.28300
1112.0	.28300	1472.0	.28300						

MAXIMUM MATERIAL NUMBER= 1

***** MASTER DEGREES OF FREEDOM *****

NODE DEGREES OF FREEDOM LIST

NUMBER OF SPECIFIED MASTER D.O.F.= 0
TOTAL NUMBER OF MASTER D.O.F. = 0

INTEGER STORAGE REQUIREMENTS FOR MATERIALS, ETC. INPUT CP= 262.665 TIME= 17.51.51
MEMORY REQUIRED= 308 MEMORY AVAILABLE= 4002000

*** LOAD STEP 1 OPTIONS SPECIFICATIONS

NITTER= 150 NPRINT= 5 NPOST= 1

ALL PRINT CONTROLS RESET TO 5

ALL POST DATA FILE CONTROLS RESET TO 1

NEW TITLE= DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS

NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME= 300.00

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ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

CGDOME=    .00000        .00000        .00000

KTEMP=       0      0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=   1.0000
TRANSIENT OPTIMIZATION CRITERIA= 10.0000
TEMPERATURE LIMIT=    .00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=      0
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=      0    ISYM=      1

NUMBER OF STRESS PASS CALCULATIONS=      0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000  (TREF=       .000)

SEISMIC COMBINATION TYPE (MCOMB)=    0

DAMPING RATIO =          .0000

BOUNDARY CONDITION PRINT KEY=  0
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    17.51641   1/ 9/88 CP=     263.766

LOAD STEP NUMBER=      1

          *** LOAD OPTIONS SUMMARY ***

TIME   =  300.00       (TIME AT END OF LOAD STEP)
NITTER=     150        (NUMBER OF ITERATIONS)
TUNIF  =   70.0000     (UNIFORM TEMPERATURE)    (TREF=       .0000)
KBC    =    0          (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS
                         FLOW AND HEAT GENERATION VALUES RAMPED FROM ZERO,
                         NODE AND BULK TEMPERATURES RAMPED FORM TUNIF,
                         FILM COEFFICIENTS STEPPED TO FINAL VALUES.)

NPRINT=       5        (OVERALL PRINT FREQUENCY)
NPOST  =      1        (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
  FREQ    NSTRT   NSTOP    NINC
     5        1   99999       1

 ELEMENT PRINT AND POST FREQUENCIES
  TYPE  STIFF  STRESS  FORCE       STRESS  STRESS  FORCE
          NO.   PRINT  PRINT        POST    LEVEL   POST
    1     33       5      5           1       3      1
    2     31       5      5           1       3      1


           ***** SPECIFIED TEMPERATURES *****

   NODE       TEMP

      1     1000.00
      2     1000.00
      3     1000.00
      4     1000.00
      5     1000.00


***** LOAD SUMMARY -       5 TEMPERATURES       0 HEAT FLOWS     0 CONVECTIONS      *****


 INTEGER STORAGE REQUIREMENTS FOR LOAD DATA INPUT                    CP=   264.023  TIME= 17.51639
 MEMORY REQUIRED=      342  MEMORY AVAILABLE= 4002000

 RANGE OF ELEMENT MAXIMUM CONDUCTIVITY IN GLOBAL COORDINATES

MAXIMUM=   .488475-004  AT ELEMENT      10
MINIMUM=   .248738-005  AT ELEMENT      11
```

3308

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 INTEGER STORAGE REQUIREMENTS FOR ELEMENT FORMULATION              CP=   267.058  TIME= 17.51722
 MEMORY REQUIRED=      340  MEMORY AVAILABLE= 4002000

  *** ELEMENT STIFFNESS FORMULATION TIMES
 TYPE  NUMBER  STIF  TOTAL CP   AVE CP

   1      10    33      .440      .044
   2       6    31      .267      .045

TIME AT END OF ELEMENT STIFFNESS FORMULATION  CP=      267.101

MAXIMUM IN-CORE WAVE FRONT ALLOWED FOR REQUESTED MEMORY SIZE= 1958

 INTEGER STORAGE REQUIREMENTS FOR WAVE FRONT MATRIX SOLUTION       CP=   268.380  TIME= 17.51778
 MEMORY REQUIRED=      404  MEMORY AVAILABLE= 4002000

MAXIMUM IN-CORE WAVE FRONT=       6.

     MATRIX SOLUTION TIMES
 READ IN ELEMENT STIFFNESSES   CP=              .189

 NODAL COORD. TRANSFORMATION   CP=              .000
 MATRIX TRIANGULARIZATION      CP=              .413

TIME AT END OF MATRIX TRIANGULARIZATION  CP=       268.381

 INTEGER STORAGE REQUIREMENTS FOR BACK SUBSTITUTION                CP=   269.043  TIME= 17.51778
 MEMORY REQUIRED=      366  MEMORY AVAILABLE= 4002000

  *** ELEM. HT. FLOW CALC. TIMES
 TYPE  NUMBER  STIF  TOTAL CP   AVE CP

   1      10    33      .481      .048
   2       6    31      .182      .030

*** LOAD STEP     1   ITER      1  COMPLETED.  TIME=   2.00000      TIME INC=   2.00000      NEW TRIANG MATRIX.  CUM. ITER. =     1

 INTEGER STORAGE REQUIREMENTS FOR HEAT FLOW CALCULATIONS           CP=   270.131  TIME= 17.51833
 MEMORY REQUIRED=      362  MEMORY AVAILABLE= 4002000

  *** STORAGE REQUIREMENT SUMMARY
MAXIMUM MEMORY USED           =     1071
MAXIMUM MEMORY AVAILABLE      = 4002000

  *** PROBLEM STATISTICS
NO. OF ACTIVE DEGREES OF FREEDOM =       6
R.M.S. WAVEFRONT SIZE =      3.3

 *** ANSYS BINARY FILE STATISTICS
```

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BUFFER SIZE USED= 1232
POST DATA WRITTEN ON FILE11
RESTART DATA WRITTEN ON FILE 3    (     3814 WORDS)
TEMPERATURES WRITTEN ON FILE 4

 TRANSIENT OPTIMIZATION VALUE =    .40195-002 AT NODE       7
*** LOAD STEP     1   ITER      2  COMPLETED.  TIME=   4.06700      TIME INC=   2.00000      NEW TRIANG MATRIX.  CUM. ITER. =     2

 TRANSIENT OPTIMIZATION VALUE =    .43521-002 AT NODE       6
*** LOAD STEP     1   ITER      3  COMPLETED.  TIME=   6.00000      TIME INC=   2.00000      NEW TRIANG MATRIX.  CUM. ITER. =     3

 TRANSIENT OPTIMIZATION VALUE =    .44586-002 AT NODE       6
*** LOAD STEP     1   ITER      4  COMPLETED.  TIME=   8.00000      TIME INC=   2.00000      NEW TRIANG MATRIX.  CUM. ITER. =     4
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    17.8633   1/ 9/84 CP=     783.155

 ***** TEMPERATURE  SOLUTION *****      TIME =     10.000       LOAD STEP=    1  ITERATION=     5  CUM  ITER. =     5
     NODE    TEMP            NODE    TEMP            NODE    TEMP            NODE    TEMP            NODE    TEMP
        1   101.00             2   101.00             3   101.00             4   101.00             5   101.00
        6   70.058             7   70.007             8   70.007             9   70.007            10   70.007
       11   70.007

  MAXIMUM TEMPERATURE=   101.00      AT NODE      5
  MINIMUM TEMPERATURE=   70.007      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    10.0000       LOAD STEP=    1   ITER. =     5   CUM. ITER. =     5

 TRANSIENT OPTIMIZATION VALUE =     .44904-002 AT NODE      6
*** LOAD STEP     1   ITER      5  COMPLETED.   TIME=    10.0000       TIME INC=    2.00000     NEW TRIANG MATRIX  CUM. ITER. =     5

 TRANSIENT OPTIMIZATION VALUE =     .44874-002 AT NODE      6
*** LOAD STEP     1   ITER      6  COMPLETED.   TIME=    12.0000       TIME INC=    2.00000     NEW TRIANG MATRIX  CUM. ITER. =     6

 TRANSIENT OPTIMIZATION VALUE =     .44863-002 AT NODE      6
*** LOAD STEP     1   ITER      7  COMPLETED.   TIME=    14.0000       TIME INC=    2.00000     NEW TRIANG MATRIX  CUM. ITER. =     7

 TRANSIENT OPTIMIZATION VALUE =     .44859-002 AT NODE      6
*** LOAD STEP     1   ITER      8  COMPLETED.   TIME=    16.0000       TIME INC=    2.00000     NEW TRIANG MATRIX  CUM. ITER. =     8

 TRANSIENT OPTIMIZATION VALUE =     .44858-002 AT NODE      6
*** LOAD STEP     1   ITER      9  COMPLETED.   TIME=    18.0000       TIME INC=    2.00000     NEW TRIANG MATRIX  CUM. ITER. =     9
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    17.8631   1/ 9/84 CP=    1512.073

 ***** TEMPERATURE  SOLUTION *****      TIME =     20.000       LOAD STEP=    1  ITERATION=    10  CUM  ITER. =    10
     NODE    TEMP            NODE    TEMP            NODE    TEMP            NODE    TEMP            NODE    TEMP
        1   132.00             2   132.00             3   132.00             4   132.00             5   132.00
        6   70.227             7   70.028             8   70.028             9   70.028            10   70.028
       11   70.028

  MAXIMUM TEMPERATURE=   132.00      AT NODE      5
  MINIMUM TEMPERATURE=   70.028      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    20.0000       LOAD STEP=    1   ITER. =    10   CUM. ITER. =    10

 TRANSIENT OPTIMIZATION VALUE =     .44852-002 AT NODE      6
*** LOAD STEP     1   ITER     10  COMPLETED.   TIME=    20.0000       TIME INC=    2.00000     NEW TRIANG MATRIX  CUM. ITER. =    10

 TRANSIENT OPTIMIZATION VALUE =     .44818-002 AT NODE      6
*** LOAD STEP     1   ITER     11  COMPLETED.   TIME=    22.0000       TIME INC=    2.00000     NEW TRIANG MATRIX  CUM. ITER. =    11

 TRANSIENT OPTIMIZATION VALUE =     .44787-002 AT NODE      6
*** LOAD STEP     1   ITER     12  COMPLETED.   TIME=    24.0000       TIME INC=    2.00000     NEW TRIANG MATRIX  CUM. ITER. =    12

 TRANSIENT OPTIMIZATION VALUE =     .44761-002 AT NODE      6
*** LOAD STEP     1   ITER     13  COMPLETED.   TIME=    26.0000       TIME INC=    2.00000     NEW TRIANG MATRIX  CUM. ITER. =    13

 TRANSIENT OPTIMIZATION VALUE =     .44740-002 AT NODE      6
*** LOAD STEP     1   ITER     14  COMPLETED.   TIME=    28.0000       TIME INC=    2.00000     NEW TRIANG MATRIX  CUM. ITER. =    14
```

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36

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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 17:9:14 1/ 9/86 CP= 1886.185

***** TEMPERATURE SOLUTION ***** TIME = 30.000 LOAD STEP= 1 ITERATION= 15 CUM. ITER.= 15

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	163.00	2	163.00	3	163.00	4	163.00	5	163.00
6	70.506	7	70.066	8	70.067	9	70.067	10	70.067
11	70.067								

MAXIMUM TEMPERATURE= 163.00 AT NODE 5
MINIMUM TEMPERATURE= 70.066 AT NODE 7

***** ELEMENT HEAT FLOW RATES ***** TIME = 30.0000 LOAD STEP= 1 ITER.= 15 CUM. ITER.= 15

TRANSIENT OPTIMIZATION VALUE = .44723-002 AT NODE 5
*** LOAD STEP 1 ITER 15 COMPLETED. TIME= 30.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 15

TRANSIENT OPTIMIZATION VALUE = .44710-002 AT NODE 5
*** LOAD STEP 1 ITER 16 COMPLETED. TIME= 32.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 16

TRANSIENT OPTIMIZATION VALUE = .44702-002 AT NODE 5
*** LOAD STEP 1 ITER 17 COMPLETED. TIME= 34.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 17

TRANSIENT OPTIMIZATION VALUE = .44699-002 AT NODE 5
*** LOAD STEP 1 ITER 18 COMPLETED. TIME= 36.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 18

TRANSIENT OPTIMIZATION VALUE = .44700-002 AT NODE 5
*** LOAD STEP 1 ITER 19 COMPLETED. TIME= 38.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 19

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37

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 17:9:47 1/ 9/86 CP= 1941.820

***** TEMPERATURE SOLUTION ***** TIME = 40.000 LOAD STEP= 1 ITERATION= 20 CUM. ITER.= 20

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	184.00	2	184.00	3	184.00	4	184.00	5	184.00
6	70.971	7	70.125	8	70.127	9	70.127	10	70.127
11	70.127								

MAXIMUM TEMPERATURE= 184.00 AT NODE 5
MINIMUM TEMPERATURE= 70.125 AT NODE 7

***** ELEMENT HEAT FLOW RATES ***** TIME = 40.0000 LOAD STEP= 1 ITER.= 20 CUM. ITER.= 20

TRANSIENT OPTIMIZATION VALUE = .44706-002 AT NODE 5
*** LOAD STEP 1 ITER 20 COMPLETED. TIME= 40.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 20

TRANSIENT OPTIMIZATION VALUE = .44717-002 AT NODE 5
*** LOAD STEP 1 ITER 21 COMPLETED. TIME= 42.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 21

TRANSIENT OPTIMIZATION VALUE = .44733-002 AT NODE 5
*** LOAD STEP 1 ITER 22 COMPLETED. TIME= 44.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 22

TRANSIENT OPTIMIZATION VALUE = .44753-002 AT NODE 5
*** LOAD STEP 1 ITER 23 COMPLETED. TIME= 46.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 23

TRANSIENT OPTIMIZATION VALUE = .44778-002 AT NODE 5
*** LOAD STEP 1 ITER 24 COMPLETED. TIME= 48.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 24

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1308

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         ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN 1,1983
    SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-6855

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    .7.9972   1/ 9/86 CP=    1995.096

 ***** TEMPERATURE  SOLUTION *****      TIME =     50.000       LOAD STEP=    1  ITERATION=    25  CUM. ITER.=    25
     NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP
        1   225.00               2   225.00               3   225.00               4   225.00               5   225.00
        6   71.406               7   70.208               8   70.208               9   70.208              10   70.208
       11   70.208

  MAXIMUM TEMPERATURE=  225.00      AT NODE      5
  MINIMUM TEMPERATURE=  70.208      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    50.0000        LOAD STEP=    1   ITER.=    25   CUM. ITER.=    25

 TRANSIENT OPTIMIZATION VALUE =    .44809-002 AT NODE      5
*** LOAD STEP     1   ITER     25  COMPLETED.  TIME=    50.0000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    25

 TRANSIENT OPTIMIZATION VALUE =    .44844-002 AT NODE      5
*** LOAD STEP     1   ITER     26  COMPLETED.  TIME=    52.0000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    26

 TRANSIENT OPTIMIZATION VALUE =    .44884-002 AT NODE      5
*** LOAD STEP     1   ITER     27  COMPLETED.  TIME=    54.0000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    27

 TRANSIENT OPTIMIZATION VALUE =    .44929-002 AT NODE      5
*** LOAD STEP     1   ITER     28  COMPLETED.  TIME=    56.0000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    28

 TRANSIENT OPTIMIZATION VALUE =    .44979-002 AT NODE      5
*** LOAD STEP     1   ITER     29  COMPLETED.  TIME=    58.0000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    29
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                   18.0353   1/ 9/86 CP=    2131.545

 ***** TEMPERATURE  SOLUTION *****      TIME =     60.000       LOAD STEP=    1  ITERATION=    30  CUM. ITER.=    30
     NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP
        1   256.00               2   256.00               3   256.00               4   256.00               5   256.00
        6   72.023               7   70.318               8   70.319               9   70.318              10   70.318
       11   70.319

  MAXIMUM TEMPERATURE=  256.00      AT NODE      5
  MINIMUM TEMPERATURE=  70.318      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    60.0000        LOAD STEP=    1   ITER.=    30   CUM. ITER.=    30

 TRANSIENT OPTIMIZATION VALUE =    .45034-002 AT NODE      5
*** LOAD STEP     1   ITER     30  COMPLETED.  TIME=    60.0000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    30

 TRANSIENT OPTIMIZATION VALUE =    .45084-002 AT NODE      5
*** LOAD STEP     1   ITER     31  COMPLETED.  TIME=    62.0000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    31

 TRANSIENT OPTIMIZATION VALUE =    .45159-002 AT NODE      5
*** LOAD STEP     1   ITER     32  COMPLETED.  TIME=    64.0000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    32

 TRANSIENT OPTIMIZATION VALUE =    .45230-002 AT NODE      5
*** LOAD STEP     1   ITER     33  COMPLETED.  TIME=    66.0000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    33

 TRANSIENT OPTIMIZATION VALUE =    .45305-002 AT NODE      5
*** LOAD STEP     1   ITER     34  COMPLETED.  TIME=    68.0000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    34
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40

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SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8855

DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.0878 1/ 9/86 CP= 2320.866

***** TEMPERATURE SOLUTION ***** TIME = 70.000 LOAD STEP= 1 ITERATION= 35 CUM. ITER.= 35

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	287.00	2	287.00	3	287.00	4	287.00	5	287.00
6	72.763	7	70.460	8	70.460	9	70.460	10	70.460
11	70.460								

MAXIMUM TEMPERATURE= 287.00 AT NODE 5
MINIMUM TEMPERATURE= 70.460 AT NODE 8

***** ELEMENT HEAT FLOW RATES ***** TIME = 70.0000 LOAD STEP= 1 ITER.= 35 CUM. ITER.= 35

TRANSIENT OPTIMIZATION VALUE = .45386-002 AT NODE 6
*** LOAD STEP 1 ITER 35 COMPLETED. TIME= 70.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 35

TRANSIENT OPTIMIZATION VALUE = .45472-002 AT NODE 6
*** LOAD STEP 1 ITER 36 COMPLETED. TIME= 72.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 36

TRANSIENT OPTIMIZATION VALUE = .45563-002 AT NODE 6
*** LOAD STEP 1 ITER 37 COMPLETED. TIME= 74.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 37

TRANSIENT OPTIMIZATION VALUE = .45660-002 AT NODE 6
*** LOAD STEP 1 ITER 38 COMPLETED. TIME= 76.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 38

TRANSIENT OPTIMIZATION VALUE = .45762-002 AT NODE 6
*** LOAD STEP 1 ITER 39 COMPLETED. TIME= 78.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 39

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41

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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.1687 1/ 9/86 CP= 2618.787

***** TEMPERATURE SOLUTION ***** TIME = 80.000 LOAD STEP= 1 ITERATION= 40 CUM. ITER.= 40

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	318.00	2	318.00	3	318.00	4	318.00	5	318.00
6	73.595	7	70.638	8	70.638	9	70.638	10	70.638
11	70.638								

MAXIMUM TEMPERATURE= 318.00 AT NODE 5
MINIMUM TEMPERATURE= 70.638 AT NODE 8

***** ELEMENT HEAT FLOW RATES ***** TIME = 80.0000 LOAD STEP= 1 ITER.= 40 CUM. ITER.= 40

TRANSIENT OPTIMIZATION VALUE = .45870-002 AT NODE 6
*** LOAD STEP 1 ITER 40 COMPLETED. TIME= 80.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 40

TRANSIENT OPTIMIZATION VALUE = .45962-002 AT NODE 6
*** LOAD STEP 1 ITER 41 COMPLETED. TIME= 82.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 41

TRANSIENT OPTIMIZATION VALUE = .46101-002 AT NODE 6
*** LOAD STEP 1 ITER 42 COMPLETED. TIME= 84.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 42

TRANSIENT OPTIMIZATION VALUE = .46224-002 AT NODE 6
*** LOAD STEP 1 ITER 43 COMPLETED. TIME= 86.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 43

TRANSIENT OPTIMIZATION VALUE = .46354-002 AT NODE 6
*** LOAD STEP 1 ITER 44 COMPLETED. TIME= 88.0000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 44

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    15.2050   1/ 8/86 CP=    2742.342

 ***** TEMPERATURE  SOLUTION *****      TIME =     50.000       LOAD STEP=    1  ITERATION=    45  CUM. ITER.=    45
     NODE    TEMP              NODE    TEMP              NODE    TEMP              NODE    TEMP              NODE    TEMP
        1   349.00               2   349.00               3   349.00               4   349.00               5   349.00
        6   74.554               7   70.858               8   70.851               9   70.851              10   70.851
       11   70.851

  MAXIMUM TEMPERATURE=  349.00      AT NODE      5
  MINIMUM TEMPERATURE=  70.851      AT NODE      8

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    50.0000       LOAD STEP=     1   ITER.=    45   CUM. ITER.=    45

 TRANSIENT OPTIMIZATION VALUE =    .48489-002 AT NODE      6
*** LOAD STEP     1   ITER     45  COMPLETED.  TIME=    50.0000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    45

 TRANSIENT OPTIMIZATION VALUE =    .48283-002 AT NODE      6
*** LOAD STEP     1   ITER     46  COMPLETED.  TIME=    92.0000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    46

 TRANSIENT OPTIMIZATION VALUE =    .49148-002 AT NODE      6
*** LOAD STEP     1   ITER     47  COMPLETED.  TIME=    94.0000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    47

 TRANSIENT OPTIMIZATION VALUE =    .49819-002 AT NODE      6
*** LOAD STEP     1   ITER     48  COMPLETED.  TIME=    96.0000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    48

 TRANSIENT OPTIMIZATION VALUE =    .49855-002 AT NODE      6
*** LOAD STEP     1   ITER     49  COMPLETED.  TIME=    98.0000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    49
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    15.3289   1/ 8/86 CP=    3182.159

 ***** TEMPERATURE  SOLUTION *****      TIME =    100.00       LOAD STEP=    1  ITERATION=    50  CUM. ITER.=    50
     NODE    TEMP              NODE    TEMP              NODE    TEMP              NODE    TEMP              NODE    TEMP
        1   380.00               2   380.00               3   380.00               4   380.00               5   380.00
        6   75.633               7   71.119               8   71.112               9   71.112              10   71.112
       11   71.112

  MAXIMUM TEMPERATURE=  380.00      AT NODE      5
  MINIMUM TEMPERATURE=  71.112      AT NODE      9

 ***** ELEMEKT HEAT FLOW RATES *****  TIME =    100.000       LOAD STEP=     1   ITER.=    50   CUM. ITER.=    50

 TRANSIENT OPTIMIZATION VALUE =    .50250-002 AT NODE      6
*** LOAD STEP     1   ITER     50  COMPLETED.  TIME=   100.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    50

 TRANSIENT OPTIMIZATION VALUE =    .50535-002 AT NODE      6
*** LOAD STEP     1   ITER     51  COMPLETED.  TIME=   102.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    51

 TRANSIENT OPTIMIZATION VALUE =    .50820-002 AT NODE      6
*** LOAD STEP     1   ITER     52  COMPLETED.  TIME=   104.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    52

 TRANSIENT OPTIMIZATION VALUE =    .51108-002 AT NODE      6
*** LOAD STEP     1   ITER     53  COMPLETED.  TIME=   106.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    53

 TRANSIENT OPTIMIZATION VALUE =    .51403-002 AT NODE      6
*** LOAD STEP     1   ITER     54  COMPLETED.  TIME=   108.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=    54
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 SWANSON ANALYSIS SYSTEMS, INC.        HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8855

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                  18.4550   1/ 9/86 CP=    3642.641

 ***** TEMPERATURE  SOLUTION *****      TIME =     110.00       LOAD STEP=    1  ITERATION=    55  CUM. ITER. =    55
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1   411.00             2   411.00             3   411.00             4   411.00             5   411.00
        6   78.838             7   71.433             8   71.422             9   71.421            10   71.421
       11   71.421

  MAXIMUM TEMPERATURE=   411.00      AT NODE      5
  MINIMUM TEMPERATURE=   71.421      AT NODE      9


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    110.000        LOAD STEP=    1   ITER. =    55   CUM. ITER. =    55

 TRANSIENT OPTIMIZATION VALUE =    .51703-002 AT NODE      6
*** LOAD STEP     1   ITER     55  COMPLETED.   TIME=    110.000       TIME INC=    2.00000      NEW TRIANG MATRIX   CUM. ITER. =    55

 TRANSIENT OPTIMIZATION VALUE =    .52008-002 AT NODE      6
*** LOAD STEP     1   ITER     56  COMPLETED.   TIME=    112.000       TIME INC=    2.00000      NEW TRIANG MATRIX   CUM. ITER. =    56

 TRANSIENT OPTIMIZATION VALUE =    .52318-002 AT NODE      6
*** LOAD STEP     1   ITER     57  COMPLETED.   TIME=    114.000       TIME INC=    2.00000      NEW TRIANG MATRIX   CUM. ITER. =    57

 TRANSIENT OPTIMIZATION VALUE =    .52634-002 AT NODE      5
*** LOAD STEP     1   ITER     58  COMPLETED.   TIME=    116.000       TIME INC=    2.00000      NEW TRIANG MATRIX   CUM. ITER. =    58

 TRANSIENT OPTIMIZATION VALUE =    .52956-002 AT NODE      6
*** LOAD STEP     1   ITER     59  COMPLETED.   TIME=    118.000       TIME INC=    2.00000      NEW TRIANG MATRIX   CUM. ITER. =    59
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                  18.5017   1/ 9/86 CP=    3610.574

 ***** TEMPERATURE  SOLUTION *****      TIME =     120.00       LOAD STEP=    1  ITERATION=    80  CUM. ITER. =    80
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1   442.00             2   442.00             3   442.00             4   442.00             5   442.00
        6   78.172             7   71.804             8   71.787             9   71.787            10   71.787
       11   71.787

  MAXIMUM TEMPERATURE=   442.00      AT NODE      5
  MINIMUM TEMPERATURE=   71.787      AT NODE     10


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    120.000        LOAD STEP=    1   ITER. =    80   CUM. ITER. =    80

 TRANSIENT OPTIMIZATION VALUE =    .53284-002 AT NODE      6
*** LOAD STEP     1   ITER     80  COMPLETED.   TIME=    120.000       TIME INC=    2.00000      NEW TRIANG MATRIX   CUM. ITER. =    80

 TRANSIENT OPTIMIZATION VALUE =    .53618-002 AT NODE      6
*** LOAD STEP     1   ITER     81  COMPLETED.   TIME=    122.000       TIME INC=    2.00000      NEW TRIANG MATRIX   CUM. ITER. =    81

 TRANSIENT OPTIMIZATION VALUE =    .53957-002 AT NODE      6
*** LOAD STEP     1   ITER     82  COMPLETED.   TIME=    124.000       TIME INC=    2.00000      NEW TRIANG MATRIX   CUM. ITER. =    82

 TRANSIENT OPTIMIZATION VALUE =    .54302-002 AT NODE      6
*** LOAD STEP     1   ITER     83  COMPLETED.   TIME=    126.000       TIME INC=    2.00000      NEW TRIANG MATRIX   CUM. ITER. =    83

 TRANSIENT OPTIMIZATION VALUE =    .54653-002 AT NODE      6
*** LOAD STEP     1   ITER     84  COMPLETED.   TIME=    128.000       TIME INC=    2.00000      NEW TRIANG MATRIX   CUM. ITER. =    84
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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.5369 1/ 9/86 CP= 3937.639

***** TEMPERATURE SOLUTION ***** TIME = 130.00 LOAD STEP= 1 ITERATION= 65 CUM. ITER.= 65

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	473.00	2	473.00	3	473.00	4	473.00	5	473.00
6	79.641	7	72.237	8	72.214	9	72.214	10	72.214
11	72.214								

MAXIMUM TEMPERATURE= 473.00 AT NODE 5
MINIMUM TEMPERATURE= 72.214 AT NODE 10

***** ELEMENT HEAT FLOW RATES ***** TIME = 130.000 LOAD STEP= 1 ITER.= 65 CUM. ITER.= 65

TRANSIENT OPTIMIZATION VALUE = .55010-002 AT NODE 6
*** LOAD STEP 1 ITER 65 COMPLETED. TIME= 130.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 65

TRANSIENT OPTIMIZATION VALUE = .55373-002 AT NODE 6
*** LOAD STEP 1 ITER 66 COMPLETED. TIME= 132.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 66

TRANSIENT OPTIMIZATION VALUE = .55742-002 AT NODE 6
*** LOAD STEP 1 ITER 67 COMPLETED. TIME= 134.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 67

TRANSIENT OPTIMIZATION VALUE = .56118-002 AT NODE 6
*** LOAD STEP 1 ITER 68 COMPLETED. TIME= 136.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 68

TRANSIENT OPTIMIZATION VALUE = .56497-002 AT NODE 6
*** LOAD STEP 1 ITER 69 COMPLETED. TIME= 138.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 69

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SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.5681 1/ 9/86 CP= 4049.892

***** TEMPERATURE SOLUTION ***** TIME = 140.00 LOAD STEP= 1 ITERATION= 70 CUM. ITER.= 70

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	504.00	2	504.00	3	504.00	4	504.00	5	504.00
6	81.249	7	72.739	8	72.710	9	72.710	10	72.710
11	72.710								

MAXIMUM TEMPERATURE= 504.00 AT NODE 5
MINIMUM TEMPERATURE= 72.710 AT NODE 10

***** ELEMENT HEAT FLOW RATES ***** TIME = 140.000 LOAD STEP= 1 ITER.= 70 CUM. ITER.= 70

TRANSIENT OPTIMIZATION VALUE = .56684-002 AT NODE 6
*** LOAD STEP 1 ITER 70 COMPLETED. TIME= 140.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 70

TRANSIENT OPTIMIZATION VALUE = .57277-002 AT NODE 6
*** LOAD STEP 1 ITER 71 COMPLETED. TIME= 142.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 71

TRANSIENT OPTIMIZATION VALUE = .57676-002 AT NODE 6
*** LOAD STEP 1 ITER 72 COMPLETED. TIME= 144.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 72

TRANSIENT OPTIMIZATION VALUE = .58081-002 AT NODE 6
*** LOAD STEP 1 ITER 73 COMPLETED. TIME= 146.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 73

TRANSIENT OPTIMIZATION VALUE = .58492-002 AT NODE 6
*** LOAD STEP 1 ITER 74 COMPLETED. TIME= 148.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 74

3308

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 ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1      C      SARGENT & LUNDY  JAN 1,1983
 SWANSON ANALYSIS SYSTEMS, INC.        HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.5978   1/ 9/85 CP=    4156.668

 ***** TEMPERATURE  SOLUTION *****     TIME =    150.00      LOAD STEP=    1   ITERATION=    75  CUM. ITER.=    75
    NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP
       1    535.00           2    535.00           3    535.00           4    535.00           5    535.00
       6    82.989           7    73.318           8    73.281           9    73.281          10    73.281
      11    73.281

  MAXIMUM TEMPERATURE=  535.00      AT NODE      5
  MINIMUM TEMPERATURE=  73.281      AT NODE     11

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    150.000       LOAD STEP=    1   ITER.=    75  CUM. ITER.=    75

 TRANSIENT OPTIMIZATION VALUE =   .58909-002 AT NODE      6
*** LOAD STEP    1   ITER    74  COMPLETED.  TIME=    150.000       TIME INC=   2.00000     NEW TRIANG MATRIX  CUM. ITER.=    75

 TRANSIENT OPTIMIZATION VALUE =   .59333-002 AT NODE      6
*** LOAD STEP    1   ITER    76  COMPLETED.  TIME=    152.000       TIME INC=   2.00000     NEW TRIANG MATRIX  CUM. ITER.=    76

 TRANSIENT OPTIMIZATION VALUE =   .59763-002 AT NODE      6
*** LOAD STEP    1   ITER    77  COMPLETED.  TIME=    154.000       TIME INC=   2.00000     NEW TRIANG MATRIX  CUM. ITER.=    77

 TRANSIENT OPTIMIZATION VALUE =   .59089-002 AT NODE      6
*** LOAD STEP    1   ITER    78  COMPLETED.  TIME=    156.000       TIME INC=   2.00000     NEW TRIANG MATRIX  CUM. ITER.=    78

 TRANSIENT OPTIMIZATION VALUE =   .58957-002 AT NODE      6
*** LOAD STEP    1   ITER    79  COMPLETED.  TIME=    158.000       TIME INC=   2.00000     NEW TRIANG MATRIX  CUM. ITER.=    79
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 SWANSON ANALYSIS SYSTEMS, INC.        HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.6617   1/ 9/85 CP=    4386.311

 ***** TEMPERATURE  SOLUTION *****     TIME =    150.00      LOAD STEP=    1   ITERATION=    80  CUM. ITER.=    80
    NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP
       1    566.00           2    565.00           3    566.00           4    566.00           5    566.00
       6    84.887           7    73.979           8    73.835           9    73.835          10    73.835
      11    73.835

  MAXIMUM TEMPERATURE=  566.00      AT NODE      5
  MINIMUM TEMPERATURE=  73.835      AT NODE     11

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    150.000       LOAD STEP=    1   ITER.=    80  CUM. ITER.=    80

 TRANSIENT OPTIMIZATION VALUE =   .59177-002 AT NODE      6
*** LOAD STEP    1   ITER    80  COMPLETED.  TIME=    150.000       TIME INC=   2.00000     NEW TRIANG MATRIX  CUM. ITER.=    80

 TRANSIENT OPTIMIZATION VALUE =   .59516-002 AT NODE      6
*** LOAD STEP    1   ITER    81  COMPLETED.  TIME=    152.000       TIME INC=   2.00000     NEW TRIANG MATRIX  CUM. ITER.=    81

 TRANSIENT OPTIMIZATION VALUE =   .59801-002 AT NODE      6
*** LOAD STEP    1   ITER    82  COMPLETED.  TIME=    154.000       TIME INC=   2.00000     NEW TRIANG MATRIX  CUM. ITER.=    82

 TRANSIENT OPTIMIZATION VALUE =   .60303-002 AT NODE      6
*** LOAD STEP    1   ITER    83  COMPLETED.  TIME=    156.000       TIME INC=   2.00000     NEW TRIANG MATRIX  CUM. ITER.=    83

 TRANSIENT OPTIMIZATION VALUE =   .60716-002 AT NODE      6
*** LOAD STEP    1   ITER    84  COMPLETED.  TIME=    158.000       TIME INC=   2.00000     NEW TRIANG MATRIX  CUM. ITER.=    84
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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.6897 1/ 9/85 CP= 4487.542

***** TEMPERATURE SOLUTION ***** TIME = 170.00 LOAD STEP= 1 ITERATION= 85 CUM. ITER.= 85

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	597.00	2	597.00	3	597.00	4	597.00	5	597.00
6	86.945	7	74.732	8	74.680	9	74.679	10	74.679
11	74.679								

MAXIMUM TEMPERATURE= 597.00 AT NODE 5
MINIMUM TEMPERATURE= 74.679 AT NODE 11

***** ELEMENT HEAT FLOW RATES ***** TIME = 170.000 LOAD STEP= 1 ITER.= 85 CUM. ITER.= 85

TRANSIENT OPTIMIZATION VALUE = .51136-002 AT NODE 6
*** LOAD STEP 1 ITER 85 COMPLETED. TIME= 170.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 85

TRANSIENT OPTIMIZATION VALUE = .51562-002 AT NODE 6
*** LOAD STEP 1 ITER 86 COMPLETED. TIME= 172.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 86

TRANSIENT OPTIMIZATION VALUE = .51995-002 AT NODE 6
*** LOAD STEP 1 ITER 87 COMPLETED. TIME= 174.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 87

TRANSIENT OPTIMIZATION VALUE = .52433-002 AT NODE 6
*** LOAD STEP 1 ITER 88 COMPLETED. TIME= 176.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 88

TRANSIENT OPTIMIZATION VALUE = .52877-002 AT NODE 6
*** LOAD STEP 1 ITER 89 COMPLETED. TIME= 178.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 89

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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.6892 1/ 9/85 CP= 4521.634

***** TEMPERATURE SOLUTION ***** TIME = 180.00 LOAD STEP= 1 ITERATION= 90 CUM. ITER.= 90

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	628.00	2	628.00	3	628.00	4	628.00	5	628.00
6	89.146	7	75.585	8	75.524	9	75.523	10	75.523
11	75.523								

MAXIMUM TEMPERATURE= 628.00 AT NODE 5
MINIMUM TEMPERATURE= 75.523 AT NODE 11

***** ELEMENT HEAT FLOW RATES ***** TIME = 180.000 LOAD STEP= 1 ITER.= 90 CUM. ITER.= 90

TRANSIENT OPTIMIZATION VALUE = .53328-002 AT NODE 6
*** LOAD STEP 1 ITER 90 COMPLETED. TIME= 180.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 90

TRANSIENT OPTIMIZATION VALUE = .53784-002 AT NODE 6
*** LOAD STEP 1 ITER 91 COMPLETED. TIME= 182.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 91

TRANSIENT OPTIMIZATION VALUE = .54246-002 AT NODE 6
*** LOAD STEP 1 ITER 92 COMPLETED. TIME= 184.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 92

TRANSIENT OPTIMIZATION VALUE = .54714-002 AT NODE 6
*** LOAD STEP 1 ITER 93 COMPLETED. TIME= 186.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 93

TRANSIENT OPTIMIZATION VALUE = .55188-002 AT NODE 6
*** LOAD STEP 1 ITER 94 COMPLETED. TIME= 188.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 94

3308

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52

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.7187   1/ 8/86 CP=    4584.573

 ***** TEMPERATURE  SOLUTION *****      TIME =     180.00       LOAD STEP=    1  ITERATION=    95  CUM. ITER. =    95
    NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
       1   659.00             2   659.00             3   659.00             4   659.00             5   659.00
       6   91.507             7   76.546             8   76.477             9   76.476            10   76.476
      11   76.476

  MAXIMUM TEMPERATURE=   659.00      AT NODE      5
  MINIMUM TEMPERATURE=   76.476      AT NODE     11


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    180.000        LOAD STEP=    1   ITER. =    95   CUM. ITER. =    95

 TRANSIENT OPTIMIZATION VALUE =    .65668-002 AT NODE      6
*** LOAD STEP     1   ITER     95  COMPLETED.  TIME=    180.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =    95

 TRANSIENT OPTIMIZATION VALUE =    .63154-002 AT NODE      6
*** LOAD STEP     1   ITER     96  COMPLETED.  TIME=    182.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =    96

 TRANSIENT OPTIMIZATION VALUE =    .65646-002 AT NODE      6
*** LOAD STEP     1   ITER     97  COMPLETED.  TIME=    184.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =    97

 TRANSIENT OPTIMIZATION VALUE =    .67144-002 AT NODE      6
*** LOAD STEP     1   ITER     98  COMPLETED.  TIME=    186.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =    98

 TRANSIENT OPTIMIZATION VALUE =    .67548-002 AT NODE      6
*** LOAD STEP     1   ITER     99  COMPLETED.  TIME=    188.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =    99
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53

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.7304   1/ 8/86 CP=    4835.983

 ***** TEMPERATURE  SOLUTION *****      TIME =     200.00       LOAD STEP=    1  ITERATION=   100  CUM. ITER. =   100
    NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
       1   890.00             2   890.00             3   890.00             4   890.00             5   890.00
       6   94.033             7   77.624             8   77.547             9   77.546            10   77.546
      11   77.546

  MAXIMUM TEMPERATURE=   890.00      AT NODE      5
  MINIMUM TEMPERATURE=   77.546      AT NODE     11


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    200.000        LOAD STEP=    1   ITER. =   100   CUM. ITER. =   100

 TRANSIENT OPTIMIZATION VALUE =    .68152-002 AT NODE      6
*** LOAD STEP     1   ITER    100  COMPLETED.  TIME=    200.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =   100

 TRANSIENT OPTIMIZATION VALUE =    .67304-002 AT NODE      6
*** LOAD STEP     1   ITER    101  COMPLETED.  TIME=    202.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =   101

 TRANSIENT OPTIMIZATION VALUE =    .67213-002 AT NODE      6
*** LOAD STEP     1   ITER    102  COMPLETED.  TIME=    204.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =   102

 TRANSIENT OPTIMIZATION VALUE =    .67546-002 AT NODE      6
*** LOAD STEP     1   ITER    103  COMPLETED.  TIME=    206.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =   103

 TRANSIENT OPTIMIZATION VALUE =    .67990-002 AT NODE      6
*** LOAD STEP     1   ITER    104  COMPLETED.  TIME=    208.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =   104
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56

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.7828   1/ 9/86 CP=    4822.627

 ***** TEMPERATURE  SOLUTION *****      TIME =     230.00       LOAD STEP=    1  ITERATION=   115  CUM. ITER. =  115
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1   783.00             2   783.00             3   783.00             4   783.00             5   783.00
        6   102.64             7   81.863             8   81.567             9   81.565            10   81.565
       11   81.565

  MAXIMUM TEMPERATURE=   783.00      AT NODE      5
  MINIMUM TEMPERATURE=   81.565      AT NODE     11


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    230.000        LOAD STEP=    1   ITER. =   115   CUM. ITER. =  115

 TRANSIENT OPTIMIZATION VALUE =    .73852-002 AT NODE      5
 *** LOAD STEP     1   ITER    115  COMPLETED.  TIME=    230.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =  115

 TRANSIENT OPTIMIZATION VALUE =    .74425-002 AT NODE      5
 *** LOAD STEP     1   ITER    116  COMPLETED.  TIME=    232.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =  116

 TRANSIENT OPTIMIZATION VALUE =    .75005-002 AT NODE      5
 *** LOAD STEP     1   ITER    117  COMPLETED.  TIME=    234.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =  117

 TRANSIENT OPTIMIZATION VALUE =    .75590-002 AT NODE      5
 *** LOAD STEP     1   ITER    118  COMPLETED.  TIME=    236.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =  118

 TRANSIENT OPTIMIZATION VALUE =    .76182-002 AT NODE      5
 *** LOAD STEP     1   ITER    119  COMPLETED.  TIME=    238.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =  119
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57

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.8067   1/ 9/86 CP=    4906.883

 ***** TEMPERATURE  SOLUTION *****      TIME =     240.00       LOAD STEP=    1  ITERATION=   120  CUM. ITER. =  120
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1   814.00             2   814.00             3   814.00             4   814.00             5   814.00
        6   105.87             7   83.314             8   83.214             9   83.211            10   83.211
       11   83.211

  MAXIMUM TEMPERATURE=   814.00      AT NODE      5
  MINIMUM TEMPERATURE=   83.211      AT NODE     11


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    240.000        LOAD STEP=    1   ITER. =   120   CUM. ITER. =  120

 TRANSIENT OPTIMIZATION VALUE =    .76781-002 AT NODE      5
 *** LOAD STEP     1   ITER    120  COMPLETED.  TIME=    240.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =  120

 TRANSIENT OPTIMIZATION VALUE =    .77386-002 AT NODE      5
 *** LOAD STEP     1   ITER    121  COMPLETED.  TIME=    242.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =  121

 TRANSIENT OPTIMIZATION VALUE =    .77997-002 AT NODE      5
 *** LOAD STEP     1   ITER    122  COMPLETED.  TIME=    244.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =  122

 TRANSIENT OPTIMIZATION VALUE =    .78614-002 AT NODE      5
 *** LOAD STEP     1   ITER    123  COMPLETED.  TIME=    246.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =  123

 TRANSIENT OPTIMIZATION VALUE =    .79238-002 AT NODE      5
 *** LOAD STEP     1   ITER    124  COMPLETED.  TIME=    248.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER. =  124
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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.7597 1/ 9/86 CP= 4739.469

***** TEMPERATURE SOLUTION ***** TIME = 210.00 LOAD STEP= 1 ITERATION= 105 CUM. ITER.= 105

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	721.00	2	721.00	3	721.00	4	721.00	5	721.00
6	96.728	7	78.830	8	78.745	9	78.743	10	78.743
11	78.743								

MAXIMUM TEMPERATURE= 721.00 AT NODE 5
MINIMUM TEMPERATURE= 78.743 AT NODE 11

***** ELEMENT HEAT FLOW RATES ***** TIME = 210.000 LOAD STEP= 1 ITER.= 105 CUM. ITER.= 105

TRANSIENT OPTIMIZATION VALUE = .68477-002 AT NODE 6
*** LOAD STEP 1 ITER 105 COMPLETED. TIME= 210.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 105

TRANSIENT OPTIMIZATION VALUE = .68881-002 AT NODE 6
*** LOAD STEP 1 ITER 106 COMPLETED. TIME= 212.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 106

TRANSIENT OPTIMIZATION VALUE = .69495-002 AT NODE 6
*** LOAD STEP 1 ITER 107 COMPLETED. TIME= 214.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 107

TRANSIENT OPTIMIZATION VALUE = .70017-002 AT NODE 6
*** LOAD STEP 1 ITER 108 COMPLETED. TIME= 216.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 108

TRANSIENT OPTIMIZATION VALUE = .70548-002 AT NODE 6
*** LOAD STEP 1 ITER 109 COMPLETED. TIME= 218.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 109

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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.7717 1/ 9/86 CP= 4762.778

***** TEMPERATURE SOLUTION ***** TIME = 220.00 LOAD STEP= 1 ITERATION= 110 CUM. ITER.= 110

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	752.00	2	752.00	3	752.00	4	752.00	5	752.00
6	99.595	7	80.172	8	80.081	9	80.079	10	80.079
11	80.079								

MAXIMUM TEMPERATURE= 752.00 AT NODE 5
MINIMUM TEMPERATURE= 80.079 AT NODE 11

***** ELEMENT HEAT FLOW RATES ***** TIME = 220.000 LOAD STEP= 1 ITER.= 110 CUM. ITER.= 110

TRANSIENT OPTIMIZATION VALUE = .71081-002 AT NODE 6
*** LOAD STEP 1 ITER 110 COMPLETED. TIME= 220.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 110

TRANSIENT OPTIMIZATION VALUE = .71623-002 AT NODE 6
*** LOAD STEP 1 ITER 111 COMPLETED. TIME= 222.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 111

TRANSIENT OPTIMIZATION VALUE = .72171-002 AT NODE 6
*** LOAD STEP 1 ITER 112 COMPLETED. TIME= 224.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 112

TRANSIENT OPTIMIZATION VALUE = .72725-002 AT NODE 6
*** LOAD STEP 1 ITER 113 COMPLETED. TIME= 226.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 113

TRANSIENT OPTIMIZATION VALUE = .73285-002 AT NODE 6
*** LOAD STEP 1 ITER 114 COMPLETED. TIME= 228.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 114

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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 16.8339 1/ 9/86 CP= 5005.853

***** TEMPERATURE SOLUTION ***** TIME = 250.00 LOAD STEP= 1 ITERATION= 125 CUM. ITER.= 125

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	845.00	2	845.00	3	845.00	4	845.00	5	845.00
6	109.33	7	85.135	8	85.037	9	85.030	10	85.030
11	85.030								

MAXIMUM TEMPERATURE= 845.00 AT NODE 5
MINIMUM TEMPERATURE= 85.030 AT NODE 11

***** ELEMENT HEAT FLOW RATES ***** TIME = 250.000 LOAD STEP= 1 ITER.= 125 CUM. ITER.= 125

TRANSIENT OPTIMIZATION VALUE = .79888-002 AT NODE 5
*** LOAD STEP 1 ITER 125 COMPLETED. TIME= 250.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 125

TRANSIENT OPTIMIZATION VALUE = .80505-002 AT NODE 5
*** LOAD STEP 1 ITER 126 COMPLETED. TIME= 252.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 126

TRANSIENT OPTIMIZATION VALUE = .81148-002 AT NODE 5
*** LOAD STEP 1 ITER 127 COMPLETED. TIME= 254.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 127

TRANSIENT OPTIMIZATION VALUE = .81797-002 AT NODE 5
*** LOAD STEP 1 ITER 128 COMPLETED. TIME= 256.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 128

TRANSIENT OPTIMIZATION VALUE = .82453-002 AT NODE 5
*** LOAD STEP 1 ITER 129 COMPLETED. TIME= 258.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 129

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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 16.8431 1/ 9/86 CP= 5040.003

***** TEMPERATURE SOLUTION ***** TIME = 260.00 LOAD STEP= 1 ITERATION= 130 CUM. ITER.= 130

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	876.00	2	876.00	3	876.00	4	876.00	5	876.00
6	112.83	7	87.140	8	87.039	9	87.036	10	87.036
11	87.036								

MAXIMUM TEMPERATURE= 876.00 AT NODE 5
MINIMUM TEMPERATURE= 87.036 AT NODE 11

***** ELEMENT HEAT FLOW RATES ***** TIME = 260.000 LOAD STEP= 1 ITER.= 130 CUM. ITER.= 130

TRANSIENT OPTIMIZATION VALUE = .83115-002 AT NODE 5
*** LOAD STEP 1 ITER 130 COMPLETED. TIME= 260.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 130

TRANSIENT OPTIMIZATION VALUE = .83783-002 AT NODE 5
*** LOAD STEP 1 ITER 131 COMPLETED. TIME= 262.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 131

TRANSIENT OPTIMIZATION VALUE = .84458-002 AT NODE 5
*** LOAD STEP 1 ITER 132 COMPLETED. TIME= 264.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 132

TRANSIENT OPTIMIZATION VALUE = .85139-002 AT NODE 5
*** LOAD STEP 1 ITER 133 COMPLETED. TIME= 266.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 133

TRANSIENT OPTIMIZATION VALUE = .85827-002 AT NODE 5
*** LOAD STEP 1 ITER 134 COMPLETED. TIME= 268.000 TIME INC= 2.00000 NEW TRIANG MATRIX CUM. ITER.= 134

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80

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.8497   1/ 9/86 CP=    9063.226

 ***** TEMPERATURE  SOLUTION *****      TIME =     270.00       LOAD STEP=    1  ITERATION=   135  CUM. ITER.=   135
    NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
       1   907.00             2   907.00             3   907.00             4   907.00             5   907.00
       6   115.77             7   89.340             8   89.245             9   89.241            10   89.241
      11   89.241

  MAXIMUM TEMPERATURE=  907.00      AT NODE      5
  MINIMUM TEMPERATURE=  89.241      AT NODE     11


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    270.000        LOAD STEP=     1   ITER.=   135   CUM. ITER.=   135

 TRANSIENT OPTIMIZATION VALUE =    .86521-002 AT NODE       6
*** LOAD STEP     1   ITER   135  COMPLETED.  TIME=    270.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   135

 TRANSIENT OPTIMIZATION VALUE =    .87221-002 AT NODE       6
*** LOAD STEP     1   ITER   136  COMPLETED.  TIME=    272.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   136

 TRANSIENT OPTIMIZATION VALUE =    .87928-002 AT NODE       6
*** LOAD STEP     1   ITER   137  COMPLETED.  TIME=    274.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   137

 TRANSIENT OPTIMIZATION VALUE =    .88641-002 AT NODE       6
*** LOAD STEP     1   ITER   138  COMPLETED.  TIME=    276.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   138

 TRANSIENT OPTIMIZATION VALUE =    .89360-002 AT NODE       6
*** LOAD STEP     1   ITER   139  COMPLETED.  TIME=    278.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   139
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SARGENT & LUNDY

81

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  SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8855

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.8561   1/ 9/86 CP=    9068.317

 ***** TEMPERATURE  SOLUTION *****      TIME =     280.00       LOAD STEP=    1  ITERATION=   140  CUM. ITER.=   140
    NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
       1   938.00             2   938.00             3   938.00             4   938.00             5   938.00
       6   120.82             7   91.750             8   91.663             9   91.659            10   91.659
      11   91.659

  MAXIMUM TEMPERATURE=  938.00      AT NODE      5
  MINIMUM TEMPERATURE=  91.659      AT NODE     11


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    280.000        LOAD STEP=     1   ITER.=   140   CUM. ITER.=   140

 TRANSIENT OPTIMIZATION VALUE =    .90088-002 AT NODE       6
*** LOAD STEP     1   ITER   140  COMPLETED.  TIME=    280.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   140

 TRANSIENT OPTIMIZATION VALUE =    .91160-002 AT NODE       9
*** LOAD STEP     1   ITER   141  COMPLETED.  TIME=    282.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   141

 TRANSIENT OPTIMIZATION VALUE =    .92355-002 AT NODE       9
*** LOAD STEP     1   ITER   142  COMPLETED.  TIME=    284.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   142

 TRANSIENT OPTIMIZATION VALUE =    .93561-002 AT NODE       9
*** LOAD STEP     1   ITER   143  COMPLETED.  TIME=    286.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   143

 TRANSIENT OPTIMIZATION VALUE =    .94776-002 AT NODE       9
*** LOAD STEP     1   ITER   144  COMPLETED.  TIME=    288.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   144
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.8614   1/ 9/86 CP=    5105.842

 ***** TEMPERATURE  SOLUTION *****      TIME =     290.00       LOAD STEP=    1  ITERATION=   145  CUM. ITER.=   145
     NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP
        1   969.00               2   969.00               3   969.00               4   969.00               5   969.00
        6   125.10               7   94.384               8   94.310               9   94.305              10   94.305
       11   94.305

  MAXIMUM TEMPERATURE=  969.00      AT NODE      5
  MINIMUM TEMPERATURE=  94.305      AT NODE     11


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    290.000        LOAD STEP=     1   ITER.=   145   CUM. ITER.=   145

 TRANSIENT OPTIMIZATION VALUE =    .95000-002 AT NODE      9
*** LOAD STEP     1   ITER   145  COMPLETED.  TIME=    290.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   145

 TRANSIENT OPTIMIZATION VALUE =    .97235-002 AT NODE      9
*** LOAD STEP     1   ITER   146  COMPLETED.  TIME=    292.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   146

 TRANSIENT OPTIMIZATION VALUE =    .98478-002 AT NODE      9
*** LOAD STEP     1   ITER   147  COMPLETED.  TIME=    294.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   147

 TRANSIENT OPTIMIZATION VALUE =    .99734-002 AT NODE      9
*** LOAD STEP     1   ITER   148  COMPLETED.  TIME=    296.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   148

 TRANSIENT OPTIMIZATION VALUE =    .10100-001 AT NODE      9
*** LOAD STEP     1   ITER   149  COMPLETED.  TIME=    298.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   149
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.8664   1/ 9/86 CP=    5123.384

 ***** TEMPERATURE  SOLUTION *****      TIME =     300.00       LOAD STEP=    1  ITERATION=   150  CUM. ITER.=   150
     NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP
        1   1000.0               2   1000.0               3   1000.0               4   1000.0               5   1000.0
        6   129.62               7   97.256               8   97.199               9   97.195              10   97.195
       11   97.185

  MAXIMUM TEMPERATURE=  1000.0      AT NODE      5
  MINIMUM TEMPERATURE=  97.195      AT NODE     11


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    300.000        LOAD STEP=     1   ITER.=   150   CUM. ITER.=   150

 TRANSIENT OPTIMIZATION VALUE =    .10227-001 AT NODE      9
*** LOAD STEP     1   ITER   150  COMPLETED.  TIME=    300.000       TIME INC=    2.00000      NEW TRIANG MATRIX  CUM. ITER.=   150

*** LOAD STEP    2  OPTIONS SPECIFICATIONS

NITTER=      50  NPRINT=       5  NPOST=       1

ALL PRINT CONTROLS RESET TO       5

ALL POST DATA FILE CONTROLS RESET TO       1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  600.00

ACEL=     .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=    .00000        .00000        .00000

DOMEGA=   .00000        .00000        .00000

CGLOC=    .00000        .00000        .00000

CGOMGA=   .00000        .00000        .00000

DCGOME=   .00000        .00000        .00000

KTEMP=       0       0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=  1.0000
TRANSIENT OPTIMIZATION CRITERIA= 10.0000
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64

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 TEMPERATURE LIMIT=    00000
 KEY TO TERMINATE RUN IF NO CONVERGENCE=     0
 ABORT LEVEL KEY=  0

 HARMONIC LOAD PARAMETERS  MODE=     0    ISYM=     1

 NUMBER OF STRESS PASS CALCULATIONS=      0

 STRAIN ENERGY KEY= 0

 REACTION FORCE KEY= 0

 UNIFORM TEMPERATURE=    70.000   (TREF=       .000)

 SEISMIC COMBINATION TYPE (MCOMB)=    0

 DAMPING RATIO =          .0000

 BOUNDARY CONDITION PRINT KEY=  0
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65

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.6869   1/ 9/83 CP=    5125.369

 LOAD STEP NUMBER=     2

          *** LOAD OPTIONS SUMMARY ***

TIME   =   800.00       (TIME AT END OF LOAD STEP)
NITTER=     50         (NUMBER OF ITERATIONS)
TUNIF  =   70.0000     (UNIFORM TEMPERATURE)    (TREF=       .0000)
KBC    =    0          (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS.
                         LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES.)

NPRINT=      5         (OVERALL PRINT FREQUENCY)
NPOST  =     1         (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
  FREQ    NSTRT   NSTOP    NINC
     5        1   99900       1

 ELEMENT PRINT AND POST FREQUENCIES
  TYPE   STIFF   STRESS  FORCE        STRESS   STRESS   FORCE
           NO.    PRINT  PRINT         POST     LEVEL    POST
     1      33       5      5            1        3        1
     2      31       5      5            1        3        1


          ***** SPECIFIED TEMPERATURES *****

   NODE       TEMP

     1      1300.00
     2      1300.00
     3      1300.00
     4      1300.00
     5      1300.00


***** LOAD SUMMARY -       5 TEMPERATURES       0 HEAT FLOWS     0 CONVECTIONS      *****


 TRANSIENT OPTIMIZATION VALUE =    18.900      AT NODE       1
*** LOAD STEP     2   ITER      1  COMPLETED.  TIME=    306.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   161

 TRANSIENT OPTIMIZATION VALUE =    .25174-001 AT NODE       7
*** LOAD STEP     2   ITER      2  COMPLETED.  TIME=    312.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   162

 TRANSIENT OPTIMIZATION VALUE =    .28731-001 AT NODE       7
*** LOAD STEP     2   ITER      3  COMPLETED.  TIME=    318.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   163

 TRANSIENT OPTIMIZATION VALUE =    .30112-001 AT NODE       7
*** LOAD STEP     2   ITER      4  COMPLETED.  TIME=    324.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   164
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8008

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.8722   1/ 9/86 CP=    5144.930

 ***** TEMPERATURE  SOLUTION *****      TIME =     330.00       LOAD STEP=    2  ITERATION=     5  CUM. ITER.=   155
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1030.0                2   1030.0                3   1030.0                4   1030.0                5   1030.0
        6   143.82                7   106.62                8   106.62                9   106.62               10   106.62
       11   106.62

  MAXIMUM TEMPERATURE=  1030.0      AT NODE      5
  MINIMUM TEMPERATURE=  106.62      AT NODE     11

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    330.000        LOAD STEP=    2   ITER.=     5   CUM. ITER.=   155

 TRANSIENT OPTIMIZATION VALUE =    .30789-001 AT NODE      7
*** LOAD STEP    2   ITER     5  COMPLETED.  TIME=    330.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   155

 TRANSIENT OPTIMIZATION VALUE =    .31188-001 AT NODE      7
*** LOAD STEP    2   ITER     6  COMPLETED.  TIME=    336.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   156

 TRANSIENT OPTIMIZATION VALUE =    .31523-001 AT NODE      7
*** LOAD STEP    2   ITER     7  COMPLETED.  TIME=    342.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   157

 TRANSIENT OPTIMIZATION VALUE =    .31835-001 AT NODE      7
*** LOAD STEP    2   ITER     8  COMPLETED.  TIME=    348.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   158

 TRANSIENT OPTIMIZATION VALUE =    .32140-001 AT NODE      7
*** LOAD STEP    2   ITER     9  COMPLETED.  TIME=    354.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   159
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.8769   1/ 9/86 CP=    5181.284

 ***** TEMPERATURE  SOLUTION *****      TIME =     360.00       LOAD STEP=    2  ITERATION=    10  CUM. ITER.=   180
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1060.0                2   1060.0                3   1060.0                4   1060.0                5   1060.0
        6   158.60                7   116.76                8   116.81                9   116.81               10   116.81
       11   116.81

  MAXIMUM TEMPERATURE=  1060.0      AT NODE      5
  MINIMUM TEMPERATURE=  116.76      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    360.000        LOAD STEP=    2   ITER.=    10   CUM. ITER.=   180

 TRANSIENT OPTIMIZATION VALUE =    .32443-001 AT NODE      7
*** LOAD STEP    2   ITER    10  COMPLETED.  TIME=    360.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   180

 TRANSIENT OPTIMIZATION VALUE =    .32745-001 AT NODE      7
*** LOAD STEP    2   ITER    11  COMPLETED.  TIME=    366.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   181

 TRANSIENT OPTIMIZATION VALUE =    .33051-001 AT NODE      7
*** LOAD STEP    2   ITER    12  COMPLETED.  TIME=    372.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   182

 TRANSIENT OPTIMIZATION VALUE =    .33356-001 AT NODE      7
*** LOAD STEP    2   ITER    13  COMPLETED.  TIME=    378.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   183

 TRANSIENT OPTIMIZATION VALUE =    .33662-001 AT NODE      7
*** LOAD STEP    2   ITER    14  COMPLETED.  TIME=    384.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   184
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SARGENT & LUNDY

3108

68

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                  18.8808   1/ 9/86 CP=    8176.129

 ***** TEMPERATURE  SOLUTION *****      TIME =    390.00       LOAD STEP=   2  ITERATION=    15  CUM. ITER.=  185
    NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP
       1    1090.0           2    1050.0           3    1090.0           4    1090.0           5    1090.0
       6    174.00           7    127.72           8    127.81           9    127.81          10    127.81
      11    127.81

  MAXIMUM TEMPERATURE=  1090.0      AT NODE      5
  MINIMUM TEMPERATURE=  127.72      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    390.000        LOAD STEP=    2   ITER.=    15   CUM. ITER.=  185

 TRANSIENT OPTIMIZATION VALUE =    .34001-001 AT NODE     10
*** LOAD STEP    2   ITER    15  COMPLETED.  TIME=    390.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=  185

 TRANSIENT OPTIMIZATION VALUE =    .34353-001 AT NODE     10
*** LOAD STEP    2   ITER    16  COMPLETED.  TIME=    396.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=  186

 TRANSIENT OPTIMIZATION VALUE =    .34706-001 AT NODE     10
*** LOAD STEP    2   ITER    17  COMPLETED.  TIME=    402.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=  187

 TRANSIENT OPTIMIZATION VALUE =    .35060-001 AT NODE     10
*** LOAD STEP    2   ITER    18  COMPLETED.  TIME=    408.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=  188

 TRANSIENT OPTIMIZATION VALUE =    .35415-001 AT NODE     10
*** LOAD STEP    2   ITER    19  COMPLETED.  TIME=    414.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=  189
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69

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 SWANSON ANALYSIS SYSTEMS, INC         HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8855

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                  18.8850   1/ 9/86 CP=    8191.044

 ***** TEMPERATURE  SOLUTION *****      TIME =    420.00       LOAD STEP=   2  ITERATION=    20  CUM. ITER.=  170
    NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP
       1    1120.0           2    1120.0           3    1120.0           4    1120.0           5    1120.0
       6    180.04           7    139.63           8    139.67           9    139.67          10    139.67
      11    139.67

  MAXIMUM TEMPERATURE=  1120.0      AT NODE      5
  MINIMUM TEMPERATURE=  139.63      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    420.000        LOAD STEP=    2   ITER.=    20   CUM. ITER.=  170

 TRANSIENT OPTIMIZATION VALUE =    .35772-001 AT NODE     10
*** LOAD STEP    2   ITER    20  COMPLETED.  TIME=    420.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=  170

 TRANSIENT OPTIMIZATION VALUE =    .36130-001 AT NODE     10
*** LOAD STEP    2   ITER    21  COMPLETED.  TIME=    426.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=  171

 TRANSIENT OPTIMIZATION VALUE =    .36489-001 AT NODE     10
*** LOAD STEP    2   ITER    22  COMPLETED.  TIME=    432.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=  172

 TRANSIENT OPTIMIZATION VALUE =    .36849-001 AT NODE     11
*** LOAD STEP    2   ITER    23  COMPLETED.  TIME=    438.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=  173

 TRANSIENT OPTIMIZATION VALUE =    .37210-001 AT NODE     11
*** LOAD STEP    2   ITER    24  COMPLETED.  TIME=    444.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=  174
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.6892   1/ 9/86 CP=    5205.892

 ***** TEMPERATURE  SOLUTION *****      TIME =     450.00       LOAD STEP=    2  ITERATION=     25  CUM. ITER.=   175
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1   1150.0             2   1150.0             3   1150.0             4   1150.0             5   1150.0
        6   206.74             7   152.25             8   152.43             9   152.43            10   152.43
       11   152.43

  MAXIMUM TEMPERATURE=   1150.0      AT NODE      5
  MINIMUM TEMPERATURE=   152.25      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    450.000        LOAD STEP=    2   ITER.=     25   CUM. ITER.=   175

 TRANSIENT OPTIMIZATION VALUE =    .37572-001 AT NODE     11
*** LOAD STEP     2   ITER     25  COMPLETED.  TIME=    450.000       TIME INC=    5.00000      NEW TRIANG MATRIX  CUM. ITER.=   175

 TRANSIENT OPTIMIZATION VALUE =    .37935-001 AT NODE     11
*** LOAD STEP     2   ITER     26  COMPLETED.  TIME=    456.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   176

 TRANSIENT OPTIMIZATION VALUE =    .38298-001 AT NODE     11
*** LOAD STEP     2   ITER     27  COMPLETED.  TIME=    462.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   177

 TRANSIENT OPTIMIZATION VALUE =    .38663-001 AT NODE     11
*** LOAD STEP     2   ITER     28  COMPLETED.  TIME=    468.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   178

 TRANSIENT OPTIMIZATION VALUE =    .39029-001 AT NODE     11
*** LOAD STEP     2   ITER     29  COMPLETED.  TIME=    474.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   179
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.6928   1/ 9/86 CP=    5216.995

 ***** TEMPERATURE  SOLUTION *****      TIME =     480.00       LOAD STEP=    2  ITERATION=     30  CUM. ITER.=   180
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1   1180.0             2   1180.0             3   1180.0             4   1180.0             5   1180.0
        6   224.13             7   165.89             8   166.14             9   166.14            10   166.14
       11   166.14

  MAXIMUM TEMPERATURE=   1180.0      AT NODE      5
  MINIMUM TEMPERATURE=   165.89      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    480.000        LOAD STEP=    2   ITER.=     30   CUM. ITER.=   180

 TRANSIENT OPTIMIZATION VALUE =    .39395-001 AT NODE     11
*** LOAD STEP     2   ITER     30  COMPLETED.  TIME=    480.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   180

 TRANSIENT OPTIMIZATION VALUE =    .39762-001 AT NODE     11
*** LOAD STEP     2   ITER     31  COMPLETED.  TIME=    486.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   181

 TRANSIENT OPTIMIZATION VALUE =    .40130-001 AT NODE     11
*** LOAD STEP     2   ITER     32  COMPLETED.  TIME=    492.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   182

 TRANSIENT OPTIMIZATION VALUE =    .40498-001 AT NODE     11
*** LOAD STEP     2   ITER     33  COMPLETED.  TIME=    498.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   183

 TRANSIENT OPTIMIZATION VALUE =    .40867-001 AT NODE     11
*** LOAD STEP     2   ITER     34  COMPLETED.  TIME=    504.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   184
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3308

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72

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.8989    1/ 9/85 CP=    5233.955

 ***** TEMPERATURE  SOLUTION *****      TIME =     510.00       LOAD STEP=    2  ITERATION=     35  CUM. ITER. =  185
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1   1210.0             2   1210.0             3   1210.0             4   1210.0             5   1210.0
        6   242.34             7   180.51             8   180.84             9   180.85            10   180.85
       11   180.85

  MAXIMUM TEMPERATURE=   1210.0      AT NODE      5
  MINIMUM TEMPERATURE=   180.51      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    510.000        LOAD STEP=    2   ITER. =    35   CUM. ITER. =  185

 TRANSIENT OPTIMIZATION VALUE =    .41237-001 AT NODE     11
*** LOAD STEP     2   ITER     35  COMPLETED.  TIME=    510.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER. =  185

 TRANSIENT OPTIMIZATION VALUE =    .41807-001 AT NODE     11
*** LOAD STEP     2   ITER     36  COMPLETED.  TIME=    516.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER. =  186

 TRANSIENT OPTIMIZATION VALUE =    .41978-001 AT NODE     11
*** LOAD STEP     2   ITER     37  COMPLETED.  TIME=    522.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER. =  187

 TRANSIENT OPTIMIZATION VALUE =    .42348-001 AT NODE     11
*** LOAD STEP     2   ITER     38  COMPLETED.  TIME=    528.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER. =  188

 TRANSIENT OPTIMIZATION VALUE =    .42719-001 AT NODE     11
*** LOAD STEP     2   ITER     39  COMPLETED.  TIME=    534.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER. =  189
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SARGENT & LUNDY

73

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    SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9033    1/ 9/85 CP=    5256.824

 ***** TEMPERATURE  SOLUTION *****      TIME =     540.00       LOAD STEP=    2  ITERATION=     40  CUM. ITER. =  190
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1   1240.0             2   1240.0             3   1240.0             4   1240.0             5   1240.0
        6   261.10             7   196.18             8   196.59             9   196.59            10   196.59
       11   196.59

  MAXIMUM TEMPERATURE=   1240.0      AT NODE      5
  MINIMUM TEMPERATURE=   196.18      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    540.000        LOAD STEP=    2   ITER. =    40   CUM. ITER. =  190

 TRANSIENT OPTIMIZATION VALUE =    .43091-001 AT NODE     11
*** LOAD STEP     2   ITER     40  COMPLETED.  TIME=    540.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER. =  190

 TRANSIENT OPTIMIZATION VALUE =    .43462-001 AT NODE     11
*** LOAD STEP     2   ITER     41  COMPLETED.  TIME=    546.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER. =  191

 TRANSIENT OPTIMIZATION VALUE =    .43834-001 AT NODE     11
*** LOAD STEP     2   ITER     42  COMPLETED.  TIME=    552.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER. =  192

 TRANSIENT OPTIMIZATION VALUE =    .44206-001 AT NODE     11
*** LOAD STEP     2   ITER     43  COMPLETED.  TIME=    558.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER. =  193

 TRANSIENT OPTIMIZATION VALUE =    .44578-001 AT NODE     11
*** LOAD STEP     2   ITER     44  COMPLETED.  TIME=    564.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER. =  194
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9128   1/ 9/80 CP=    5290.331

 ***** TEMPERATURE  SOLUTION *****      TIME =     570.00      LOAD STEP=    2  ITERATION=    45  CUM. ITER.=   195
     NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP
        1   1270.0            2   1270.0            3   1270.0            4   1270.0            5   1270.0
        6   280.73            7   212.86            8   213.41            9   213.43           10   213.43
       11   213.43

  MAXIMUM TEMPERATURE=  1270.0      AT NODE      5
  MINIMUM TEMPERATURE=  212.86      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    570.000       LOAD STEP=    2   ITER.=    45   CUM. ITER.=   195

 TRANSIENT OPTIMIZATION VALUE =   .44950-001 AT NODE     11
*** LOAD STEP    2   ITER    45  COMPLETED.  TIME=    570.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   195

 TRANSIENT OPTIMIZATION VALUE =   .45321-001 AT NODE     11
*** LOAD STEP    2   ITER    46  COMPLETED.  TIME=    576.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   196

 TRANSIENT OPTIMIZATION VALUE =   .45693-001 AT NODE     11
*** LOAD STEP    2   ITER    47  COMPLETED.  TIME=    582.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   197

 TRANSIENT OPTIMIZATION VALUE =   .46064-001 AT NODE     11
*** LOAD STEP    2   ITER    48  COMPLETED.  TIME=    588.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   198

 TRANSIENT OPTIMIZATION VALUE =   .46435-001 AT NODE     11
*** LOAD STEP    2   ITER    48  COMPLETED.  TIME=    594.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   199
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9233   1/ 9/80 CP=    5328.493

 ***** TEMPERATURE  SOLUTION *****      TIME =     600.00      LOAD STEP=    2  ITERATION=    50  CUM. ITER.=   200
     NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP
        1   1300.0            2   1300.0            3   1300.0            4   1300.0            5   1300.0
        6   301.14            7   230.67            8   231.37            9   231.38           10   231.38
       11   231.38

  MAXIMUM TEMPERATURE=  1300.0      AT NODE      5
  MINIMUM TEMPERATURE=  230.67      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    600.000       LOAD STEP=    2   ITER.=    50   CUM. ITER.=   200

 TRANSIENT OPTIMIZATION VALUE =   .46808-001 AT NODE     11
*** LOAD STEP    2   ITER    50  COMPLETED.  TIME=    600.000       TIME INC=    6.00000      NEW TRIANG MATRIX  CUM. ITER.=   200

*** LOAD STEP    3  OPTIONS SPECIFICATIONS

NITTER=      15  KPRINT=       5  NPOST=       3

ALL PRINT CONTROLS RESET TO      5

ALL POST DATA FILE CONTROLS RESET TO      3

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=   600.00

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0       0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=  1.0000
TRANSIENT OPTIMIZATION CRITERIA=  10.0000
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TEMPERATURE LIMIT=    00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=     0
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=     0   ISYM=     1

NUMBER OF STRESS PASS CALCULATIONS=      0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000  (TREF=       .000)

SEISMIC COMBINATION TYPE (MCOMB)=   0

DAMPING RATIO =          .0000

BOUNDARY CONDITION PRINT KEY=  0
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9242   1/ 9/86 CP=    8331.590

LOAD STEP NUMBER=     3

          *** LOAD OPTIONS SUMMARY ***

TIME   =  800.00       (TIME AT END OF LOAD STEP)
NITTER=      15        (NUMBER OF ITERATIONS)
TUNIF  =  70.0000      (UNIFORM TEMPERATURE)    (TREF=      .0000)
KBC    =   0           (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS.
                         LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES.)

NPRINT=       5        (OVERALL PRINT FREQUENCY)
NPOST  =      3        (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
  FREQ    NSTRT   NSTOP    NINC
     5        1   99900       1

 ELEMENT PRINT AND POST FREQUENCIES
  TYPE   STIFF   STRESS   FORCE        STRESS   STRESS   FORCE
          NO.    PRINT   PRINT         POST     LEVEL    POST
     1     33        5       5            3        3        3
     2     31        5       5            3        3        3


          ***** SPECIFIED TEMPERATURES *****

   NODE       TEMP

      1     1399.00
      2     1399.00
      3     1399.00
      4     1399.00
      5     1399.00


***** LOAD SUMMARY -       5 TEMPERATURES       0 HEAT FLOWS     0 CONVECTIONS      *****


 TRANSIENT OPTIMIZATION VALUE =    20.615      AT NODE       1
*** LOAD STEP     3   ITER      1  COMPLETED.  TIME=    820.000      TIME INC=    20.0000      NEW TRIANG MATRIX  CUM. ITER. =  201

 TRANSIENT OPTIMIZATION VALUE =    .68852-001  AT NODE       7
*** LOAD STEP     3   ITER      2  COMPLETED.  TIME=    840.000      TIME INC=    20.0000      NEW TRIANG MATRIX  CUM. ITER. =  202

 TRANSIENT OPTIMIZATION VALUE =    .11429      AT NODE       7
*** LOAD STEP     3   ITER      3  COMPLETED.  TIME=    860.000      TIME INC=    20.0000      NEW TRIANG MATRIX  CUM. ITER. =  203

 TRANSIENT OPTIMIZATION VALUE =    .12812      AT NODE      11
*** LOAD STEP     3   ITER      4  COMPLETED.  TIME=    880.000      TIME INC=    20.0000      NEW TRIANG MATRIX  CUM. ITER. =  204
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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.9303 1/ 9/88 CP= 5353.768

***** TEMPERATURE SOLUTION ***** TIME = 700.00 LOAD STEP= 3 ITERATION= 5 CUM. ITER.= 205

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	1333.0	2	1333.0	3	1333.0	4	1333.0	5	1333.0
6	370.48	7	293.31	8	294.56	9	294.61	10	294.61
11	294.61								

MAXIMUM TEMPERATURE= 1333.0 AT NODE 5
MINIMUM TEMPERATURE= 293.31 AT NODE 7

***** ELEMENT HEAT FLOW RATES ***** TIME = 700.000 LOAD STEP= 3 ITER.= 5 CUM. ITER.= 205

TRANSIENT OPTIMIZATION VALUE = .13293 AT NODE 11
*** LOAD STEP 3 ITER 5 COMPLETED. TIME= 700.000 TIME INC= 20.0000 NEW TRIANG MATRIX CUM. ITER.= 205

TRANSIENT OPTIMIZATION VALUE = .13409 AT NODE 11
*** LOAD STEP 3 ITER 6 COMPLETED. TIME= 720.000 TIME INC= 20.0000 NEW TRIANG MATRIX CUM. ITER.= 206

TRANSIENT OPTIMIZATION VALUE = .12225 AT NODE 8
*** LOAD STEP 3 ITER 7 COMPLETED. TIME= 740.000 TIME INC= 20.0000 NEW TRIANG MATRIX CUM. ITER.= 207

TRANSIENT OPTIMIZATION VALUE = .94865-001 AT NODE 11
*** LOAD STEP 3 ITER 8 COMPLETED. TIME= 760.000 TIME INC= 20.0000 NEW TRIANG MATRIX CUM. ITER.= 208

TRANSIENT OPTIMIZATION VALUE = .85133-001 AT NODE 11
*** LOAD STEP 3 ITER 9 COMPLETED. TIME= 780.000 TIME INC= 20.0000 NEW TRIANG MATRIX CUM. ITER.= 209

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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.9344 1/ 9/88 CP= 5358.630

***** TEMPERATURE SOLUTION ***** TIME = 800.00 LOAD STEP= 3 ITERATION= 10 CUM. ITER.= 210

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	1368.0	2	1368.0	3	1368.0	4	1368.0	5	1368.0
6	439.85	7	354.54	8	360.64	9	360.72	10	360.72
11	360.72								

MAXIMUM TEMPERATURE= 1368.0 AT NODE 5
MINIMUM TEMPERATURE= 354.54 AT NODE 7

***** ELEMENT HEAT FLOW RATES ***** TIME = 800.000 LOAD STEP= 3 ITER.= 10 CUM. ITER.= 210

TRANSIENT OPTIMIZATION VALUE = .81041-001 AT NODE 11
*** LOAD STEP 3 ITER 10 COMPLETED. TIME= 800.000 TIME INC= 20.0000 NEW TRIANG MATRIX CUM. ITER.= 210

TRANSIENT OPTIMIZATION VALUE = .78781-001 AT NODE 11
*** LOAD STEP 3 ITER 11 COMPLETED. TIME= 820.000 TIME INC= 20.0000 NEW TRIANG MATRIX CUM. ITER.= 211

TRANSIENT OPTIMIZATION VALUE = .77093-001 AT NODE 11
*** LOAD STEP 3 ITER 12 COMPLETED. TIME= 840.000 TIME INC= 20.0000 NEW TRIANG MATRIX CUM. ITER.= 212

TRANSIENT OPTIMIZATION VALUE = .76562-001 AT NODE 11
*** LOAD STEP 3 ITER 13 COMPLETED. TIME= 860.000 TIME INC= 20.0000 NEW TRIANG MATRIX CUM. ITER.= 213

TRANSIENT OPTIMIZATION VALUE = .74053-001 AT NODE 11
*** LOAD STEP 3 ITER 14 COMPLETED. TIME= 880.000 TIME INC= 20.0000 NEW TRIANG MATRIX CUM. ITER.= 214

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 *   ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION # 1       C      SARGENT & LUNDY  JAN 1,1983
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9386   1/ 9/86 CP=    5383.847

 ***** TEMPERATURE  SOLUTION *****      TIME =     800.00       LOAD STEP=    3  ITERATION=     15  CUM. ITER.=  215
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1   1399.0             2   1399.0             3   1399.0             4   1399.0             5   1399.0
        6   509.00             7   425.71             8   428.74             9   428.88            10   428.86
       11   428.86

  MAXIMUM TEMPERATURE=  1399.0      AT NODE      5
  MINIMUM TEMPERATURE=  425.71      AT NODE      7


  ***** ELEMENT HEAT FLOW RATES *****  TIME =    800.000        LOAD STEP=    3   ITER.=    15   CUM. ITER.=  215

  TRANSIENT OPTIMIZATION VALUE =    .72519-001 AT NODE     11
*** LOAD STEP    3   ITER    15  COMPLETED.  TIME=    800.000       TIME INC=    20.0000      NEW TRIANG MATRIX  CUM. ITER.=  215

*** LOAD STEP    4  OPTIONS SPECIFICATIONS

NITTER=       5  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1

ALL POST DATA FILE CONTROLS RESET TO      1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  1200.0

ACEL=     .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=    .00000        .00000        .00000

DOMEGA=   .00000        .00000        .00000

CGLOC=    .00000        .00000        .00000

CGOMGA=   .00000        .00000        .00000

DCGOME=   .00000        .00000        .00000

KTEMP=       0       0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=   1.0000
TRANSIENT OPTIMIZATION CRITERIA=  10.0000
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TEMPERATURE LIMIT=    .00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=      0.
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=      0   ISYM=      1

NUMBER OF STRESS PASS CALCULATIONS=       0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000  (TREF=       .000)

SEISMIC COMBINATION TYPE (MCOMB)=    0

DAMPING RATIO =          .0000

BOUNDARY CONDITION PRINT KEY=  0
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9392   1/ 9/86 CP=    5385.320

 LOAD STEP NUMBER=     4

          *** LOAD OPTIONS SUMMARY ***

 TIME   =   1200.0       (TIME AT END OF LOAD STEP)
 NITTER=       5         (NUMBER OF ITERATIONS)
 TUNIF  =   70.0000      (UNIFORM TEMPERATURE)    (TREF=      0000)
 KBC    =   0            (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS
                           LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES.)

 NPRINT=       1         (OVERALL PRINT FREQUENCY)
 NPOST  =      1         (OVERALL POST FREQUENCY)

  DISPLACEMENT PRINT FREQUENCIES
   FREQ    NSTRT   NSTOP    NINC
      1        1   99900       1

  ELEMENT PRINT AND POST FREQUENCIES
   TYPE   STIFF   STRESS   FORCE        STRESS   STRESS   FORCE
           NO.    PRINT   PRINT         POST     LEVEL    POST
     1     33       1       1            1        3        1
     2     31       1       1            1        3        1


           ***** SPECIFIED TEMPERATURES *****

    NODE       TEMP

       1     1462.00
       2     1462.00
       3     1462.00
       4     1462.00
       5     1462.00


 ***** LOAD SUMMARY -       5 TEMPERATURES       0 HEAT FLOWS     0 CONVECTIONS      *****


  TIME AT START OF BACK SUBSTITUTION   CP=   5387.398      LOAD STEP=    4   ITERATION=      1   CUM. ITER.=   216
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9397   1/ 9/86 CP=    5387.429

 ***** TEMPERATURE  SOLUTION *****      TIME =     860.00       LOAD STEP=    4   ITERATION=      1   CUM. ITER.=   216
     NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP
        1   1411.6               2   1411.6               3   1411.6               4   1411.6               5   1411.6
        6   545.54               7   466.24               8   469.84               9   470.01              10   470.02
       11   470.02

  MAXIMUM TEMPERATURE=   1411.6      AT NODE      5
  MINIMUM TEMPERATURE=   466.24      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    860.000       LOAD STEP=    4   ITER.=      1   CUM. ITER.=   216

  TRANSIENT OPTIMIZATION VALUE =    10.600      AT NODE      1
*** LOAD STEP     4   ITER      1  COMPLETED.  TIME=    860.000       TIME INC=    60.0000      NEW TRIANG MATRIX  CUM. ITER.=   216
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SARGENT & LUNDY ENGINEERS

3308

84

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  SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-6855

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.8403   1/ 9/86 CP=    5390.172

 ***** TEMPERATURE  SOLUTION *****      TIME =     1020.0      LOAD STEP=    4  ITERATION=     2  CUM. ITER. =  217
    NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
       1   1424.2             2   1424.2             3   1424.2             4   1424.2             5   1424.2
       6   568.93             7   506.14             8   510.25             9   510.50            10   510.50
      11   510.50

  MAXIMUM TEMPERATURE=   1424.2      AT NODE      5
  MINIMUM TEMPERATURE=   506.14      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    1020.00        LOAD STEP=    4   ITER. =     2   CUM. ITER. =  217

 TRANSIENT OPTIMIZATION VALUE =    1.1526      AT NODE      6
*** LOAD STEP     4   ITER      2  COMPLETED.  TIME=    1020.00       TIME INC=    60.0000      NEW TRIANG MATRIX  CUM. ITER. =  217
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85

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.8411   1/ 9/86 CP=    5392.835

 ***** TEMPERATURE  SOLUTION *****      TIME =     1080.0      LOAD STEP=    4  ITERATION=     3  CUM. ITER. =  218
    NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
       1   1436.8             2   1436.8             3   1436.8             4   1436.8             5   1436.8
       6   627.51             7   545.79             8   550.48             9   550.72            10   550.73
      11   550.73

  MAXIMUM TEMPERATURE=   1436.8      AT NODE      5
  MINIMUM TEMPERATURE=   545.79      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    1080.00        LOAD STEP=    4   ITER. =     3   CUM. ITER. =  218

 TRANSIENT OPTIMIZATION VALUE =    .81018      AT NODE      6
*** LOAD STEP     4   ITER      3  COMPLETED.  TIME=    1080.00       TIME INC=    60.0000      NEW TRIANG MATRIX  CUM. ITER. =  218
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8067

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9419    1/ 9/85 CP=    5395.519

 ***** TEMPERATURE  SOLUTION *****      TIME =     1140.0      LOAD STEP=    4  ITERATION=      4  CUM. ITER.=   219
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1449.4                2   1449.4                3   1449.4                4   1449.4                5   1449.4
        6   585.40                7   585.26                8   590.50                9   590.79               10   590.81
       11   590.81

  MAXIMUM TEMPERATURE=   1449.4      AT NODE      5
  MINIMUM TEMPERATURE=   585.26      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    1140.00        LOAD STEP=     4   ITER.=      4   CUM. ITER.=   219

 TRANSIENT OPTIMIZATION VALUE =     .68327      AT NODE      8
*** LOAD STEP     4   ITER      4  COMPLETED.  TIME=    1140.00       TIME INC=    60.0000      NEW TRIANG MATRIX  CUM. ITER.=   219
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9425    1/ 9/85 CP=    5397.772

 ***** TEMPERATURE  SOLUTION *****      TIME =     1200.0      LOAD STEP=    4  ITERATION=      5  CUM. ITER.=   220
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1462.0                2   1462.0                3   1462.0                4   1462.0                5   1462.0
        6   702.66                7   624.58                8   630.38                9   630.72               10   630.73
       11   630.73

  MAXIMUM TEMPERATURE=   1462.0      AT NODE      5
  MINIMUM TEMPERATURE=   624.58      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    1200.00        LOAD STEP=     4   ITER.=      5   CUM. ITER.=   220

 TRANSIENT OPTIMIZATION VALUE =     .62867      AT NODE      8
*** LOAD STEP     4   ITER      5  COMPLETED.  TIME=    1200.00       TIME INC=    60.0000      NEW TRIANG MATRIX  CUM. ITER.=   220

*** LOAD STEP    5  OPTIONS SPECIFICATIONS

NITTER=       5   NPRINT=      1   NPOST=      1

ALL PRINT CONTROLS RESET TO      1

ALL POST DATA FILE CONTROLS RESET TO      1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  1500.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CDOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0     0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=   1.0000
TRANSIENT OPTIMIZATION CRITERIA=  10.0000
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3308

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TEMPERATURE LIMIT=    00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=     0
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=     0   ISYM=

NUMBER OF STRESS PASS CALCULATIONS=      0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000  (TREF=      .000)

SEISMIC COMBINATION TYPE (MCOMB)=   0

DAMPING RATIO =          .0000

BOUNDARY CONDITION PRINT KEY=  0
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18 9431   1/ 8/86 CP=    5400.107

LOAD STEP NUMBER=     5

          *** LOAD OPTIONS SUMMARY ***

TIME   =   1500.0       (TIME AT END OF LOAD STEP)
NITTER=       5         (NUMBER OF ITERATIONS)
TUNIF  =   70.0000      (UNIFORM TEMPERATURE)   (TREF=      .0000)
KBC    =   0            (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS.
                          LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES.)

NPRINT=       1         (OVERALL PRINT FREQUENCY)
NPOST  =      1         (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
  FREQ    NSTRT   NSTOP    NINC
     1        1   88900       1

 ELEMENT PRINT AND POST FREQUENCIES
  TYPE   STIFF   STRESS   FORCE       STRESS   STRESS   FORCE
          NO.    PRINT   PRINT        POST     LEVEL    POST
     1     33       1       1           1        3        1
     2     31       1       1           1        3        1


          ***** SPECIFIED TEMPERATURES *****

   NODE       TEMP

     1      1510.00
     2      1510.00
     3      1510.00
     4      1510.00
     5      1510.00


***** LOAD SUMMARY -       5 TEMPERATURES       0 HEAT FLOWS     0 CONVECTIONS      *****

 TIME AT START OF BACK SUBSTITUTION   CP=  5402.636      LOAD STEP=   5  ITERATION=     1  CUM. ITER.=  221
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90

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                          18.9439   1/ 9/86 CP=    5402.860

 ***** TEMPERATURE  SOLUTION *****      TIME =     1260.0       LOAD STEP=    5  ITERATION=      1  CUM. ITER.=   221
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1471.6                2   1471.6                3   1471.6                4   1471.6                5   1471.6
        6   739.30                7   863.63                8   869.99                9   870.37               10   870.38
       11   870.39

  MAXIMUM TEMPERATURE=   1471.6      AT NODE      5
  MINIMUM TEMPERATURE=   863.63      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    1260.00        LOAD STEP=    5   ITER.=      1   CUM. ITER.=   221

 TRANSIENT OPTIMIZATION VALUE =    3.0000      AT NODE      1
*** LOAD STEP     5   ITER      1  COMPLETED.  TIME=    1260.00       TIME INC=    60.0000      NEW TRIANG MATRIX  CUM. ITER.=   221
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                          18.9447   1/ 8/86 CP=    5405.493

 ***** TEMPERATURE  SOLUTION *****      TIME =     1320.0       LOAD STEP=    5  ITERATION=      2  CUM. ITER.=   222
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1481.2                2   1481.2                3   1481.2                4   1481.2                5   1481.2
        6   775.46                7   702.27                8   709.18                9   709.61               10   709.63
       11   709.63

  MAXIMUM TEMPERATURE=   1481.2      AT NODE      5
  MINIMUM TEMPERATURE=   702.27      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    1320.00        LOAD STEP=    5   ITER.=      2   CUM. ITER.=   222

 TRANSIENT OPTIMIZATION VALUE =    .48730      AT NODE      8
*** LOAD STEP     5   ITER      2  COMPLETED.  TIME=    1320.00       TIME INC=    60.0000      NEW TRIANG MATRIX  CUM. ITER.=   222
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3308

92

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9456    1/ 9/86 CP=    5408.764

 ***** TEMPERATURE  SOLUTION *****      TIME =     1380.0       LOAD STEP=    5  ITERATION=     3  CUM. ITER.=   223
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1490.8                2   1490.8                3   1490.8                4   1490.8                5   1490.8
        6   811.15                7   740.46                8   747.90                9   748.38               10   748.40

  MAXIMUM TEMPERATURE=   1490.8      AT NODE      5
  MINIMUM TEMPERATURE=   740.46      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    1380.00        LOAD STEP=    5   ITER.=     3   CUM. ITER.=   223

 TRANSIENT OPTIMIZATION VALUE =     47017      AT NODE      8
*** LOAD STEP     5   ITER      3  COMPLETED.  TIME=    1380.00       TIME INC=    80.0000      NEW TRIANG MATRIX  CUM. ITER.=   223
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93

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9457    1/ 9/86 CP=    5412.220

 ***** TEMPERATURE  SOLUTION *****      TIME =     1440.0       LOAD STEP=    5  ITERATION=     4  CUM. ITER.=   224
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1500.4                2   1500.4                3   1500.4                4   1500.4                5   1500.4
        6   846.39                7   778.15                8   786.11                9   786.56               10   786.67

  MAXIMUM TEMPERATURE=   1500.4      AT NODE      5
  MINIMUM TEMPERATURE=   778.15      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    1440.00        LOAD STEP=    5   ITER.=     4   CUM. ITER.=   224

 TRANSIENT OPTIMIZATION VALUE =    .50945      AT NODE      8
*** LOAD STEP     5   ITER      4  COMPLETED.  TIME=    1440.00       TIME INC=    80.0000      NEW TRIANG MATRIX  CUM. ITER.=   224
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3308

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9472   I/ 9/86 CP=    5414.987

 ***** TEMPERATURE  SOLUTION *****      TIME =     1500.0       LOAD STEP=    5  ITERATION=     5  CUM. ITER. =  225
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1510.0                2   1510.0                3   1510.0                4   1510.0                5   1510.0
        6   881.14                7   815.31                8   823.78                9   824.39               10   824.39
       11   824.39

  MAXIMUM TEMPERATURE=  1510.0      AT NODE      5
  MINIMUM TEMPERATURE=  815.31      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    1500.00        LOAD STEP=    5   ITER.=     5   CUM. ITER.=  225

 TRANSIENT OPTIMIZATION VALUE =     54389      AT NODE      8
*** LOAD STEP     5   ITER      5  COMPLETED.   TIME=    1500.00       TIME INC=    60.0000      NEW TRIANG MATRIX  CUM. ITER. =  225

*** LOAD STEP    6  OPTIONS SPECIFICATIONS

NITTER=       4  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO       1

ALL POST DATA FILE CONTROLS RESET TO      1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  1800.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0      0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=   1.0000
TRANSIENT OPTIMIZATION CRITERIA= 10.0000
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TEMPERATURE LIMIT=    .00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=      0
ABORT LEVEL KEY=   0

HARMONIC LOAD PARAMETERS  MODE=      0    ISYM=      1

NUMBER OF STRESS PASS CALCULATIONS=       0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000  (TREF=       .000)

SEISMIC COMBINATION TYPE (MCOMB)=    0

DAMPING RATIO =          .0000

BOUNDARY CONDITION PRINT KEY=  0
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3308

96

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9478   1/ 9/85 CP=    5415.499

 LOAD STEP NUMBER=     6

          *** LOAD OPTIONS SUMMARY ***

 TIME   =   1800.0       (TIME AT END OF LOAD STEP)
 NITTER=       4         (NUMBER OF ITERATIONS)
 TUNIF  =   70.0000      (UNIFORM TEMPERATURE)    (TREF=      .0000)
 KBC    =   0            (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS.
                           LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES.)

 NPRINT=       1         (OVERALL PRINT FREQUENCY)
 NPOST  =      1         (OVERALL POST FREQUENCY)

  DISPLACEMENT PRINT FREQUENCIES
   FREQ    NSTRT   NSTOP    NINC
      1        1   99999       1

  ELEMENT PRINT AND POST FREQUENCIES
    TYPE   STIFF   STRESS   FORCE      STRESS   STRESS   FORCE
           NO.     PRINT    PRINT      POST     LEVEL    POST
      1     33       1        1          1        3        1
      2     31       1        1          1        3        1


            ***** SPECIFIED TEMPERATURES *****

     NODE       TEMP

        1     1550.00
        2     1550.00
        3     1550.00
        4     1550.00
        5     1550.00


***** LOAD SUMMARY -       5 TEMPERATURES       0 HEAT FLOWS     0 CONVECTIONS      *****


 TIME AT START OF BACK SUBSTITUTION   CP=   5420.809       LOAD STEP=    6  ITERATION=      1  CUM. ITER.=   226
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97

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9488   1/ 9/85 CP=    5420.829

 ***** TEMPERATURE  SOLUTION *****      TIME =    1575.0        LOAD STEP=    6  ITERATION=      1  CUM  ITER.=   226
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1    1520.0              3    1520.0              3    1520.0              4    1520.0              5    1520.0
        6    823.87              7    860.77              8    899.82              9    870.46             10    870.50
       11    870.50

 MAXIMUM TEMPERATURE=   1520.0      AT NODE      5
 MINIMUM TEMPERATURE=   860.77      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    1575.00        LOAD STEP=     6   ITER.=      1   CUM  ITER.=   226

 TRANSIENT OPTIMIZATION VALUE =    2.2222      AT NODE      1
 *** LOAD STEP     6   ITER      1  COMPLETED.  TIME=    1575.00       TIME INC=    75.0000      NEW TRIANG MATRIX  CUM  ITER.=   226
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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.9503 1/ 9/86 CP= 5425.874

***** TEMPERATURE SOLUTION ***** TIME = 1650.0 LOAD STEP= 6 ITERATION= 2 CUM. ITER.= 227

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	1530.0	2	1530.0	3	1530.0	4	1530.0	5	1530.0
6	954.82	7	904.60	8	914.35	9	915.00	10	915.04
11	915.04								

MAXIMUM TEMPERATURE= 1530.0 AT NODE 5
MINIMUM TEMPERATURE= 904.60 AT NODE 7

***** ELEMENT HEAT FLOW RATES ***** TIME = 1650.00 LOAD STEP= 6 ITER.= 2 CUM. ITER.= 227

TRANSIENT OPTIMIZATION VALUE = 1.5152 AT NODE 7
*** LOAD STEP 6 ITER 2 COMPLETED. TIME= 1650.00 TIME INC= 75.0000 NEW TRIANG MATRIX CUM. ITER.= 227

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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.9519 1/ 9/86 CP= 5431.786

***** TEMPERATURE SOLUTION ***** TIME = 1725.0 LOAD STEP= 5 ITERATION= 3 CUM. ITER.= 228

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	1540.0	2	1540.0	3	1540.0	4	1540.0	5	1540.0
6	1004.8	7	946.60	8	956.96	9	957.84	10	957.67
11	957.68								

MAXIMUM TEMPERATURE= 1540.0 AT NODE 5
MINIMUM TEMPERATURE= 946.60 AT NODE 7

***** ELEMENT HEAT FLOW RATES ***** TIME = 1725.00 LOAD STEP= 6 ITER.= 3 CUM. ITER.= 228

TRANSIENT OPTIMIZATION VALUE = 1.9058 AT NODE 11
*** LOAD STEP 6 ITER 3 COMPLETED. TIME= 1725.00 TIME INC= 75.0000 NEW TRIANG MATRIX CUM. ITER.= 228

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                  18.9536   1/ 9/84 CP=    5437.374

 ***** TEMPERATURE  SOLUTION *****      TIME =     1800.0      LOAD STEP=    6  ITERATION=     4  CUM. ITER. =  229
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1   1550.0             2   1550.0             3   1550.0             4   1550.0             5   1550.0
        6   1042.9             7    988.78            8    997.71            9    998.37           10    988.41
       11    988.41

  MAXIMUM TEMPERATURE=  1550.0      AT NODE      5
  MINIMUM TEMPERATURE=   988.78     AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    1800.00        LOAD STEP=     6   ITER.=     4   CUM. ITER.=  229

 TRANSIENT OPTIMIZATION VALUE =    1.9047      AT NODE     11
*** LOAD STEP     6   ITER      4  COMPLETED.  TIME=    1800.00       TIME INC=    75.0000      NEW TRIANG MATRIX  CUM. ITER.=  229

*** LOAD STEP    7  OPTIONS SPECIFICATIONS

NITTER=       4  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO       1

ALL POST DATA FILE CONTROLS RESET TO       1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  2100.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0      0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=   1.0000
TRANSIENT OPTIMIZATION CRITERIA=  10.0000
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TEMPERATURE LIMIT=    .00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=      0
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=      0   ISYM=      1

NUMBER OF STRESS PASS CALCULATIONS=       0

STRAIN ENERGY KEY=  0

REACTION FORCE KEY=  0

UNIFORM TEMPERATURE=    70.000  (TREF=       .000)

SEISMIC COMBINATION TYPE (MCOMB)=    0

DAMPING RATIO =          .0000

BOUNDARY CONDITION PRINT KEY=  0
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9542   1/ 9/84 CP=    5438.779


 LOAD STEP NUMBER=     7

          *** LOAD OPTIONS SUMMARY ***

 TIME   =  2100.0       (TIME AT END OF LOAD STEP)
 NITTER=      4         (NUMBER OF ITERATIONS)
 TUNIF  =  70.0000      (UNIFORM TEMPERATURE)    (TREF=      0000)
 KBC    =  0            (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS
                          LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES )

 NPRINT=      1         (OVERALL PRINT FREQUENCY)
 NPOST  =     1         (OVERALL POST FREQUENCY)

  DISPLACEMENT PRINT FREQUENCIES
    FREQ    NSTRT   NSTOP    NINC
       1        1   99900       1

  ELEMENT PRINT AND POST FREQUENCIES
    TYPE   STIFF   STRESS   FORCE        STRESS   STRESS   FORCE
           NO.     PRINT    PRINT        POST     LEVEL    POST
       1     33       1        1           1        3        1
       2     31       1        1           1        3        1


            ***** SPECIFIED TEMPERATURES *****

     NODE       TEMP

        1     1584.00
        2     1584.00
        3     1584.00
        4     1584.00
        5     1584.00


 ***** LOAD SUMMARY -        5 TEMPERATURES        0 HEAT FLOWS     0 CONVECTIONS      *****


  TIME AT START OF BACK SUBSTITUTION   CP=  5441.779      LOAD STEP=    7  ITERATION=     1  CUM. ITER.=  230
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9547   1/ 9/84 CP=    5441.789


 ***** TEMPERATURE  SOLUTION *****      TIME =     1875.0      LOAD STEP=    7  ITERATION=     1  CUM. ITER.=  230
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1   1558.5             2   1558.5             3   1558.5             4   1558.5             5   1558.5
        6   1079.9             7   1025.2             8   1036.8             9   1037.2            10   1037.3
       11   1037.3

  MAXIMUM TEMPERATURE=  1558.5      AT NODE      5
  MINIMUM TEMPERATURE=  1025.2      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    1875.00        LOAD STEP=    7   ITER.=     1   CUM. ITER.=  230

  TRANSIENT OPTIMIZATION VALUE =    1.8827      AT NODE      8
*** LOAD STEP     7   ITER      1  COMPLETED.  TIME=    1875.00       TIME INC=    75.0000      NEW TRIANG MATRIX  CUM. ITER.=  230
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104

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9556   1/ 9/83 CP=    5444.582

 ***** TEMPERATURE  SOLUTION *****      TIME =     1950.0       LOAD STEP=    7  ITERATION=     2  CUM. ITER.=  231
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1567.0                2   1567.0                3   1567.0                4   1567.0                5   1567.0
        6   1115.3                7   1061.8                8   1073.6                9   1074.3               10   1074.3
       11   1074.3

  MAXIMUM TEMPERATURE=   1567.0      AT NODE      5
  MINIMUM TEMPERATURE=   1061.8      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    1950.00        LOAD STEP=    7   ITER.=     2   CUM. ITER.=  231

 TRANSIENT OPTIMIZATION VALUE =    1.8251      AT NODE      8
*** LOAD STEP     7   ITER      2  COMPLETED.  TIME=    1950.00       TIME INC=    75.0000      NEW TRIANG MATRIX  CUM. ITER.=  231
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SARGENT & LUNDY

105

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9561   1/ 9/83 CP=    5444.863

 ***** TEMPERATURE  SOLUTION *****      TIME =     2025.0       LOAD STEP=    7  ITERATION=     3  CUM. ITER.=  237
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1575.5                2   1575.5                3   1075.5                4   1575.5                5   1575.5
        6   1149.5                7   1087.1                8   1109.0                9   1109.7               10   1109.8
       11   1109.8

  MAXIMUM TEMPERATURE=   1575.5      AT NODE      5
  MINIMUM TEMPERATURE=   1087.1      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    2025.00        LOAD STEP=    7   ITER.=     3   CUM. ITER.=  232

 TRANSIENT OPTIMIZATION VALUE =    1.5944      AT NODE      8
*** LOAD STEP     7   ITER      3  COMPLETED.  TIME=    2025.00       TIME INC=    75.0000      NEW TRIANG MATRIX  CUM. ITER.=  233
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108

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                  18.9569    1/ 9/85 CP=    5449.369

 ***** TEMPERATURE  SOLUTION *****      TIME =     2100.0       LOAD STEP=    7  ITERATION=      4  CUM. ITER.=   233
    NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
       1   1584.0             2   1584.0             3   1584.0             4   1584.0             5   1584.0
       6   1182.7             7   1131.4             8   1143.4             9   1144.2            10   1144.2
      11   1144.2

  MAXIMUM TEMPERATURE=   1584.0      AT NODE      5
  MINIMUM TEMPERATURE=   1131.4      AT NODE      7

  ***** ELEMENT HEAT FLOW RATES *****  TIME =    2100.00        LOAD STEP=     7   ITER.=      4   CUM. ITER.=   233

 TRANSIENT OPTIMIZATION VALUE =    1.0898      AT NODE      6
*** LOAD STEP     7   ITER      4  COMPLETED.  TIME=    2100.00       TIME INC=    75.0000      NEW TRIANG MATRIX  CUM. ITER.=   233

*** LOAD STEP    8  OPTIONS SPECIFICATIONS

NITTER=       8  NPRINT=      1  NPOST=      1

ALL PRINT CONTROLS RESET TO      1

ALL POST DATA FILE CONTROLS RESET TO      1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  2400.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0      0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=   1.0000
TRANSIENT OPTIMIZATION CRITERIA=  10.0000
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SARGENT LUNDY

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TEMPERATURE LIMIT=    .00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=      0.
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=      0    ISYM=      1

NUMBER OF STRESS PASS CALCULATIONS=       0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000   (TREF=       .000)

SEISMIC COMBINATION TYPE (MCOMB)=    0

DAMPING RATIO =          .0000

BOUNDARY CONDITION PRINT KEY=  0
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SARGENT LUNDY

3308

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                          18.9572   1/ 9/88 CP=    5450.852

LOAD STEP NUMBER=     8

          *** LOAD OPTIONS SUMMARY ***

TIME   =   2400.0       (TIME AT END OF LOAD STEP)
NITTER=       4         (NUMBER OF ITERATIONS)
TUNIF  =   70.0000      (UNIFORM TEMPERATURE)    (TREF=      .0000)
KBC    =   0            (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS
                          LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES )

NPRINT=       1         (OVERALL PRINT FREQUENCY)
NPOST  =      1         (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
  FREQ    NSTRT  NSTOP    NINC
     1        1  99800       1

 ELEMENT PRINT AND POST FREQUENCIES
  TYPE   STIFF   STRESS  FORCE       STRESS  STRESS  FORCE
          NO.    PRINT  PRINT        POST    LEVEL   POST
     1     33       1      1           1       3       1
     2     31       1      1           1       3       1


          ***** SPECIFIED TEMPERATURES *****

   NODE       TEMP

     1      1613.00
     2      1613.00
     3      1613.00
     4      1613.00
     5      1613.00

***** LOAD SUMMARY -       5 TEMPERATURES       0 HEAT FLOWS     0 CONVECTIONS      *****


 TIME AT START OF BACK SUBSTITUTION   CP=  5452.779      LOAD STEP=    8  ITERATION=     1  CUM. ITER. =  234
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                          18.9578   1/ 9/88 CP=    5452.800

***** TEMPERATURE  SOLUTION *****      TIME =    2175.0       LOAD STEP=    8  ITERATION=     1  CUM. ITER. =  234
   NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
      1   1591.3             2   1591.3             3   1591.3             4   1591.3             5   1591.3
      6   1214.7             7   1184.8             8   1176.8             9   1177.7            10   1177.7
     11   1177.7

 MAXIMUM TEMPERATURE=  1591.3      AT NODE      5
 MINIMUM TEMPERATURE=  1184.8      AT NODE      7


***** ELEMENT HEAT FLOW RATES *****  TIME =    2175.00        LOAD STEP=    8   ITER. =     1   CUM. ITER. =  234

 TRANSIENT OPTIMIZATION VALUE =    1.2500      AT NODE      1
*** LOAD STEP     8   ITER      1  COMPLETED.  TIME=    2175.00       TIME INC=    75.0000      NEW TRIANG MATRIX  CUM. ITER. =  234
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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.9586 1/ 9/86 CP= 5455.247

***** TEMPERATURE SOLUTION ***** TIME = 2250.0 LOAD STEP= 8 ITERATION= 2 CUM. ITER.= 235

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	1598.5	2	1598.5	3	1598.5	4	1598.5	5	1598.5
6	1245.6	7	1187.2	8	1209.2	9	1210.1	10	1210.2
11	1210.2								

MAXIMUM TEMPERATURE= 1598.5 AT NODE 5
MINIMUM TEMPERATURE= 1187.3 AT NODE 7

***** ELEMENT HEAT FLOW RATES ***** TIME = 2250.00 LOAD STEP= 8 ITER.= 2 CUM. ITER.= 237

TRANSIENT OPTIMIZATION VALUE = 1.1636 AT NODE 8
*** LOAD STEP 8 ITER 2 COMPLETED. TIME= 2250.00 TIME INC= 75.0000 NEW TRIANG MATRIX CUM. ITER.= 235

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DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.9597 1/ 9/86 CP= 5459.312

***** TEMPERATURE SOLUTION ***** TIME = 2325.0 LOAD STEP= 8 ITERATION= 3 CUM. ITER.= 238

NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP	NODE	TEMP
1	1605.8	2	1605.8	3	1605.8	4	1605.8	5	1605.8
6	1275.2	7	1228.8	8	1240.8	9	1241.6	10	1241.6
11	1241.6								

MAXIMUM TEMPERATURE= 1605.8 AT NODE 5
MINIMUM TEMPERATURE= 1228.8 AT NODE 7

***** ELEMENT HEAT FLOW RATES ***** TIME = 2325.00 LOAD STEP= 8 ITER.= 3 CUM. ITER.= 236

TRANSIENT OPTIMIZATION VALUE = 1.1787 AT NODE 8
*** LOAD STEP 8 ITER 3 COMPLETED. TIME= 2325.00 TIME INC= 75.0000 NEW TRIANG MATRIX CUM. ITER.= 238

SARGENT & LUNDY ENGINEERS

3108

112

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    16.9606   1/ 9/85 CP=    5452.669

 ***** TEMPERATURE  SOLUTION *****     TIME =     2400.0       LOAD STEP=    8  ITERATION=     4  CUM. ITER. =  237
     NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP
        1   1813.0            2   1813.0            3   1813.0            4   1813.0            5   1813.0
        6   1307.7            7   1259.3            8   1270.9            9   1271.9           10   1272.0
       11   1272.0

  MAXIMUM TEMPERATURE=  1813.0      AT NODE      5
  MINIMUM TEMPERATURE=  1259.3      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    2400.00        LOAD STEP=     8   ITER. =     4   CUM. ITER. =  237

 TRANSIENT OPTIMIZATION VALUE =    1.1829      AT NODE      5
*** LOAD STEP     8   ITER      4  COMPLETED.  TIME=    2400.00       TIME INC=    75.0000      NEW TRIANG MATRIX  CUM. ITER. =  237

*** LOAD STEP    9  OPTIONS SPECIFICATIONS

NITTER=       3  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1

ALL POST DATA FILE CONTROLS RESET TO      1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS

NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  2700.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0       0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=   1.0000
TRANSIENT OPTIMIZATION CRITERIA= 10.0000
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113

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TEMPERATURE LIMIT=    .00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=      0.
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=     0   ISYM=     1

NUMBER OF STRESS PASS CALCULATIONS=       0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000   (TREF=       .000)

SEISMIC COMBINATION TYPE (MCOMB)=    0

DAMPING RATIO =          .0000

BOUNDARY CONDITION PRINT KEY=  0
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1308

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    SWANSON ANALYSIS SYSTEMS, INC          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-6855

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9811   1/ 9/86 CP=    5464.422

 LOAD STEP NUMBER=     8

          *** LOAD OPTIONS SUMMARY ***

TIME   =   2700.0       (TIME AT END OF LOAD STEP)
NITTER=       3         (NUMBER OF ITERATIONS)
TUNIF  =   70.0000      (UNIFORM TEMPERATURE)   (TREF=      .0000)
KBC    =   0            (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS,
                          LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES.)

NPRINT=       1         (OVERALL PRINT FREQUENCY)
NPOST  =      1         (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
  FREQ    NSTRT   NSTOP    NINC
     1        1   99900       1

 ELEMENT PRINT AND POST FREQUENCIES
  TYPE  STIFF   STRESS  FORCE        STRESS  STRESS  FORCE
          NO.   PRINT  PRINT         POST    LEVEL   POST
     1     33       1      1            1       3       1
     2     31       1      1            1       3       1


          ***** SPECIFIED TEMPERATURES *****

   NODE       TEMP

     1      1638.00
     2      1638.00
     3      1638.00
     4      1638.00
     5      1638.00


***** LOAD SUMMARY -       5 TEMPERATURES       0 HEAT FLOWS     0 CONVECTIONS      *****


 TIME AT START OF BACK SUBSTITUTION   CP=  5466.597      LOAD STEP=   8  ITERATION=     1  CUM. ITER =  236
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9817   1/ 9/86 CP=    5466.624

 ***** TEMPERATURE  SOLUTION *****      TIME =     2500.0       LOAD STEP=   8  ITERATION=     1  CUM  ITER =  236
     NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP
        1   1621.3               2   1621.3               3   1621.3               4   1621.3               5   1621.3
        6   1339.7               7   1298.1               8   1309.4               9   1310.4              10   1310.5
       11   1310.5

  MAXIMUM TEMPERATURE=  1621.3      AT NODE      5
  MINIMUM TEMPERATURE=  1298.1      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    2500.00        LOAD STEP=    8   ITER =     1   CUM. ITER =  236

 TRANSIENT OPTIMIZATION VALUE =    2.2881      AT NODE      6
*** LOAD STEP     8   ITER      1  COMPLETED.  TIME=    2500.00       TIME INC=    100.000      NEW TRIANG MATRIX  CUM. ITER =  236
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3308

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9822   1/ 9/86 CP=    5469.105

 ***** TEMPERATURE  SOLUTION *****      TIME =     2600.0       LOAD STEP=    9  ITERATION=     7  CUM. ITER. =  239
     NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP
        1   1629.7               2   1629.7               3   1629.7               4   1629.7               5   1629.7
        6   1373.4               7   1334.7               8   1345.8               9   1346.7              10   1346.8
       11   1346.8

  MAXIMUM TEMPERATURE=   1629.7      AT NODE      5
  MINIMUM TEMPERATURE=   1334.7      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    2600.00        LOAD STEP=    9   ITER. =     2   CUM. ITER. =  239

 TRANSIENT OPTIMIZATION VALUE =    2.2916      AT NODE      6
*** LOAD STEP     9   ITER      2  COMPLETED.  TIME=    2600.00       TIME INC=    100.000      NEW TRIANG MATRIX  CUM. ITER. =  239
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9831   1/ 9/86 CP=    5471.906

 ***** TEMPERATURE  SOLUTION *****      TIME =     2700.0       LOAD STEP=    9  ITERATION=     3  CUM. ITER. =  240
     NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP
        1   1638.0               2   1638.0               3   1638.0               4   1638.0               5   1638.0
        6   1404.9               7   1389.1               8   1378.7               9   1380.6              10   1380.9
       11   1380.6

  MAXIMUM TEMPERATURE=   1638.0      AT NODE      5
  MINIMUM TEMPERATURE=   1389.1      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    2700.00        LOAD STEP=    9   ITER. =     3   CUM. ITER. =  240

 TRANSIENT OPTIMIZATION VALUE =    2.1706      AT NODE     11
*** LOAD STEP     9   ITER      3  COMPLETED.  TIME=    2700.00       TIME INC=    100.000      NEW TRIANG MATRIX  CUM. ITER. =  240

*** LOAD STEP   10  OPTIONS SPECIFICATIONS

 NITER=       2  NPRINT=       1  NPOST=       1

 ALL PRINT CONTROLS RESET TO       1

 ALL POST DATA FILE CONTROLS RESET TO       1

 NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS

 NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

 TIME=   3000.0

 ACEL=      .00000       .00000       .00000

 LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC=  0)

 OMEGA=     .00000       .00000       .00000

 DOMEGA=    .00000       .00000       .00000

 CGLOC=     .00000       .00000       .00000

 CGOMGA=    .00000       .00000       .00000

 DCGOME=    .00000       .00000       .00000

 KTEMP=       0       0

 ALL TEMPERATURES SET TO TUNIF=    70.000

 KUSE=    0

 STEADY STATE CONVERGENCE CRITERION=   1.0000
 TRANSIENT OPTIMIZATION CRITERIA=  10.0000
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TEMPERATURE LIMIT=   .00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=     0
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=     0   ISYM=     1

NUMBER OF STRESS PASS CALCULATIONS=      0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000  (TREF=       .000)

SEISMIC COMBINATION TYPE (MCOMB)=    0

DAMPING RATIO =          .0000

BOUNDARY CONDITION PRINT KEY=  0
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9636   1/ 9/86 CP=    5473.522

LOAD STEP NUMBER=    10

          *** LOAD OPTIONS SUMMARY ***

TIME   =  3000.0      (TIME AT END OF LOAD STEP)
NITTER=        2      (NUMBER OF ITERATIONS)
TUNIF  =  70.0000     (UNIFORM TEMPERATURE)    (TREF=       .0000)
KBC    =     0        (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS
                       LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES )

NPRINT=        1      (OVERALL PRINT FREQUENCY)
NPOST =        1      (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
   FREQ    NSTRT   NSTOP    NINC
      1        1   99900       1

 ELEMENT PRINT AND POST FREQUENCIES
   TYPE   STIFF   STRESS  FORCE       STRESS   STRESS  FORCE
           NO     PRINT  PRINT        POST     LEVEL   POST
      1     33       1      1           1        3       1
      2     31       1      1           1        3       1


           ***** SPECIFIED TEMPERATURES *****

    NODE       TEMP

      1      1661.00
      2      1661.00
      3      1661.00
      4      1661.00
      5      1661.00


***** LOAD SUMMARY -       5 TEMPERATURES        0 HEAT FLOWS     0 CONVECTIONS      *****

 TIME AT START OF BACK SUBSTITUTION   CP=  5475.278      LOAD STEP=  10  ITERATION=     1  CUM. ITER =  241
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3308

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9842   1/ 9/85 CP=    5475.360

 ***** TEMPERATURE  SOLUTION *****      TIME =     2850.0       LOAD STEP=  10  ITERATION=      1  CUM. ITER. =  241
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1649.5                2   1649.5                3   1649.5                4   1648.5                5   1649.5
        6   1448.2                7   1416.8                8   1426.6                9   1427.8               10   1427.9
       11   1427.9

  MAXIMUM TEMPERATURE=  1649.5      AT NODE      5
  MINIMUM TEMPERATURE=  1416.8      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    2850.00        LOAD STEP=   10   ITER. =      1   CUM. ITER. =  241

 TRANSIENT OPTIMIZATION VALUE =    5.0601      AT NODE     11
*** LOAD STEP   10   ITER     1  COMPLETED.  TIME=    2850.00       TIME INC=    150.000      NEW TRIANG MATRIX  CUM. ITER. =  241
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9847   1/ 8/85 CP=    5477.740

 ***** TEMPERATURE  SOLUTION *****      TIME =     3000.0       LOAD STEP=  10  ITERATION=      2  CUM. ITER. =  242
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1661.0                2   1661.0                3   1661.0                4   1661.0                5   1661.0
        6   1466.9                7   1459.6                8   1466.8                9   1459.8               10   1459.9
       11   1459.9

  MAXIMUM TEMPERATURE=  1661.0      AT NODE      5
  MINIMUM TEMPERATURE=  1459.6      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    3000.00        LOAD STEP=   10   ITER. =      2   CUM. ITER. =  242

 TRANSIENT OPTIMIZATION VALUE =    4.8500      AT NODE     11
*** LOAD STEP   10   ITER     2  COMPLETED.  TIME=    3000.00       TIME INC=    150.000      NEW TRIANG MATRIX  CUM. ITER. =  242

*** LOAD STEP   11  OPTIONS SPECIFICATIONS

NITTER=       2  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO       1

ALL POST DATA FILE CONTROLS RESET TO       1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS

NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  3300.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0       0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=  1.0000
TRANSIENT OPTIMIZATION CRITERIA= 10.0000
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SARGENT & LUNDY

```
TEMPERATURE LIMIT=   00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=     0
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=     0   ISYM=     1

NUMBER OF STRESS PASS CALCULATIONS=      0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000  (TREF=       .000)

SEISMIC COMBINATION TYPE (MCOMB)=    0

DAMPING RATIO =          .0000

BOUNDARY CONDITION PRINT KEY=  0
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SARGENT & LUNDY

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN 1,1983
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18 8553   1/ 8/83 CP=   5479 T84

LOAD STEP NUMBER=    1

          *** LOAD OPTIONS SUMMARY ***

TIME   =   3300.0       (TIME AT END OF LOAD STEP)
NITER=        2         (NUMBER OF ITERATIONS)
TUNIF  =   70.0000      (UNIFORM TEMPERATURE)    (TREF=       .0000)
KBC    =    0           (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS.
                          LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES.)

NPRINT=       1         (OVERALL PRINT FREQUENCY)
NPOST  =      1         (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
  FREQ    NSTRT   NSTOP    NINC
     1        1   88900       1

 ELEMENT PRINT AND POST FREQUENCIES
  TYPE   STIFF   STRESS   FORCE       STRESS   STRESS   FORCE
          NO.    PRINT   PRINT        POST     LEVEL    POST
     1     33       1       1           1        3        1
     2     31       1       1           1        3        1


           ***** SPECIFIED TEMPERATURES *****

   NODE       TEMP

     1      1681.00
     2      1681.00
     3      1681.00
     4      1681.00
     5      1681.00


***** LOAD SUMMARY -       5 TEMPERATURES       0 HEAT FLOWS    0 CONVECTIONS      *****

 TIME AT START OF BACK SUBSTITUTION   CP=  5481.901       LOAD STEP=   1  ITERATION=     1  CUM  ITER =  243
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3308

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    SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    16.9658    1/ 9/86 CP=    5481.817

 ***** TEMPERATURE  SOLUTION *****      TIME =     3150.0       LOAD STEP=  11  ITERATION=      1  CUM. ITER.=  243
    NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP
       1   1671.0               2   1671.0               3   1671.0               4   1671.0               5   1671.0
       6   1521.4               7   1498.0               8   1505.4               9   1507.4              10   1507.5
      11   1507.5

  MAXIMUM TEMPERATURE=  1671.0      AT NODE      5
  MINIMUM TEMPERATURE=  1498.0      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    3150.00        LOAD STEP=   11   ITER.=      1   CUM. ITER.=  243

 TRANSIENT OPTIMIZATION VALUE =   4.5287      AT NODE     11
*** LOAD STEP    11    ITER      1  COMPLETED.  TIME=    3150.00       TIME INC=    150.000      NEW TRIANG MATRIX  CUM. ITER.=  243
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    16.8667    1/ 9/86 CP=    5484.648

 ***** TEMPERATURE  SOLUTION *****      TIME =     3300.0       LOAD STEP=  11  ITERATION=      2  CUM. ITER.=  244
    NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP
       1   1681.0               2   1681.0               3   1681.0               4   1681.0               5   1681.0
       6   1552.1               7   1532.3               8   1539.8               9   1540.8              10   1540.9
      11   1540.9

  MAXIMUM TEMPERATURE=  1681.0      AT NODE      5
  MINIMUM TEMPERATURE=  1532.3      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    3300.00        LOAD STEP=   11   ITER.=      2   CUM. ITER.=  244

 TRANSIENT OPTIMIZATION VALUE =   4.1681      AT NODE     11
*** LOAD STEP    11    ITER      2  COMPLETED.  TIME=    3300.00       TIME INC=    150.000      NEW TRIANG MATRIX  CUM. ITER.=  244

*** LOAD STEP   12  OPTIONS SPECIFICATIONS

NITTER=       2  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO       1

ALL POST DATA FILE CONTROLS RESET TO       1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  3600.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0       0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=  .1.0000
TRANSIENT OPTIMIZATION CRITERIA=  10.0000
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TEMPERATURE LIMIT=   00000
KEY TO TERMINATE RUN (IF NO CONVERGENCE)=     0
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=     0   (SYM)=     1

NUMBER OF STRESS PASS CALCULATIONS=      0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000  (TREF=       000)

SEISMIC COMBINATION TYPE (MCOMB)=    0

DAMPING RATIO =          .0000

BOUNDARY CONDITION PRINT KEY=  0
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SARGENT · LUNDY

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1        C      SARGENT & LUNDY  JAN 1, 1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-6855

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                        18 9672   1/ 9/83 CP=    5466 933

LOAD STEP NUMBER=    12

          *** LOAD OPTIONS SUMMARY ***

TIME   =  3600.0       (TIME AT END OF LOAD STEP)
NITTER=       2        (NUMBER OF ITERATIONS)
TUNIF  =  70.0000      (UNIFORM TEMPERATURE)    (TREF=       0000)
KBC    =     0         (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS
                          LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES )

NPRINT=       1        (OVERALL PRINT FREQUENCY)
NPOST =       1        (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
  FREQ    NSTRT   NSTOP    NINC
     1        1   99900       1

 ELEMENT PRINT AND POST FREQUENCIES
  TYPE   STIFF   STRESS   FORCE        STRESS   STRESS   FORCE
           NO.    PRINT   PRINT         POST    LEVEL    POST
     1      33        1       1            1        3       1
     2      31        1       1            1        3       1


          ***** SPECIFIED TEMPERATURES *****

   NODE       TEMP

     1      1700.00
     2      1700.00
     3      1700.00
     4      1700.00
     5      1700.00


***** LOAD SUMMARY -       5 TEMPERATURES       0 HEAT FLOWS     0 CONVECTIONS      *****

 TIME AT START OF BACK SUBSTITUTION   CP=  5489 704      LOAD STEP=  12  ITERATION=     1  CUM ITER =  245
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128

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9881    1/ 9/86 CP=    5488.803

 ***** TEMPERATURE  SOLUTION *****      TIME =    3450.0       LOAD STEP=  12  ITERATION=     1  CUM. ITER. =  245
    NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
       1   1690.5             2   1690.5             3   1690.5             4   1690.5             5   1690.5
       6   1579.3             7   1562.7             8   1569.5             9   1570.4            10   1570.4
      11   1570.5

  MAXIMUM TEMPERATURE=  1690.5      AT NODE      6
  MINIMUM TEMPERATURE=  1562.7      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =   3450.00        LOAD STEP=   12   ITER. =     1   CUM. ITER. =  245

 TRANSIENT OPTIMIZATION VALUE =    3.8136     AT NODE      7
*** LOAD STEP   12   ITER     1  COMPLETED.  TIME=   3450.00       TIME INC=   150.000      NEW TRIANG MATRIX  CUM. ITER. =  245
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129

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1      C      SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9889    1/ 9/86 CP=    5492.807

 ***** TEMPERATURE  SOLUTION *****      TIME =    3600.0       LOAD STEP=  12  ITERATION=     2  CUM. ITER. =  246
    NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
       1   1700.0             2   1700.0             3   1700.0             4   1700.0             5   1700.0
       6   1603.5             7   1589.7             8   1595.7             9   1595.5            10   1595.6
      11   1596.6

  MAXIMUM TEMPERATURE=  1700.0      AT NODE      6
  MINIMUM TEMPERATURE=  1589.7      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =   3600.00        LOAD STEP=   12   ITER. =     2   CUM. ITER. =  246

 TRANSIENT OPTIMIZATION VALUE =    3.4156     AT NODE      7
*** LOAD STEP   12   ITER     2  COMPLETED.  TIME=   3600.00       TIME INC=   150.000      NEW TRIANG MATRIX  CUM. ITER. =  246

*** LOAD STEP  13  OPTIONS SPECIFICATIONS

NITTER=      2  NPRINT=      1  NPOST=      1

ALL PRINT CONTROLS RESET TO      1

ALL POST DATA FILE CONTROLS RESET TO      1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  3900.0

ACEL=     .00000       .00000       .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=    .00000       .00000       .00000

DOMEGA=   .00000       .00000       .00000

CGLOC=    .00000       .00000       .00000

CGOMGA=   .00000       .00000       .00000

DCGOME=   .00000       .00000       .00000

KTEMP=      0      0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=   1.0000
TRANSIENT OPTIMIZATION CRITERIA=  10.0000
```

SARGENT & LUNDY

3308

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TEMPERATURE LIMIT=    00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=     0
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=     0   ISYM=     1

NUMBER OF STRESS PASS CALCULATIONS=      0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000  (TREF=       .000)

SEISMIC COMBINATION TYPE (MCOMB4=    0

DAMPING RATIO =          .0000

BOUNDARY CONDITION PRINT KEY=  0
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SARGENT LUNDY

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN 1,1983
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18 9694   1/ 9/86 CP=    5494.782

LOAD STEP NUMBER=    13

          *** LOAD OPTIONS SUMMARY ***

TIME   =   3900.0       (TIME AT END OF LOAD STEP)
NITTER=       3         (NUMBER OF ITERATIONS)
TUNIF  =   70.0000      (UNIFORM TEMPERATURE)    (TREF=       .0000)
KEC    =    0           (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS
                          LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES.)

NPRINT=       1         (OVERALL PRINT FREQUENCY)
NPOST  =      1         (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
   FREQ    NSTRT   NSTOP    NINC
      1        1   99900       1

 ELEMENT PRINT AND POST FREQUENCIES
   TYPE   STIFF   STRESS   FORCE       STRESS   STRESS   FORCE
           NO.    PRINT   PRINT        POST     LEVEL    POST
      1     33       1       1           1        3        1
      2     31       1       1           1        3        1


           ***** SPECIFIED TEMPERATURES *****

    NODE       TEMP

      1      1718.00
      2      1718.00
      3      1718.00
      4      1718.00
      5      1718.00


***** LOAD SUMMARY -       5 TEMPERATURES       0 HEAT FLOWS     0 CONVECTIONS      *****

 TIME AT START OF BACK SUBSTITUTION   CP=  5497.425      LOAD STEP=  13  ITERATION=     1  CUM  ITER =  247
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3308

SARGENT LUNDY

32

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9703   1/ 8/85 CP=    5487.461

 ***** TEMPERATURE  SOLUTION *****      TIME =     3750.0       LOAD STEP=  13  ITERATION=      1  CUM. ITER. =  247
    NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
       1   1709.0             2   1709.0             3   1709.0             4   1709.0             5   1709.0
       6   1625.0             7   1613.7             8   1619.0             9   1613.7            10   1619.8
      11   1619.8

  MAXIMUM TEMPERATURE=   1709.0      AT NODE      5
  MINIMUM TEMPERATURE=   1613.7      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =   3750.00        LOAD STEP=   13   ITER. =      1   CUM. ITER. =  247

 TRANSIENT OPTIMIZATION VALUE =   3.0585      AT NODE      7
*** LOAD STEP   13   ITER      1  COMPLETED.  TIME=    3750.00       TIME INC=    150.000      NEW TRIANG MATRIX  CUM. ITER. =  247
```

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33

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        ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1        C      SARGENT & LUNDY  JAN 1,1983
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9717   1/ 8/85 CP=    5502.647

 ***** TEMPERATURE  SOLUTION *****      TIME =     3900.0       LOAD STEP=  13  ITERATION=      2  CUM. ITER. =  248
    NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
       1   1718.0             2   1718.0             3   1718.0             4   1718.0             5   1718.0
       6   1644.3             7   1635.0             8   1639.7             9   1640.3            10   1640.4
      11   1640.4

  MAXIMUM TEMPERATURE=   1718.0      AT NODE      5
  MINIMUM TEMPERATURE=   1635.0      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =   3900.00        LOAD STEP=   13   ITER. =      2   CUM. ITER. =  248

 TRANSIENT OPTIMIZATION VALUE =   2.8552      AT NODE      7
*** LOAD STEP   13   ITER      2  COMPLETED.  TIME=    3900.00       TIME INC=    150.000      NEW TRIANG MATRIX  CUM. ITER. =  248

*** LOAD STEP   14  OPTIONS SPECIFICATIONS

 NITTER=       2  NPRINT=      1  NPOST=      1

 ALL PRINT CONTROLS RESET TO      1

 ALL POST DATA FILE CONTROLS RESET TO      1

 NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


 NO CONVERGENCE CHECKING ON TIME STEP OPTIMIZATION

 TIME=  4200.0

 ACEL=      .00000        .00000        .00000

 LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

 OMEGA=     .00000        .00000        .00000

 DOMEGA=    .00000        .00000        .00000

 CGLOC=     .00000        .00000        .00000

 CGOMGA=    .00000        .00000        .00000

 DCGOME=    .00000        .00000        .00000

 KTEMP=       0      0

 ALL TEMPERATURES SET TO TUNIF=    70.000

 KUSE=    0

 STEADY STATE CONVERGENCE CRITERION=   1.0000
 TRANSIENT OPTIMIZATION CRITERIA=  10.0000
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SARGENT & LUNDY

TEMPERATURE LIMIT= 00000
KEY TO TERMINATE RUN IF NO CONVERGENCE= 0
ABORT LEVEL KEY= 0

HARMONIC LOAD PARAMETERS KODE= 0 ISYM= 1

NUMBER OF STRESS PASS CALCULATIONS= 0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE= 70.000 (TREF= .000)

SEISMIC COMBINATION TYPE (MCOMB)= 0

DAMPING RATIO = .0000

BOUNDARY CONDITION PRINT KEY= 0

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SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.9725 1/ 9/85 CP= 5505.755

LOAD STEP NUMBER= 14

*** LOAD OPTIONS SUMMARY ***

TIME = 4200.0 (TIME AT END OF LOAD STEP)
NITER= 2 (NUMBER OF ITERATIONS)
TUNIF = 70.0000 (UNIFORM TEMPERATURE) (TREF= .0000)
KBC = 0 (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS.
LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES.)

NPRINT= 1 (OVERALL PRINT FREQUENCY)
NPOST = 1 (OVERALL POST FREQUENCY)

DISPLACEMENT PRINT FREQUENCIES

FREQ	NSTRT	NSTOP	NINC
1	1	99900	1

ELEMENT PRINT AND POST FREQUENCIES

TYPE NO.	STIFF PRINT	STRESS PRINT	FORCE PRINT	STRESS POST	STRESS LEVEL	FORCE POST
1	33	1	1	1	3	1
2	31	1	1	1	3	1

***** SPECIFIED TEMPERATURES *****

NODE	TEMP
1	1735.00
2	1735.00
3	1735.00
4	1735.00
5	1735.00

***** LOAD SUMMARY - 5 TEMPERATURES 0 HEAT FLOWS 0 CONVECTIONS *****

TIME AT START OF BACK SUBSTITUTION CP= 5510.625 LOAD STEP= 14 ITERATION= 1 CUM. ITER.= 248

3308

SARGENT / LUNDY

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY   JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8555

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.8739    1/ 9/86 CP=    5510.654


 ***** TEMPERATURE  SOLUTION *****      TIME =     4050.0       LOAD STEP=   14   ITERATION=      1   CUM. ITER. =   249
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1726.5                2   1726.5                3   1726.5                4   1726.5                5   1726.5
        6   1661.5                7   1654.0                8   1658.1                9   1658.7               10   1658.7
       11   1658.7

  MAXIMUM TEMPERATURE=   1726.5      AT NODE      5
  MINIMUM TEMPERATURE=   1654.0      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    4050.00        LOAD STEP=   14   ITER. =      1   CUM. ITER. =   249

 TRANSIENT OPTIMIZATION VALUE =    2.3272      AT NODE      7
*** LOAD STEP   14   ITER      1  COMPLETED.  TIME=    4050.00       TIME INC=    150.000      NEW TRIANG MATRIX  CUM. ITER. =   249
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SARGENT & LUNDY


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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY   JAN 1,1983
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.8753    1/ 9/86 CP=    5515.921


 ***** TEMPERATURE  SOLUTION *****      TIME =     4200.0       LOAD STEP=   14   ITERATION=      2   CUM. ITER. =   250
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1735.0                2   1735.0                3   1735.0                4   1735.0                5   1735.0
        6   1677.1                7   1671.0                8   1674.6                9   1675.1               10   1675.2
       11   1675.2

  MAXIMUM TEMPERATURE=   1735.0      AT NODE      5
  MINIMUM TEMPERATURE=   1671.0      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    4200.00        LOAD STEP=   14   ITER. =      2   CUM. ITER. =   250

 TRANSIENT OPTIMIZATION VALUE =    1.8757      AT NODE      7
*** LOAD STEP   14   ITER      2  COMPLETED.  TIME=    4200.00       TIME INC=    150.000      NEW TRIANG MATRIX  CUM. ITER. =   250

*** LOAD STEP   15  OPTIONS SPECIFICATIONS

NITTER=       2  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO       1

ALL POST DATA FILE CONTROLS RESET TO       1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  4500.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0       0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=  1.0000
TRANSIENT OPTIMIZATION CRITERIA= 10.0000
```

SARGENT & LUNDY

```
TEMPERATURE LIMIT=   00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=     0.
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=     0   ISYM=     1

NUMBER OF STRESS PASS CALCULATIONS=      0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000  (TREF=       .000)

SEISMIC COMBINATION TYPE (NCOMB)=    0

DAMPING RATIO =         .0000

BOUNDARY CONDITION PRINT KEY=  0
```

SARGENT LUNDY

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1        C      SARGENT & LUNDY  JAN 1, 1983
    SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-6655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.8761   1/ 9/86 CP=    5518.268

LOAD STEP NUMBER=   15

          *** LOAD OPTIONS SUMMARY ***

TIME   =  4500.0      (TIME AT END OF LOAD STEP)
NITTER=      2        (NUMBER OF ITERATIONS)
TUNIF  =  70.0000     (UNIFORM TEMPERATURE)    (TREF=       .0000)
KBC    =  0           (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS.
                        LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES.)

NPRINT=      1        (OVERALL PRINT FREQUENCY)
NPOST  =     1        (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
  FREQ    NSTRT   NSTOP    NINC
     1        1   89900       1

 ELEMENT PRINT AND POST FREQUENCIES
  TYPE   STIFF   STRESS  FORCE       STRESS  STRESS  FORCE
           NO.   PRINT   PRINT        POST    LEVEL   POST
     1     33       1       1           1       3       1
     2     31       1       1           1       3       1


          ***** SPECIFIED TEMPERATURES *****

   NODE       TEMP

     1      1750.00
     2      1750.00
     3      1750.00
     4      1750.00
     5      1750.00


***** LOAD SUMMARY -       5 TEMPERATURES       0 HEAT FLOWS     0 CONVECTIONS      *****

 TIME AT START OF BACK SUBSTITUTION   CP=  5520.532      LOAD STEP=  15  ITERATION=     1  CUM ITER =  251
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3308

SARGENT LUNDY

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     ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C       SARGENT & LUNDY  JAN 1,1983
 SWANSON ANALYSIS SYSTEMS, INC          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-880-8655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                  18.9767   1/ 8/86 CP=    5520.559

 ***** TEMPERATURE  SOLUTION *****      TIME =     4350.0       LOAD STEP=   15   ITERATION=      1  CUM. ITER.=   251
    NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
       1   1742.5             2   1742.5             3   1742.5             4   1742.5             5   1742.5
       6   1691.2             7   1686.2             8   1689.4             9   1689.8            10   1689.9
      11   1689.9

  MAXIMUM TEMPERATURE=  1742.5      AT NODE      5
  MINIMUM TEMPERATURE=  1686.2      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =   4350.00        LOAD STEP=   15   ITER =      1   CUM. ITER.=   251

 TRANSIENT OPTIMIZATION VALUE =    1.7862      AT NODE      7
*** LOAD STEP   15   ITER     1  COMPLETED.  TIME=   4350.00       TIME INC=   150.000      NEW TRIANG MATRIX  CUM. ITER.=   251
```

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     ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C       SARGENT & LUNDY  JAN 1,1983
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                  18.9775   1/ 8/86 CP=    5624.188

 ***** TEMPERATURE  SOLUTION *****      TIME =     4500.0       LOAD STEP=   15   ITERATION=      2  CUM. ITER.=   252
    NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
       1   1750.0             2   1750.0             3   1750.0             4   1750.0             5   1750.0
       6   1703.9             7   1699.9             8   1702.7             9   1703.1            10   1703.1
      11   1703.1

  MAXIMUM TEMPERATURE=  1750.0      AT NODE      5
  MINIMUM TEMPERATURE=  1699.9      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =   4500.00        LOAD STEP=   15   ITER =      2   CUM. ITER.=   252

 TRANSIENT OPTIMIZATION VALUE =    1.5200      AT NODE      7
*** LOAD STEP   15   ITER     2  COMPLETED.  TIME=   4500.00       TIME INC=   150.000      NEW TRIANG MATRIX  CUM. ITER.=   252

*** LOAD STEP  16  OPTIONS SPECIFICATIONS

NITTER=       2  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO       1

ALL POST DATA FILE CONTROLS RESET TO       1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  4800.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0       0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=  1.0000
TRANSIENT OPTIMIZATION CRITERIA=  10.0000
```

SARGENT & LUNDY

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 42
      *
      *
 *
 TEMPERATURE LIMIT=    00000
 KEY TO TERMINATE RUN IF NO CONVERGENCE=      0
 ABORT LEVEL KEY=  0

 HARMONIC LOAD PARAMETERS  MODE=     0   ISYM=     1

 NUMBER OF STRESS PASS CALCULATIONS=       0

 STRAIN ENERGY KEY= 0

 REACTION FORCE KEY= 0

 UNIFORM TEMPERATURE=    70.000  (TREF=       .000)

 SEISMIC COMBINATION TYPE (MCOMB)=    0

 DAMPING RATIO =          .0000

 BOUNDARY CONDITION PRINT KEY=  0
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SARGENT LUNDY

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1        C       SARGENT & LUNDY  JAN 1, 1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-4855

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18 9781   1/ 9/83 CP=    5525.774

 LOAD STEP NUMBER=    18

          *** LOAD OPTIONS SUMMARY ***

 TIME   =   4800.0      (TIME AT END OF LOAD STEP)
 NITTER=       2        (NUMBER OF ITERATIONS)
 TUNIF  =   70.0000     (UNIFORM TEMPERATURE)    (TREF=       .0000)
 KBC    =    0          (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS
                          LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES )

 NPRINT=       1        (OVERALL PRINT FREQUENCY)
 NPOST  =      1        (OVERALL POST FREQUENCY)

  DISPLACEMENT PRINT FREQUENCIES
    FREQ    NSTRT   NSTOP    NINC
       1        1   99999       1

  ELEMENT PRINT AND POST FREQUENCIES
    TYPE   STIFF   STRESS   FORCE        STRESS   STRESS   FORCE
           NO.     PRINT   PRINT         POST     LEVEL    POST
       1     33        1       1            1        3       1
       2     31        1       1            1        3       1


            ***** SPECIFIED TEMPERATURES *****

     NODE        TEMP

       1       1765.00
       2       1765.00
       3       1765.00
       4       1765.00
       5       1765.00


***** LOAD SUMMARY -        5 TEMPERATURES        0 HEAT FLOWS     0 CONVECTIONS      *****

 TIME AT START OF BACK SUBSTITUTION   CP=   5526.850       LOAD STEP=  18  ITERATION=     1  CUM. ITER.=  253
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3308

SARGENT LUNDY

44

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C       SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342    PHONE (412)746-3304  TWX 510-690-8655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9789    1/ 8/83 CP=    5528.868

 ***** TEMPERATURE  SOLUTION *****      TIME =     4650.0       LOAD STEP=   16  ITERATION=      1  CUM. ITER. =  253
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1    1767.5            2    1767.5            3    1767.5            4    1767.5            5    1767.5
        6    1715.6            7    1712.3            8    1714.8            9    1715.1           10    1715.2
       11    1715.2

  MAXIMUM TEMPERATURE=  1767.5      AT NODE      5
  MINIMUM TEMPERATURE=  1712.3      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    4650.00        LOAD STEP=    16   ITER. =      1   CUM. ITER. =  253

 TRANSIENT OPTIMIZATION VALUE =    1.2513      AT NODE      7
*** LOAD STEP    16   ITER      1  COMPLETED.  TIME=    4650.00       TIME INC=    150.000      NEW TRIANG MATRIX  CUM. ITER. =  253
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SARGENT & LUNDY

45

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C       SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342    PHONE (412)746-3304  TWX 510-690-8655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9789    1/ 8/83 CP=    5535.484

 ***** TEMPERATURE  SOLUTION *****      TIME =     4800.0       LOAD STEP=   16  ITERATION=      2  CUM. ITER. =  254
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1    1765.0            2    1765.0            3    1765.0            4    1765.0            5    1765.0
        6    1726.5            7    1723.8            8    1726.0            9    1726.3           10    1726.3
       11    1726.3

  MAXIMUM TEMPERATURE=  1765.0      AT NODE      5
  MINIMUM TEMPERATURE=  1723.8      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    4800.00        LOAD STEP=    16   ITER. =      2   CUM. ITER. =  254

 TRANSIENT OPTIMIZATION VALUE =    1.0115      AT NODE      7
*** LOAD STEP    16   ITER      2  COMPLETED.  TIME=    4800.00       TIME INC=    150.000      NEW TRIANG MATRIX  CUM. ITER. =  254

*** LOAD STEP   17  OPTIONS SPECIFICATIONS

NITTER=       2  NPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1

ALL POST DATA FILE CONTROLS RESET TO      1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=   5100.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0       0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=   1.0000
TRANSIENT OPTIMIZATION CRITERIA=  10.0000
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SARGENT & LUNDY

3108

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TEMPERATURE LIMIT=    00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=     0
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=     0    ISYM=     1

NUMBER OF STRESS PASS CALCULATIONS=      0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70 000  (TREF=       000)

SEISMIC COMBINATION TYPE (MCOMB)=    0

DAMPING RATIO =          .0000

BOUNDARY CONDITION PRINT KEY=  0
```

SARGENT & LUNDY

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN 1,1983
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    '8.9818   1/ 9/88 CP=    5539.585

LOAD STEP NUMBER=    17

          *** LOAD OPTIONS SUMMARY ***

TIME   =  5100.0       (TIME AT END OF LOAD STEP)
NITTER=       2        (NUMBER OF ITERATIONS)
TUNIF  =  70.0000      (UNIFORM TEMPERATURE)    (TREF=       .0000)
KBC    =  0            (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS
                         LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES )

NPRINT=       1        (OVERALL PRINT FREQUENCY)
NPOST =       1        (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
  FREQ    NSTRT   NSTOP    NINC
     1        1   99900       1

 ELEMENT PRINT AND POST FREQUENCIES
  TYPE  STIFF  STRESS  FORCE        STRESS  STRESS  FORCE
          NO.   PRINT  PRINT         POST   LEVEL   POST
     1     33       1      1            1       3      1
     2     31       1      1            1       3      1


          ***** SPECIFIED TEMPERATURES *****

   NODE       TEMP

     1      1779.00
     2      1779.00
     3      1779.00
     4      1779.00
     5      1779.00


***** LOAD SUMMARY =       5 TEMPERATURES       0 HEAT FLOWS     0 CONVECTIONS      *****

 TIME AT START OF BACK SUBSTITUTION   CP=  5545.038      LOAD STEP=  17  ITERATION=     1  CUM  ITER =  255
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3308

SARGENT & LUNDY

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C       SARGENT & LUNDY  JAN 1,1983
    SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9833   1/ 9/83 CP=    5545.082

 ***** TEMPERATURE  SOLUTION *****      TIME =     4950.0       LOAD STEP=  17  ITERATION=      1  CUM. ITER.=  255
     NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP
        1   1772.0               2   1772.0               3   1772.0               4   1772.0               5   1772.0
        6   1736.5               7   1734.3               8   1736.3               9   1736.5              10   1736.6
       11   1736.6

  MAXIMUM TEMPERATURE=  1772.0      AT NODE      5
  MINIMUM TEMPERATURE=  1734.3      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    4950.00        LOAD STEP=   17   ITER.=      1   CUM. ITER.=  255

 TRANSIENT OPTIMIZATION VALUE =     88380      AT NODE      7
*** LOAD STEP    17   ITER      1  COMPLETED   TIME=    4950.00       TIME INC=    150.000      NEW TRIANG MATRIX  CUM. ITER.=  255
```

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C       SARGENT & LUNDY  JAN 1,1983
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9853   1/ 9/83 CP=    5551.358

 ***** TEMPERATURE  SOLUTION *****      TIME =     5100.0       LOAD STEP=  17  ITERATION=      2  CUM. ITER.=  256
     NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP
        1   1779.0               2   1779.0               3   1779.0               4   1779.0               5   1779.0
        6   1746.0               7   1744.2               8   1745.9               9   1746.1              10   1746.2
       11   1746.2

  MAXIMUM TEMPERATURE=  1779.0      AT NODE      5
  MINIMUM TEMPERATURE=  1744.2      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    5100.00        LOAD STEP=   17   ITER.=      2   CUM. ITER.=  256

 TRANSIENT OPTIMIZATION VALUE =     72953      AT NODE      7
*** LOAD STEP    17   ITER      2  COMPLETED   TIME=    5100.00       TIME INC=    150.000      NEW TRIANG MATRIX  CUM. ITER.=  256

*** LOAD STEP   18   OPTIONS SPECIFICATIONS

NITTER=       2  OPRINT=       1  NPOST=       1

ALL PRINT CONTROLS RESET TO       1

ALL POST DATA FILE CONTROLS RESET TO       1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS

NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=   5400.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KE=  0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0       0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=   1.0000
TRANSIENT OPTIMIZATION CRITERIA=  10.0000
```

SARGENT & LUNDY

```
 TEMPERATURE LIMIT=    .00000
 KEY TO TERMINATE RUN IF NO CONVERGENCE=     0.
 ABORT LEVEL KEY=  0

 HARMONIC LOAD PARAMETERS  MODE=     0   (SYM=     )

 NUMBER OF STRESS PASS CALCULATIONS=      0

 STRAIN ENERGY KEY= 0

 REACTION FORCE KEY= 0

 UNIFORM TEMPERATURE=    70.000  (TREF=       .000)

 SEISMIC COMBINATION TYPE (MCOMB)=    0

 DAMPING RATIO =          .0000

 BOUNDARY CONDITION PRINT KEY=  0
```

SARGENT & LUNDY

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1        C      SARGENT & LUNDY  JAN 1,1983
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9861    1/ 9/86 CP=    5554.418

LOAD STEP NUMBER=    18

          *** LOAD OPTIONS SUMMARY ***

TIME   =   5400.0       (TIME AT END OF LOAD STEP)
NITTER=       2         (NUMBER OF ITERATIONS)
TUNIF  =   70.0000      (UNIFORM TEMPERATURE)    (TREF=       .0000)
KBC    =    0           (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS.
                          LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES.)

NPRINT=       1         (OVERALL PRINT FREQUENCY)
NPOST =       1         (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
  FREQ    NSTRT   NSTOP    NINC
     1        1   99999       1

 ELEMENT PRINT AND POST FREQUENCIES
  TYPE   STIFF   STRESS   FORCE      STRESS   STRESS   FORCE
          NO.    PRINT   PRINT       POST    LEVEL    POST
     1      37       1       1          1        3       1
     2      31       1       1          1        3       1


          ***** SPECIFIED TEMPERATURES *****

   NODE       TEMP

     1     1792.00
     2     1792.00
     3     1792.00
     4     1792.00
     5     1792.00


***** LOAD SUMMARY -       5 TEMPERATURES       0 HEAT FLOWS     0 CONVECTIONS      *****

 TIME AT START OF BACK SUBSTITUTION   CP=  5560.250      LOAD STEP=  18  ITERATION=     1  CUM. ITER. =  257
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3308

SARGENT & LUNDY

52

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     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9878   1/ 9/86 CP=    5580.281

 ***** TEMPERATURE  SOLUTION *****      TIME =     5250.0       LOAD STEP=  18  ITERATION=     1  CUM. ITER.=  257
    NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP
       1   1785.5               2   1785.5               3   1785.5               4   1785.5               5   1785.5
       6   1754.8               7   1753.3               8   1754.9               9   1755.1              10   1755.1
      11   1785.1

  MAXIMUM TEMPERATURE=  1785.5      AT NODE      5
  MINIMUM TEMPERATURE=  1753.3      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =   5250.00        LOAD STEP=   18   ITER.=     1   CUM. ITER.=  257

 TRANSIENT OPTIMIZATION VALUE =    .66174     AT NODE      7
*** LOAD STEP   18   ITER      1  COMPLETED.  TIME=   5250.00       TIME INC=   150.000      NEW TRIANG MATRIX  CUM. ITER =  257
```

SARGENT & LUNDY

53

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1      C      SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9887   1/ 9/86 CP=    5588.142

 ***** TEMPERATURE  SOLUTION *****      TIME =     5400.0       LOAD STEP=  18  ITERATION=     2  CUM. ITER.=  258
    NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP
       1   1782.0               2   1782.0               3   1782.0               4   1782.0               5   1782.0
       6   1763.2               7   1761.9               8   1763.4               9   1763.5              10   1763.6
      11   1763.6

  MAXIMUM TEMPERATURE=  1782.0      AT NODE      5
  MINIMUM TEMPERATURE=  1761.9      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =   5400.00        LOAD STEP=   18   ITER.=     2   CUM. ITER.=  258

 TRANSIENT OPTIMIZATION VALUE =    .65140     AT NODE      7
*** LOAD STEP   18   ITER      2  COMPLETED.  TIME=   5400.00       TIME INC=   150.000      NEW TRIANG MATRIX  CUM. ITER =  258

*** LOAD STEP   19   OPTIONS SPECIFICATIONS

AUTTER=       1  NPRINT=      1  NPOST=      1

ALL PRINT CONTROLS RESET TO      1

ALL POST DATA FILE CONTROLS RESET TO      1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  5700.0

ACEL=      .00000       .00000       .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC=  0)

OMEGA=     .00000       .00000       .00000

DOMEGA=    .00000       .00000       .00000

CGLOC=     .00000       .00000       .00000

CGOMGA=    .00000       .00000       .00000

DCGOME=    .00000       .00000       .00000

KTEMP=       0      0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=   1.0000
TRANSIENT OPTIMIZATION CRITERIA=  10.0000
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SARGENT & LUNDY

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 TEMPERATURE LIMIT=    .00000
 KEY TO TERMINATE RUN IF NO CONVERGENCE=     0
 ABORT LEVEL KEY=  0

 HARMONIC LOAD PARAMETERS  MODE=     0   ISYM=     1

 NUMBER OF STRESS PASS CALCULATIONS=      0

 STRAIN ENERGY KEY= 0

 REACTION FORCE KEY= 0

 UNIFORM TEMPERATURE=    70.000  (TREF=       .000)

 SEISMIC COMBINATION TYPE (MCOMB)=    0

 DAMPING RATIO =          .0000

 BOUNDARY CONDITION PRINT KEY=  0
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SARGENT & LUNDY

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-6655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18 9908   1/ 9/83 CP=    5571.865

LOAD STEP NUMBER=    19

         *** LOAD OPTIONS SUMMARY ***

TIME   =   5700.0       (TIME AT END OF LOAD STEP)
NITTER=       1         (NUMBER OF ITERATIONS)
TUNIF  =   70.0000      (UNIFORM TEMPERATURE)    (TREF=       .0000)

NPRINT=       1         (OVERALL PRINT FREQUENCY)
NPOST  =      1         (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
  FREQ    NSTRT   NSTOP    NINC
     1        1   99999       1

 ELEMENT PRINT AND POST FREQUENCIES
  TYPE  STIFF   STRESS  FORCE       STRESS  STRESS  FORCE
          NO.    PRINT  PRINT       POST    LEVEL   POST
     1     33        1      1          1       3      1
     2     31        1      1          1       3      1


          ***** SPECIFIED TEMPERATURES *****

   NODE       TEMP

     1      1804.00
     2      1804.00
     3      1804.00
     4      1804.00
     5      1804.00


***** LOAD SUMMARY -       5 TEMPERATURES        0 HEAT FLOWS     0 CONVECTIONS      *****

 TIME AT START OF BACK SUBSTITUTION   CP=  5576.864      LOAD STEP=  19  ITERATION=     1  CUM. ITER.=  259
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3308

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9822   1/ 9/86 CP=    5576.862

 ***** TEMPERATURE  SOLUTION *****      TIME =     5700.0       LOAD STEP=   18  ITERATION=      1  CUM. ITER.=   259
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1   1804.0             2   1804.0             3   1804.0             4   1804.0             5   1805.0
        6   1778.5             7   1777.7             8   1778.8             9   1778.0            10   1778.0
       11   1778.1

  MAXIMUM TEMPERATURE=   1804.0      AT NODE      5
  MINIMUM TEMPERATURE=   1777.7      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    5700.00        LOAD STEP=    18   ITER.=      1   CUM. ITER.=   259

  TRANSIENT OPTIMIZATION VALUE =    1.9423      AT NODE      7
*** LOAD STEP    18    ITER      1  COMPLETED.   TIME=    5700.00       TIME INC=    300.000      NEW TRIANG MATRIX  CUM. ITER.=   259

*** LOAD STEP   20  OPTIONS SPECIFICATIONS

NITTER=       1  NPRINT=      1  NPOST=      1

ALL PRINT CONTROLS RESET TO      1

ALL POST DATA FILE CONTROLS RESET TO      1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  6000.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC=  0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0      0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=   1.0000
TRANSIENT OPTIMIZATION CRITERIA=  10.0000
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SARGENT & LUNDY

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TEMPERATURE LIMIT=    .00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=      0.
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=      0   ISYM=      1

NUMBER OF STRESS PASS CALCULATIONS=       0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000  (TREF=       .000)

SEISMIC COMBINATION TYPE (MCOMB)=    0

DAMPING RATIO =          .0000

BOUNDARY CONDITION PRINT KEY=  0
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9931   1/ 9/86 CP=    5579.860

 LOAD STEP NUMBER=    20

          *** LOAD OPTIONS SUMMARY ***

 TIME   =   6000.0       (TIME AT END OF LOAD STEP)
 NITTER=       1         (NUMBER OF ITERATIONS)
 TUNIF  =   70.0000      (UNIFORM TEMPERATURE)    (TREF=      .0000)

 NPRINT=       1         (OVERALL PRINT FREQUENCY)
 NPOST  =      1         (OVERALL POST FREQUENCY)

  DISPLACEMENT PRINT FREQUENCIES
   FREQ    NSTRT   NSTOP    NINC
      1        1   99900       1

  ELEMENT PRINT AND POST FREQUENCIES
   TYPE  STIFF   STRESS  FORCE       STRESS  STRESS  FORCE
           NO.    PRINT  PRINT        POST   LEVEL   POST
     1     33        1      1           1      3       1
     2     31        1      1           1      3       1


            ***** SPECIFIED TEMPERATURES *****

    NODE       TEMP

      1      1815.00
      2      1815.00
      3      1815.00
      4      1815.00
      5      1815.00


***** LOAD SUMMARY -       5 TEMPERATURES        0 HEAT FLOWS     0 CONVECTIONS      *****


 TIME AT START OF BACK SUBSTITUTION   CP=   5587.606      LOAD STEP=  20  ITERATION=      1  CUM. ITER. =  260
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SARGENT LUNDY

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9853   1/ 9/86 CP=    5587.734

 ***** TEMPERATURE  SOLUTION *****      TIME =    6000.0       LOAD STEP=  20  ITERATION=      1  CUM. ITER. =  260
     NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP
       1   1815.0            2   1815.0            3   1815.0            4   1815.0            5   1815.0
       6   1792.5            7   1791.8            8   1792.6            9   1792.9           10   1792.9
      11   1792.8

  MAXIMUM TEMPERATURE=  1815.0      AT NODE      5
  MINIMUM TEMPERATURE=  1791.8      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    6000.00        LOAD STEP=   20   ITER.=      1   CUM. ITER.=  260

 TRANSIENT OPTIMIZATION VALUE =    1.8885      AT NODE      7
*** LOAD STEP   20   ITER      1  COMPLETED.   TIME=    6000.00       TIME INC=    300.000      NEW TRIANG MATRIX  CUM. ITER.=  260

*** LOAD STEP   21   OPTIONS SPECIFICATIONS

NITTER=       1  NPRINT=      1  NPOST=      1

ALL PRINT CONTROLS RESET TO      1

ALL POST DATA FILE CONTROLS RESET TO      1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=   6300.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0      0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=   1.0000
TRANSIENT OPTIMIZATION CRITERIA=  10.0000
```

SARGENT LUNDY

TEMPERATURE LIMIT= 00000
KEY TO TERMINATE RUN IF NO CONVERGENCE= 0
ABORT LEVEL KEY= 0

HARMONIC LOAD PARAMETERS MODE= 0 ISYM= 1

NUMBER OF STRESS PASS CALCULATIONS= 0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE= 70.000 (TREF= .000)

SEISMIC COMBINATION TYPE (MCOMB)= 0

DAMPING RATIO = .0000

BOUNDARY CONDITION PRINT KEY= 0

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SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8855

DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 18.8881 1/ 8/85 CP= 5590.942

LOAD STEP NUMBER= 21

*** LOAD OPTIONS SUMMARY ***

TIME = 6300.0 (TIME AT END OF LOAD STEP)
NITTER= 1 (NUMBER OF ITERATIONS)
TUNIF = 70.0000 (UNIFORM TEMPERATURE) (TREF= .0000)

NPRINT= 1 (OVERALL PRINT FREQUENCY)
NPOST = 1 (OVERALL POST FREQUENCY)

DISPLACEMENT PRINT FREQUENCIES

FREQ	NSTAT	NSTOP	NINC
1	1	99900	1

ELEMENT PRINT AND POST FREQUENCIES

TYPE	STIFF NO.	STRESS PRINT	FORCE PRINT	STRESS POST	STRESS LEVEL	FORCE POST
1	33	1	1	1	3	1
2	31	1	1	1	3	1

***** SPECIFIED TEMPERATURES *****

NODE	TEMP
1	1826.00
2	1826.00
3	1826.00
4	1826.00
5	1826.00

***** LOAD SUMMARY - 5 TEMPERATURES 0 HEAT FLOWS 0 CONVECTIONS *****

TIME AT START OF BACK SUBSTITUTION CP= 5596.448 LOAD STEP= 21 ITERATION= 1 CUM. ITER.= 281

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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.9978    I/ 9/85 CP=    5596.459

 ***** TEMPERATURE  SOLUTION *****      TIME =     6300.0       LOAD STEP=  21  ITERATION=      1  CUM. ITER.=  261
     NODE    TEMP            NODE    TEMP            NODE    TEMP            NODE    TEMP            NODE    TEMP
        1   1826.0             2   1826.0             3   1826.0             4   1826.0             5   1826.0
        6   1805.2             7   1804.7             8   1805.6             9   1805.7            10   1805.7
       11   1805.7

  MAXIMUM TEMPERATURE=  1826.0      AT NODE      5
  MINIMUM TEMPERATURE=  1804.7      AT NODE      7


  ***** ELEMENT HEAT FLOW RATES *****  TIME =    6300.00        LOAD STEP=   21   ITER.=      1   CUM. ITER.=  261

 TRANSIENT OPTIMIZATION VALUE =    1.1598      AT NODE      7
*** LOAD STEP   21   ITER      1  COMPLETED.  TIME=    6300.00       TIME INC=    300.000      NEW TRIANG MATRIX  CUM  ITER.=  261

*** LOAD STEP  22  OPTIONS SPECIFICATIONS

NITTER=       1  NPRINT=      1  NPOST=      1

ALL PRINT CONTROLS RESET TO      1

ALL POST DATA FILE CONTROLS RESET TO      1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  6600.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0      0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=   1.0000
TRANSIENT OPTIMIZATION CRITERIA=  10.0000
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SARGENT & LUNDY

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TEMPERATURE LIMIT=    .00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=      0
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=      0   ISYM=      1

NUMBER OF STRESS PASS CALCULATIONS=       0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000  (TREF=       .000)

SEISMIC COMBINATION TYPE (MCOMB)=    0

DAMPING RATIO =           .0000

BOUNDARY CONDITION PRINT KEY=  0
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                          18.9963    1/ 9/86 CP=    5599.084


LOAD STEP NUMBER=    22

          *** LOAD OPTIONS SUMMARY ***

TIME   =   6600.0      (TIME AT END OF LOAD STEP)
NITTER=       1        (NUMBER OF ITERATIONS)
TUNIF  =   70.0000     (UNIFORM TEMPERATURE)    (TREF=      .0000)

NPRINT=       1        (OVERALL PRINT FREQUENCY)
NPOST  =      1        (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
  FREQ    NSTRT   NSTOP    NINC
     1        1   99999       1

 ELEMENT PRINT AND POST FREQUENCIES
  TYPE   STIFF   STRESS   FORCE        STRESS   STRESS   FORCE
           NO    PRINT   PRINT         POST     LEVEL    POST
     1      33       1       1            1        3       1
     2      31       1       1            1        3       1


           ***** SPECIFIED TEMPERATURES *****

   NODE        TEMP

     1      1835.00
     2      1835.00
     3      1835.00
     4      1835.00
     5      1835.00


***** LOAD SUMMARY -       5 TEMPERATURES        0 HEAT FLOWS     0 CONVECTIONS      *****


 TIME AT START OF BACK SUBSTITUTION    CP=   5603.080       LOAD STEP=   22  ITERATION=      1  CUM. ITER.=   262
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SARGENT & LUNDY

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C       SARGENT & LUNDY  JAN 1,1983
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                          18.9994    1/ 9/86 CP=    5603.144


 ***** TEMPERATURE  SOLUTION *****      TIME =     6600.0       LOAD STEP=   22  ITERATION=      1  CUM  ITER.=   262
     NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP              NODE     TEMP
        1   1835.0                2   1835.0                3   1835.0                4   1835.0                5   1835.0
        6   1816.8                7   1818.3                8   1817.1                9   1817.2               10   1817.2
       11   1817.2

  MAXIMUM TEMPERATURE=   1835.0      AT NODE      5
  MINIMUM TEMPERATURE=   1818.3      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    6600.00        LOAD STEP=    22   ITER.=      1   CUM. ITER.=   262

 TRANSIENT OPTIMIZATION VALUE =    2.0000      AT NODE      1
*** LOAD STEP    22    ITER      1  COMPLETED.  TIME=    6600.00       TIME INC=    300.000      NEW TRIANG MATRIX  CUM. ITER.=   262

*** LOAD STEP  23  OPTIONS SPECIFICATIONS

NITTER=       1  NPRINT=      1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1

ALL POST DATA FILE CONTROLS RESET TO      1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  6900.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC=  0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0      0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=   1.0000
TRANSIENT OPTIMIZATION CRITERIA=  10.0000
```

SARGENT & LUNDY

TEMPERATURE LIMIT= 00000
KEY TO TERMINATE RUN IF NO CONVERGENCE= 0
ABORT LEVEL KEY= 0

HARMONIC LOAD PARAMETERS MODE= 0 ISYM= 1

NUMBER OF STRESS PASS CALCULATIONS= 0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE= 70.000 (TREF= .000)

SEISMIC COMBINATION TYPE (MCOMB)= 0

DAMPING RATIO = .0000

BOUNDARY CONDITION PRINT KEY= 0

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SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-650-8855

DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS 19.0008 1/ 9/86 CP= 5607.684

LOAD STEP NUMBER= 23

*** LOAD OPTIONS SUMMARY ***

TIME = 6900.0 (TIME AT END OF LOAD STEP)
NITTER= 1 (NUMBER OF ITERATIONS)
TUNIF = 70.0000 (UNIFORM TEMPERATURE) (TREF= .0000)

NPRINT= 1 (OVERALL PRINT FREQUENCY)
NPOST = 1 (OVERALL POST FREQUENCY)

DISPLACEMENT PRINT FREQUENCIES

FREQ	NSTRT	NSTOP	NINC
1	1	99900	1

ELEMENT PRINT AND POST FREQUENCIES

TYPE	STIFF NO.	STRESS PRINT	FORCE PRINT	STRESS POST	STRESS LEVEL	FORCE POST
1	33	1	1	1	3	1
2	31	1	1	1	3	1

***** SPECIFIED TEMPERATURES *****

NODE	TEMP
1	1843.00
2	1843.00
3	1843.00
4	1843.00
5	1842.00

***** LOAD SUMMARY - 5 TEMPERATURES 0 HEAT FLOWS 0 CONVECTIONS *****

TIME AT START OF BACK SUBSTITUTION CP= 5620.372 LOAD STEP= 23 ITERATION= 1 CUM. ITER = 283

3308

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     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8656

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.0044   1/ 9/85 CP=    5620.400

 ***** TEMPERATURE  SOLUTION *****     TIME =     6900.0      LOAD STEP=   23  ITERATION=      1  CUM. ITER.=  283
     NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP            NODE     TEMP
        1   1843.0               2   1843.0               3   1843.0               4   1843.0               5   1843.0
        6   1827.0               7   1826.7               8   1827.4               9   1827.5              10   1827.5
       11   1827.5

  MAXIMUM TEMPERATURE=   1843.0      AT NODE      5
  MINIMUM TEMPERATURE=   1826.7      AT NODE      7


 ***** ELEMENT HEAT FLOW RATES *****  TIME =    6900.00        LOAD STEP=    23   ITER.=      1   CUM. ITER.=  283

 TRANSIENT OPTIMIZATION VALUE =    1.2690      AT NODE      7
*** LOAD STEP    23   ITER      1  COMPLETED.  TIME=    6900.00       TIME INC=    300.000      NEW TRIANG MATRIX  CUM. ITER.=  283

*** LOAD STEP   24  OPTIONS SPECIFICATIONS

NITER=       1  NPRINT=      1  NPOST=      1

ALL PRINT CONTROLS RESET TO      1

ALL POST DATA FILE CONTROLS RESET TO      1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS


NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  7200.0

ACEL=      .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=     .00000        .00000        .00000

DOMEGA=    .00000        .00000        .00000

CGLOC=     .00000        .00000        .00000

CGOMGA=    .00000        .00000        .00000

DCGOME=    .00000        .00000        .00000

KTEMP=       0      0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=  1.0000
TRANSIENT OPTIMIZATION CRITERIA= 10.0000
```

SARGENT LUNDY

```
TEMPERATURE LIMIT=    .00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=     0.
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=     0   ISYM=     1

NUMBER OF STRESS PASS CALCULATIONS=      0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000  (TREF=      .000)

SEISMIC COMBINATION TYPE (MCOMB)=    0

DAMPING RATIO =         .0000

BOUNDARY CONDITION PRINT KEY=  0
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SARGENT LUNDY

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        ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                  19.0053   1/ 9/86 CP=    5623.299

 LOAD STEP NUMBER=   24

          *** LOAD OPTIONS SUMMARY ***

 TIME  =  7200.0      (TIME AT END OF LOAD STEP)
 NITTER=     1        (NUMBER OF ITERATIONS)
 TUNIF =  70.0000     (UNIFORM TEMPERATURE)   (TREF=     .0000)

 NPRINT=     1        (OVERALL PRINT FREQUENCY)
 NPOST =     1        (OVERALL POST FREQUENCY)

  DISPLACEMENT PRINT FREQUENCIES
   FREQ    NSTRT  NSTOP   NINC
      1        1  99999      1

  ELEMENT PRINT AND POST FREQUENCIES
   TYPE  STIFF  STRESS  FORCE       STRESS  STRESS  FORCE
           NO    PRINT  PRINT       POST    LEVEL   POST
      1    33       1      1          1       3       1
      2    31       1      1          1       3       1


           ***** SPECIFIED TEMPERATURES *****

    NODE       TEMP

       1     1850.00
       2     1850.00
       3     1850.00
       4     1850.00
       5     1850.00


 ***** LOAD SUMMARY -       5 TEMPERATURES        0 HEAT FLOWS     0 CONVECTIONS      *****

  TIME AT START OF BACK SUBSTITUTION   CP=  5627.845      LOAD STEP=  24  ITERATION=     1  CUM. ITER.=  264
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SARGENT LUNDY

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        ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN 1,1983
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 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                  19.0064   1/ 9/86 CP=    5627.871

 ***** TEMPERATURE  SOLUTION *****      TIME =    7200.0       LOAD STEP=  24  ITERATION=     1  CUM. ITER.=  264
     NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP          NODE    TEMP
        1   1850.0            2   1850.0            3   1850.0            4   1850.0            5   1850.0
        6   1838.1            7   1835.8            8   1836.5            9   1836.5           10   1836.5
       11   1836.5

  MAXIMUM TEMPERATURE=  1850.0      AT NODE      5
  MINIMUM TEMPERATURE=  1835.8      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    7200.00        LOAD STEP=   24   ITER.=     1   CUM. ITER.=  264

 TRANSIENT OPTIMIZATION VALUE =    1.2104      AT NODE      7
*** LOAD STEP   24   ITER     1  COMPLETED.  TIME=    7200.00       TIME INC=    300.000      NEW TRIANG MATRIX  CUM. ITER.=  264

*** LOAD STEP   25  OPTIONS SPECIFICATIONS

NITTER=      2  NPRINT=      1  NPOST=      1

ALL PRINT CONTROLS RESET TO      1

ALL POST DATA FILE CONTROLS RESET TO      1

NEW TITLE=  DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS

NO CONVERGENCE CHECKING OR TIME STEP OPTIMIZATION

TIME=  7800.0

ACEL=     .00000        .00000        .00000

LOADS RAMPED TO FINAL VALUES DURING ITERATIONS (KBC= 0)

OMEGA=    .00000        .00000        .00000

DOMEGA=   .00000        .00000        .00000

CGLOC=    .00000        .00000        .00000

CGOMGA=   .00000        .00000        .00000

DCGOME=   .00000        .00000        .00000

KTEMP=       0      0

ALL TEMPERATURES SET TO TUNIF=    70.000

KUSE=    0

STEADY STATE CONVERGENCE CRITERION=  1.0000
TRANSIENT OPTIMIZATION CRITERIA= 10.0000
```

SARGENT LUNDY

3108

```
TEMPERATURE LIMIT=    00000
KEY TO TERMINATE RUN IF NO CONVERGENCE=     0
ABORT LEVEL KEY=  0

HARMONIC LOAD PARAMETERS  MODE=     0    ISYM=     1

NUMBER OF STRESS PASS CALCULATIONS=      0

STRAIN ENERGY KEY= 0

REACTION FORCE KEY= 0

UNIFORM TEMPERATURE=    70.000  (TREF=       000)

SEISMIC COMBINATION TYPE (MCOMB)=    0

DAMPING RATIO =          .0000

BOUNDARY CONDITION PRINT KEY=  0
```

SARGENT & LUNDY


```
          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN  7,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-660-6656

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.0072   1/ 9/83 CP=    5630.851

LOAD STEP NUMBER=    25

          *** LOAD OPTIONS SUMMARY ***

TIME   =   7800.0       (TIME AT END OF LOAD STEP)
NITTER=       2         (NUMBER OF ITERATIONS)
TUNIF  =   70.0000      (UNIFORM TEMPERATURE)    (TREF=      .0000)
KBC    =    0           (LOADS RAMPED TO FINAL VALUES DURING ITERATIONS
                          LOADS RAMPED FROM PREVIOUS LOAD STEP VALUES.)

NPRINT=       1         (OVERALL PRINT FREQUENCY)
NPOST  =      1         (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
   FREQ    NSTRT   NSTOP    NINC
      1        1   99900       1

 ELEMENT PRINT AND POST FREQUENCIES
   TYPE   STIFF   STRESS   FORCE       STRESS   STRESS   FORCE
           NO.    PRINT   PRINT        POST     LEVEL    POST
      1     33       1       1           1        3        1
      2     31       1       1           1        3        1


          ***** SPECIFIED TEMPERATURES *****

   NODE       TEMP

      1     1862.00
      2     1862.00
      3     1862.00
      4     1862.00
      5     1862.00


***** LOAD SUMMARY -       5 TEMPERATURES        0 HEAT FLOWS     0 CONVECTIONS      *****

 TIME AT START OF BACK SUBSTITUTION   CP=  5633.446      LOAD STEP=  25  ITERATION=      1  CUM. ITER.=  285
```

SARGENT & LUNDY

```
         ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.0081    1/ 9/86 CP=    5633.473

 ***** TEMPERATURE  SOLUTION *****      TIME =     7500.0       LOAD STEP=   25  ITERATION=      1  CUM. ITER. =   265
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1    1856.0             2    1856.0             3    1856.0             4    1856.0             5    1856.0
        6    1844.1             7    1843.8             8    1844.4             9    1844.4            10    1844.4
       11    1844.4

  MAXIMUM TEMPERATURE=   1856.0      AT NODE      5
  MINIMUM TEMPERATURE=   1843.8      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    7500.00        LOAD STEP=   25   ITER. =      1   CUM. ITER. =   265

 TRANSIENT OPTIMIZATION VALUE =    1.1548      AT NODE      7
*** LOAD STEP    25   ITER      1  COMPLETED.  TIME=    7500.00       TIME INC=    300.000      NEW TRIANG MATRIX  CUM. ITER. =   265
```

SARGENT & LUNDY

```
         ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                    18.0128    1/ 9/86 CP=    5650.262

 ***** TEMPERATURE  SOLUTION *****      TIME =     7800.0       LOAD STEP=   25  ITERATION=      2  CUM. ITER. =   266
     NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP          NODE     TEMP
        1    1862.0             2    1862.0             3    1862.0             4    1862.0             5    1862.0
        6    1851.2             7    1851.0             8    1851.5             9    1851.5            10    1851.5
       11    1851.5

  MAXIMUM TEMPERATURE=   1862.0      AT NODE      5
  MINIMUM TEMPERATURE=   1851.0      AT NODE      7

 ***** ELEMENT HEAT FLOW RATES *****  TIME =    7800.00        LOAD STEP=   25   ITER. =      2   CUM. ITER. =   266

 TRANSIENT OPTIMIZATION VALUE =    .82212      AT NODE      7
*** LOAD STEP    25   ITER      2  COMPLETED.  TIME=    7800.00       TIME INC=    300.000      NEW TRIANG MATRIX  CUM. ITER. =   266

 END OF INPUT ENCOUNTERED ON FILE27

 ***** INPUT FILE SWITCHED FROM FILE27 TO FILE18
```

SARGENT & LUNDY

3308

```
        ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1      C      SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 DAMPER PENETRATION FRAME FOR THERMAL ANALYSIS                                  19.0192   1/ 9/86 CP=    5874.024

          ***** ANSYS RUN TIME ESTIMATOR *****


***** ANSYS RUN TIME ESTIMATOR *****

COMPUTER = UNIVAC 1100              NUMBER OF MASTER DOF =    0
ANALYSIS TYPE = -1                  RMS WAVE FRONT =     4
NUMBER OF NODES =       8           TOTAL NO. OF ITERATIONS =       1
MAX. DOF PER NODE =   1             STIFF. MATRIX SAVE KEY = 0
NUMBER OF MATRICES = 1              ELEM. MATRIX SAVE KEY = 0
NUMBER OF STRESS SOLUTIONS=     1   ROTATED NODE FRACTION=   .000

  STIF  NUMBER    FORM. TIME  STRESS TIME    NAME
    31       6          .018          .009   RADIATION LINK
    33      10          .019          .008   CONDUCTING BAR, 3-D


  ANALYSIS PHASE          FIRST      SUBSEQUENT
                        ITERATION    ITERATIONS       TOTAL

ELEMENT FORMULATION           .05           .05          .05
WAVE FRONT SOLUTION           .00           .00          .00
BACK SUBSTITUTION             .00           .00          .00
ELEMENT STRESSES              .02           .02          .02

    TOTAL TIME (SEC)          .08           .08          .08


***** ROUTINE COMPLETED *****  CP =       5874.108

END OF INPUT ENCOUNTERED ON FILE18


***** RUN COMPLETED *****  CP=      5874.2400    TIME=    19.0184

@PMD,LEAP
PMD NOT ALLOWED
```

SARGENT & LUNDY

```
@SLXOT  OPSS*O85ABSOLUTES.ANSO85185410/PLOT33
SLXOT 2.2 SL75R1 01/09/86 19:01:10



                PROGRAM ID ANSO85185410                                 PROGRAM FILE DATE FEBRUARY 1, 1984 21:41:38

                RUN ID     SJH86                                        DIVISION STATION ID  CL1453800

                      *****     PROGRAM USED IS VALIDATED ACCORDING TO QDP 4-1     *****
                                  AND EXECUTED FROM CSD CONTROLLED FILES
```

SARGENT & LUNDY

```
@PLOT     OPSS*OSSABSOLUTES.ANSOBS185410/PLOT33
***** NO PLOT GENERATED *****
***** END OF PLOT33 *****

@PMD,LEAP
PMD NOT ALLOWED

@FIN
```

SARGENT & LUNDY

SARGENT & LUNDY

3308

```
CONSOLE MESSAGES :
SITE IDENTIFIER: S&L-D      SYSTEM TYPE: 1100/90
S & L  PROGRAM NUMBER:  ANS0851854 10
*** PROGRAM ANS0851854 10 IS VALIDATED ACCORDING TO GSP 4-1 ***
ROT - SYS$          * OPS$          - ANS0851854 10 /              HAD       0 OVRFLW,      0 UNDFLW,      0 DIVFLT,      0 O/0 FLT
*** PROGRAM ANS0851854 10/PLOT33 IS VALIDATED ACCORDING TO GSP 4-1 ***
ROT - OPS$          * 09SABSOLUTES - ANS0851854 10 / PLOT33        HAD       0 OVRFLW,      0 UNDFLW,      0 DIVFLT,      0 O/0 FLT
      $JOB$  FIN
```

SARGENT & LUNDY

```
**********************************************************************  **********************************
*                                                                    * *  *                                *
* SSSSSSS   UU     UU  LL        LL        EEEEEEEE  TTTTTTTT  II  NN      NN    * *                                *
* SSSSSSSS  UU     UU  LL        LL        EEEEEEEE  TTTTTTTT  II  NNN     NN    * *                                *
* SS     SS UU     UU  LL        LL        EE           TT     II  NNNN    NN    * *  FOR EVERY PROBLEM THERE        *
* SS     SS UU     UU  LL        LL        EE           TT     II  NNNNN   NN    * *  IS ONE SOLUTION WHICH IS      *
* SSSSSSS   UU     UU  LL        LL        EEEEEEE      TT     II  NN NNN  NN    * *  SIMPLE, NEAT AND WRONG.       *
* SSSSSSS   UU     UU  LL        LL        EEEEEEE      TT     II  NN  NNN NN    * *                                *
* SS     SS UU     UU  LL        LL        EE           TT     II  NN   NNNNN    * *                                *
* SS     SS UU     UU  LL        LL        EE           TT     II  NN    NNNN    * *  H. L. MENCKEN                 *
* SSSSSSSS  UUUUUUUUU LLLLLLLLL LLLLLLLLL EEEEEEEE     TT     II  NN     NNN    * *                                *
* SSSSSSS    UUUUUU   LLLLLLLLL LLLLLLLLL EEEEEEEE     TT     II  NN      NN    * *                                *
*                                                                    * *                                *
**********************************************************************  **********************************

**********************************************************************************************************************
*                                                                                                                    *
*                                                                                                                    *
*                                                 *****HAPPY NEW YEAR *****                                          *
*                                                                                                                    *
*                                                 ***ATTENTION ALL USERS***                                          *
*                                                                                                                    *
*          A MALFUNCTIONING 8470 DISK DRIVE WAS REMOVED ON THURS. DEC 26, 1985.  DUE TO OUR RECOVERY PROGRAM NO DAMAGE *
*          SHOULD HAVE OCCURRED TO YOUR FILES.  BUT IF YOU HAVE ANY DOUBTS YOU SHOULD VALIDATE THE INTEGRITY OF YOUR  *
*          FILES.  ANY QUESTIONS SHOULD BE DIRECTED TO THE FILE ADMINISTRATOR AT EXT. 3618.                          *
*                                                                                                                    *
*                                              ***COMPUTER SOFTWARE LIBRARY NOTICE***                                *
*                                                                                                                    *
*          ALL 1985 ANNUAL NUMBERS WILL EXPIRE ON THE LATEST COMPLETION DATE.                                        *
*          ALL 1985 SPECIAL TASK NUMBERS WILL EXPIRE ON THEIR COMPLETION DATE.                                       *
*          ALL 1986 TASK NUMBERS WILL BE EFFECTIVE JANUARY 02, 1986                                                  *
*                                                                                                                    *
*                                                                                                                    *
*                                                                                                                    *
*                                                                                                                    *
*                                                                                                                    *
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*                                                                                                                    *
*                                                                                                                    *
*                                                                                                                    *
*                                                                                                                    *
*                                                                                                                    *
*                                                                                                                    *
*          DAG                          DEC 30, 1985          08:00       1100/90 OAKBROOK SYSTEM                  *
*                                                                                                                    *
*                                                                                                                    *
**********************************************************************************************************************
```

SARGENT & LUNDY

SARGENT & LUNDY ENGINEERS
CHICAGO, ILLINOIS

PEAK-MEM 178178 AVERAGE-MEM 164352

** RUN TIME SUMMARY IN SUPS **

RUNID: JH88 ACCT: 215 PROJECT: CLI453800

TIME: TOTAL: 00:17:04.391 CBSUPS: 18432868378

CPU: 00:00:35.832 I/O: 00:12:43.656

CC/ER: 00:03:44.883 WAIT: 00:00:00.000

IMAGES READ: 322 PAGES: 178

START: 17:25:57 JAN 08,1986 FIN: 19:01:15 JAN 08,1986

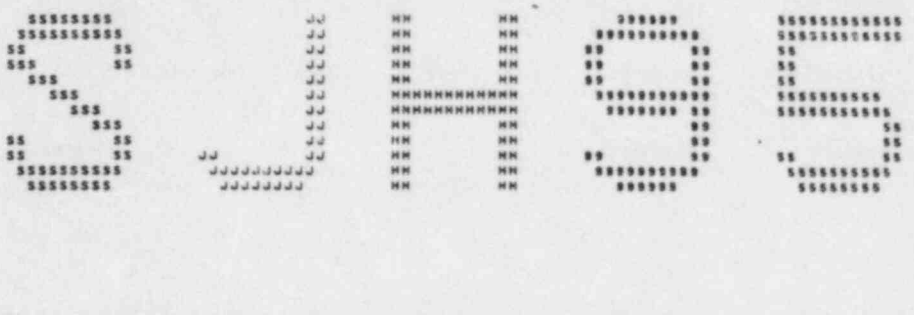
SARGENT LUNDY

SARGENT LUNDY

Uniform Heat - 150°

2

1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890**SEQ NO. 00



* * * * * * UNIVAC 1100 TIME/SHARING EXEC --- MULTI-PROCESSOR SYSTEM --- LEV. 38R3A SITE * ES&L-B* * * * * *

RUNID = SJH95 USER ID = OE8181 PART NUMBER = INPUT DEVICE = ****** OUTPUT DEVICE = XEROX1

FILL NAME = RSIS-SJH95 011588134638 CREATED AT: 13:34:42 JAN 15,1988 PRINTED AT: 13:53:24 JAN 15,1988

1234567890123456789012345678901234567890f234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890**SEQ NO. 00

SARGENT & LUNDY

3

@RUN,C/N JH95,215/OE8181,CL1453600,12,200 . HAMPTON CALLX6810

3308

SARGENT & LUNDY

```
@PROG ANS095185410
PROG 2R2A     $&L-S   1100/80A      (851126 0859:33) 1985 Jan 15 Wed 1334:44

@ASG,A SJH-CLINTON*EQUIPMENT.
W 120133 file is already assigned.

@DELETE,C SJH-CLINTON*POSTFILE37.
PURPUR 28R3A $747!! 01/15/86 13:34:46

SJH-CLINTON*POSTFILE37    IS NOT CATALOGUED OR ASSIGNED
FAC STATUS: 400010000000

@ASG,UP SJH-CLINTON*POSTFILE37.

@USE 12.,SJH-CLINTON*POSTFILE37.
```

SARGENT & LUNDY

```
@Q
QUEUE Processor Level 7.7     (851125 1501:06) 1985 Jan 15 Wed 1334:47


PRINT$ file is to be symmed to device    XEROX1
     $qqq
$ACNT=ANS095185410,$PRO=215CLI453800,$RND=SJH95  ,$USR=DE81&1,$DAT=01158513344 2,
FICHE=3,ORIGINAL=2,LOC=30V12,LABEL=LINEAR UNIFORM THERMAL EXPANSION OF HVAC PENETRATION,XEROX=2,JDL=TWOUP,COLOR=BUFF,RTO
1=1-HAMPTON 30V12,LINEPRNT=PR,
     $qqq
END 0:
```

SARGENT & LUNDY

3308

```
@ELT,IL TPFS.DATA
ELT 8R2,75R205 01/15/86 13:34:48 (->0)
     1.              00      /PREP7
     2.              00      /TITLE, HVAC PENETRATION WITH FIRE DAMPER - UNIFORM EXPANSION
     3.              00      C*** DEFINE ANALYSIS PARAMETERS
     4.              00      KAN,0
     5.              00      C*** KAY,3,0
     6.              00      C*** KAY,6,1
     7.              00      C*** KAY,8,0
     8.              00      KNL,0
     9.              00      TREF,70.0
    10.              00      C*** DEFINE ELEMENTS AND PROPERTIES
    11.              00      ET,1,24,1
    12.              00      R,1,0.0,0.0,0.0,,0.0,1.9375,.125
    13.              00      RMORE,1.9375,1.9375,.125
    14.              00      ET,2,48
    15.              00      R,2,.0747
    16.              00      ET,3,24,1
    17.              00      R,3,0.0,0.0,0.0,,0.0,.75,.0359
    18.              00      RMORE,-.75,.75,.0358
    19.              00      ET,4,63
    20.              00      R,4,.1108
    21.              00      R,5,.0747
    22.              00      R,6,0.0,0.0,0.0,,0.0,-.75,.0359
    23.              00      RMORE,-.75,-.75,.0359
    24.              00      C*** DEFINE MATERIAL PROPERTIES
    25.              00      MPTEMP,1,100,300,600,800,1000,1300
    26.              00      MPDATA,EX,1,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
    27.              00      MPDATA,ALPX,1,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.6E-6,9.6E-6
    28.              00      NUXY,1,.3
    29.              00      C*** DEFINE NONLINEAR MATERIAL PROPERTIES
    30.              00      MPTEMP,1,100,300,600,800,1000,1300
    31.              00      MPDATA,EX,2,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
    32.              00      NUXY,2,.3
    33.              00      MPDATA,ALPX,2,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.6E-6,9.6E-6
    34.              00      NL,2,13,2
    35.              00      NL,2,15,100,300,600,800,1000,1300
    36.              00      NL,2,25,35E3,33E3,27E3,23E3,18E3,6E3
    37.              00      NL,2,31,.2,.2,.2,.2,.2,.2
    38.              00      C*** DEFINE NODES
    39.              00      N,1,0.0,-6.0,6.44  $,7.29.5,-6.0,6.44  $FILL
    40.              00      N,10,29.5,6.0,6.44  $FILL $N,16,0.0,6.0,6.44  $FILL
    41.              00      NGEN,3,16,1,16,1,0.0,0.0,-2.0  $N,49,0.0,2.67,2.44  $,50,0.0,-2.67,2.44
    42.              00      NGEN,2,16,33,50,1,0.0,0.0,-4.88
    43.              00      NGEN,2,16,51,66,1,0.0,0.0,-2.0
    44.              00      C*** DEFINE ELEMENTS
    45.              00      MAT,2
    46.              00      E,1,2,17  $EGEN,15,1,1
    47.              00      TYPE,2  $REAL,2  $MAT,2
    48.              00      E,1,2,17  $,17,2,16  $,16,2,19  $,2,3,19  $EGEN,7,2,16,15,1
    49.              00      E,31,15,16  $,16,32,31
    50.              00      E,33,17,34  D,17,16,34  $,34,16,15  $,34,19,35  $EGEN,7,2,46,49,1
    51.              00      E,47,31,48  $,31,32,48
    52.              00      TYPE,3 $REAL,3 $MAT,1
    53.              00      E,33,34,51  $EGEN,17,1,78  $E,50,33,51
    54.              00      TYPE,4  $REAL,4
    55.              00      E,33,34,52,51  $EGEN,17,1,84  $E,50,33,51,68
    56.              00      TYPE,2  $REAL,6
```

SARGENT&LUNDY

```
    57.              00      E,51,52,70  $EGEN,15,1,112 $E,68,67,69  $E,67,68,89  $E,68,51,89
    58.              00      TYPE,4  $REAL,5
    59.              00      E,51,52,70,89  $EGEN,15,1,130
    60.              00      C*** DEFINE CONSTRAINTS
    61.              00      D,1,UX,0.0,0.0,0.0,1.0,UY,ROTY,ROTZ
    62.              00      D,16,UX,0.0,0.0,0.0,16,0,ROTY,ROTZ
    63.              00      D,17,UX,0.0,0.0,0.0,33,16,UY,ROTY,ROTZ
    64.              00      D,32,UX,0.0,0.0,0.0,48,16,ROTY,ROTZ
    65.              00      D,51,UX,0.0,0.0,0.0,69,16,UY,ROTY,ROTZ
    66.              00      D,66,UX,0.0,0.0,0.0,84,16,ROTY,ROTZ
    67.              00      D,69,UZ,0.0,0.0,0.0,84,1
    68.              00      D,49,UX,0.0,0.0,0.0,50,1,ROTY,ROTZ
    69.              00      D,67,UX,0.0,0.0,0.0,68,1,ROTY,ROTZ
    70.              00      C*** DEFINE THERMAL LOADING
    71.              00      KBC,1
    72.              00      TUNIF,150.0
    73.              00      C*** KTEMP,-1
    74.              00      C*** T,13,231.39  $TGEN,4,1,13
    75.              00      C*** T,1,1300.0  $TGEN,7,1,1
    76.              00      C*** T,10,230.87  $T,11,231.1387  $T,12,231.3767
    77.              00      C*** T,8,634.0933  $T,9,280.6863
    78.              00      ITER,1,1,1
    79.              00      PRDISP,1
    80.              00      AFWRIT
    81.              00      FINISH
    82.              00      /INPUT,27
    83.              00      FINISH

@ADD,LP $RUN.

END ELT.  ERRORS: NONE.  TIME:  2.850 SEC.  IMAGE COUNT: 83

@PRT,I
FURPUR 28R3A S74T11 01/15/86 13:34:48
CLI453600*TPFS(0),D8470,T
SJH-CLINTON*EQUIPMENT(1),D8470,ZOA  @@@N^SYMS$$,
SYS$*PR@@@@SJH$$(1),D8470,ZXURP  @@@NSYMS$$,
SYS$*$$PROG$NUM$$(0),D8470,T  $PRG$.
CLI453600*$RUN(0),D8470,T  @@@NNSYMS$$,
SJH-CLINTON*POSTFILE37(1),D8470,XUP  12.

@PRT,$ TPFS.DATA .
```

SARGENT&LUNDY

3308

```
CL1453800+TPFS(0) DATA(0)
      1       /PREP7
      2       /TITLE, HVAC PENETRATION WITH FIRE DAMPER - UNIFORM EXPANSION
      3       C*** DEFINE ANALYSIS PARAMETERS
      4       KAN,0
      5       C*** KAY,3,0
      6       C*** KAY,6,1
      7       C*** KAY,8,0
      8       KNL,0
      9       TREF,70.0
     10       C*** DEFINE ELEMENTS AND PROPERTIES
     11       ET,1,24,1
     12       R,1,0.0,0.0,,0.0,1.9375,.125
     13       RMORE,1.9375,1.9375,.125
     14       ET,2,44
     15       R,2,.0747
     16       ET,3,24,1
     17       R,3,0.0,0.0,,0.0,.75,.0359
     18       RMORE,-.75,.75,.0359
     19       ET,4,63
     20       R,4,.1108
     21       R,5,.0747
     22       R,6,0.0,0.0,,0.0,-.75,.0359
     23       RMORE,-.75,-.75,.0359
     24       C*** DEFINE MATERIAL PROPERTIES
     25       MPTEMP,1,100,300,500,800,1000,1300
     26       MPDATA,EX,1,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
     27       MPDATA,ALPX,1,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.5E-6,9.6E-6
     28       NUXY,1,.3
     29       C*** DEFINE NONLINEAR MATERIAL PROPERTIES
     30       MPTEMP,1,100,300,500,800,1000,1300
     31       MPDATA,EX,2,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
     32       NUXY,2,.3
     33       MPDATA,ALPX,2,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.5E-6,9.6E-6
     34       NL,2,13,2
     35       NL,2,19,100,300,500,800,1000,1300
     36       NL,2,25,36E3,33E3,27E3,23E3,18E3,6E3
     37       NL,2,31,.2,.2,.2,.2,.2,.2
     38       C*** DEFINE NODES
     39       N,1,0.0,-8.0,5.44  $,7,29.5,-8.0,5.44  $FILL
     40       N,10,29.5,8.0,5.44  $FILL $N,15,0.0,8.0,5.44  $FILL
     41       NGEN,3,15,1,15,1,0.0,0.0,-2.0  $N,49,0.0,2.67,2.44  $,50,0.0,-2.67,2.44
     42       NGEN,2,15,33,50,1,0.0,0.0,-4.88
     43       NGEN,2,15,51,65,1,0.0,0.0,-2.0
     44       C*** DEFINE ELEMENTS
     45       MAT,2
     46       E,1,2,17  $EGEN,15,1,1
     47       TYPE,2  $REAL,2  $MAT,2
     48       E,1,2,17  $,17,2,15  $,15,2,19  $,2,3,19  $EGEN,7,2,15,19,1
     49       E,31,15,15  $,15,33,31
     50       E,33,17,34  $,17,15,34  $,34,15,19  $,34,19,35  $EGEN,7,2,45,49,1
     51       E,47,31,48  $,31,32,48
     52       TYPE,3 $REAL,3 $MAT,1
     53       E,33,34,51  $EGEN,17,1,75  $E,50,33,51
     54       TYPE,4  $REAL,4
     55       E,33,34,52,51  $EGEN,17,1,84  $E,50,33,51,65
     56       TYPE,3  $REAL,5
     57       E,51,52,70  $EGEN,15,1,112 $E,65,67,69  $E,67,82,69  $E,65,51,69
```

SARGENT&LUNDY

```
     58       TYPE,4  $REAL,5
     59       E,51,52,70,69  $EGEN,15,1,130
     60       C*** DEFINE CONSTRAINTS
     61       D,1,UX,0.0,0.0,1.0,UY,ROTY,ROTZ
     62       D,15,UX,0.0,0.0,15.0,ROTY,ROTZ
     63       D,17,UX,0.0,0.0,33.15,UY,ROTY,ROTZ
     64       D,32,UX,0.0,0.0,48.15,ROTY,ROTZ
     65       D,51,UX,0.0,0.0,69.15,UY,ROTY,ROTZ
     66       D,65,UX,0.0,0.0,84.15,ROTY,ROTZ
     67       D,69,UZ,0.0,0.0,84.1
     68       D,49,UX,0.0,0.0,50.1,ROTY,ROTZ
     69       D,67,UX,0.0,0.0,68.1,ROTY,ROTZ
     70       C*** DEFINE THERMAL LOADING
     71       KBC,1
     72       TUNIF,150.0
     73       C*** KTEMP,-1
     74       C*** T,13,231.39  $TGEN,4,1,13
     75       C*** T,1,1300.0  $TGEN,7,1,1
     76       C*** T,10,230.67  $T,11,231.1367  $T,12,231.3767
     77       C*** T,5,834.0833  $T,9,280.5883
     78       ITER,1,1,1
     79       PRDISP,1
     80       AFWRIT
     81       FINISH
     82       /INPUT,27
     83       FINISH

@ASG,A OPS$+OBSABSOLUTES.
W:120333 file is assigned to another run.
W:121433 file is catalogued as a read only file.
W:122333 A write key exists on the file.


@ADD,PL OPS$+OBSABSOLUTES.ANSOBS185410.

@ASG,T  2.,///2500

@ASG,T  3.,///2500

@ASG,T  4.,///2000

@ASG,T  7.,///2000

@ASG,T  8.,///2000

@ASG,T  9.,///2000

@ASG,T  10.,///2000
```

SARGENT&LUNDY

3108

```
@ASG,T   11.,///2500

@ASG,T   12.,///3000
W:120133 file is already assigned.
W:122633 option(s) conflict with previous assign options --
option conflict ignored.

@ASG,T   13.,///2000

@ASG,T   14.,///2000

@ASG,T   15.,///2000

@ASG,T   16.,///2000

@ASG,T   17.,///3500

@ASG,T   18.,///2000

@ASG,T   19.,///2000

@ASG,T   20.,///2000

@ASG,T   21.,///2000

@ASG,T   22.,///2000

@ASG,T   23.,///2000

@ASG,T   24.,///2000

@ASG,T   25.,///2000

@ASG,T   30.,///2000

@ASG,A     DSANDOCUS*ANSO95185410.
W:121433 file is catalogued as a read only file.
W:122333 a write key exists on the file.

@USE   31.,DSANDOCUS*ANSO95185410.
```

SARGENT & LUNDY

```
@SLXOT   SYSS*OPSS.ANSO95185410
SLXOT 2.2 SL75R1 01/15/86 13:34:52


                PROGRAM ID ANSO95185410                                  PROGRAM FILE DATE JANUARY 26, 1986 13:11:26

                RUN ID     SJH95                                         DIVISION STATION ID  CLI453800

                    *****     PROGRAM USED IS VALIDATED ACCORDING TO QAP 4-1     *****
                                 AND EXECUTED FROM CSD CONTROLLED FILES
```

SARGENT & LUNDY

12

```
/PXOT    SYS$*DPSS.ANSD85185410
```

SARGENT&LUNDY

13

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          **********  ANSYS INPUT DATA LISTING (FILE18)  **********
        6     12     18     24     30     36     42     48     54     60     66     72     78
        V      V      V      V      V      V      V      V      V      V      V      V      V
  1   /PREP7
  2   /TITLE, HVAC PENETRATION WITH FIRE DAMPER - UNIFORM EXPANSION
  3   C*** DEFINE ANALYSIS PARAMETERS
  4   KAN,0
  5   C*** KAY,3,0
  6   C*** KAY,6,1
  7   C*** KAY,8,0
  8   KNL,0
  9   TREF,70.0
 10   C*** DEFINE ELEMENTS AND PROPERTIES
 11   ET,1,24,1
 12   R,1,0.0,0.0,,0.0,1.9375,.125
 13   RMORE,1.9375,1.9375,.125
 14   ET,2,48
 15   R,2,.0747
 16   ET,3,24,1
 17   R,3,0.0,0.0,,0.0,.75,.0359
 18   RMORE,-.75,.75,.0359
 19   ET,4,63
 20   R,4,.1196
 21   R,5,.0747
 22   R,6,0.0,0.0,,0.0,-.75,.0359
 23   RMORE,-.75,-.75,.0359
 24   C*** DEFINE MATERIAL PROPERTIES
 25   MPTEMP,1,100,300,600,800,1000,1300
 26   MPDATA,EX,1,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
 27   MPDATA,ALPX,1,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.6E-6,9.6E-6
 28   NUXY,1,.3
 29   C*** DEFINE NONLINEAR MATERIAL PROPERTIES
 30   MPTEMP,1,100,300,600,800,1000,1300
 31   MPDATA,EX,2,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
 32   NUXY,2,.3
 33   MPDATA,ALPX,2,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.6E-6,9.6E-6
 34   NL,2,13,2
 35   NL,2,18,100,300,600,800,1000,1300
 36   NL,2,25,36E3,33E3,27E3,23E3,18E3,8E3
 37   NL,2,31,.2,.2,.2,.2,.2,.2
 38   C*** DEFINE NODES
 39   N,1,0.0,-8.0,8.44  $,7,29.5,-8.0,8.44  $FILL
 40   N,10,29.5,8.0,8.44  $FILL $N,16,0.0,8.0,8.44  $FILL
 41   NGEN,3,15,1,16,1,0.0,0.0,0.0,-2.0  $N,49,0.0,2.67,2.44  $,50,0.0,-2.67,2.44
 42   NGEN,2,16,33,50,1,0.0,0.0,-4.88
 43   NGEN,2,16,51,66,1,0.0,0.0,-2.0
 44   C*** DEFINE ELEMENTS
 45   MAT,2
 46   E,1,2,17  $EGEN,15,1,1
 47   TYPE,2  $REAL,2  $MAT,2
 48   E,1,2,17  $,17,2,16  $,16,2,18  $,2,3,19  $EGEN,7,2,16,19,1
 49   E,31,15,16  $,16,32,31
 50   E,33,17,34  $,17,18,34  $,34,18,19  $,34,19,35  $EGEN,7,2,48,49,1
        A     A     A     A     A     A     A     A     A     A     A     A     A
```

SARGENT&LUNDY

3308

```
          **********  ANSYS INPUT DATA LISTING (FILE18) . **********

             6     12     18     24     30     36     42     48     54     60     66     72     78
             V      V      V      V      V      V      V      V      V      V      V      V      V
  51   E,47,31,48  $,31,32,48
  52   TYPE,3 $REAL,3 $MAT,1
  53   E,33,34,51  SEGEN,17,1,78  $E,50,33,51
  54   TYPE,4  $REAL,4
  55   E,33,34,52,51  SEGEN,17,1,94  $E,50,33,51,68
  56   TYPE,3  $REAL,6
  57   E,51,52,70  SEGEN,15,1,112 $E,66,67,69  $E,67,68,69  $E,68,51 69
  58   TYPE,4  $REAL,5
  59   E,51,52,70,69  SEGEN,15,1,130
  60   C*** DEFINE CONSTRAINTS
  61   D,1,UX,0.0,0.0,1.0,UY,ROTY,ROTZ
  62   D,16,UX,0.0,0.0,16.0,ROTY,ROTZ
  63   D,17,UX,0.0,0.0,33,18,UY,ROTY,ROTZ
  64   D,32,UX,0.0,0.0,48,16,ROTY,ROTZ
  65   D,51,UX,0.0,0.0,69,18,UY,ROTY,ROTZ
  66   D,66,UX,0.0,0.0,84,16,ROTY,ROTZ
  67   D,69,UZ,0.0,0.0,84,1
  68   D,49,UX,0.0,0.0,50,1,ROTY,ROTZ
  69   D,67,UX,0.0,0.0,68,1,ROTY,ROTZ
  70   C*** DEFINE THERMAL LOADING
  71   KBC,1
  72   TUNIF,150.0
  73   C*** KTEMP,-1
  74   C*** T,13,231.39  $TGEN,4,1,13
  75   C*** T,1,1300.0  $TGEN,7,1,1
  76   C*** T,10,230.67  $T,11,231.1367  $T,12,231.3767
  77   C*** T,8,634.0933  $T,9,280.5883
  78   ITER,1,1,1
  79   PRDISP,1
  80   APWRIT
  81   FINISH
  82   /INPUT,27
  83   FINISH
```

SARGENT & LUNDY

```
          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C       SARGENT & LUNDY  JAN 1,1983
      SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 TITLE                                                                    13.5928   1/15/68 CP=          .000

        ***** ANSYS ANALYSIS DEFINITION (PREP7) *****

NEW TITLE=  HVAC PENETRATION WITH FIRE DAMPER - UNIFORM EXPANSION

C*** DEFINE ANALYSIS PARAMETERS

ANALYSIS TYPE=  0

C*** KAY,3,0

C*** KAY,8,1

C*** KAY,8,0

LINEAR ANALYSIS - NO NON-LINEAR PROPERTIES

REFERENCE TEMPERATURE=  70.000  (TUNIF=  70.000)

C*** DEFINE ELEMENTS AND PROPERTIES

ELEMENT TYPE  1 USES STIF 24
 KEYOPT(1-8)=   1   0   0      0   0   0       0   0   0  (NOTPR=  0  NUMBER OF NODES=   3

PLASTIC THIN-WALL BEAM, 3-D

CURRENT NODAL DOF SET IS  UX     UY     UZ     ROTX   ROTY   ROTZ
 THREE-DIMENSIONAL STRUCTURE

 REAL CONSTANT SET   1  ITEMS   1 TO   6
      .000           .000           .000           .000           1.84           .125

 REAL CONSTANT SET   1  ITEMS   7 TO  12
      1.84           1.84           .125           .000           .000           .000

ELEMENT TYPE  2 USES STIF 48
 KEYOPT(1-8)=   0   0   0      0   0   0       0   0   0  (NOTPR=  0  NUMBER OF NODES=   3

PLASTIC TRIANGULAR SHELL

CURRENT NODAL DOF SET IS  UX     UY     UZ     ROTX   ROTY   ROTZ
 THREE-DIMENSIONAL STRUCTURE

 REAL CONSTANT SET   2  ITEMS   1 TO   6
      .747-001       .000           .000           .000           .000           .000

ELEMENT TYPE  3 USES STIF 24
 KEYOPT(1-8)=   1   0   0      0   0   0       0   0   0  (NOTPR=  0  NUMBER OF NODES=   3
```

SARGENT & LUNDY

3308

```
PLASTIC THIN-WALL BEAM, 3-D

CURRENT NODAL DOF SET IS  UX     UY     UZ     ROTX   ROTY   ROTZ
 THREE-DIMENSIONAL STRUCTURE

 REAL CONSTANT SET    3  ITEMS    1 TO    6
     .000           .000           .000           .000           .750           .358-001

 REAL CONSTANT SET    3  ITEMS    7 TO   12
    -.750           .750           .358-001       .000           .000           .000

ELEMENT TYPE  4 USES STIF 63
 KEYOPT(1-8)=    0   0   0     0   0   0      0   0   0  INOTPR= 0  NUMBER OF NODES=   4

QUAD  FLAT SHELL

CURRENT NODAL DOF SET IS  UX     UY     UZ     ROTX   ROTY   ROTZ
 THREE-DIMENSIONAL STRUCTURE

 REAL CONSTANT SET    4  ITEMS    1 TO    6
     .111           .000           .000           .000           .000           .000

 REAL CONSTANT SET    5  ITEMS    1 TO    6
     .747-001       .000           .000           .000           .000           .000

 REAL CONSTANT SET    6  ITEMS    1 TO    6
     .000           .000           .000           .000          -.750           .358-001

 REAL CONSTANT SET    6  ITEMS    7 TO   12
    -.750          -.750           .358-001       .000           .000           .000

C*** DEFINE MATERIAL PROPERTIES


*** TEMPERATURE TABLE FOR PROPERTIES     NUM. TEMPS=   8 ***
SLOC=    1      100.0000       300.0000       500.0000
               800.0000       1000.000       1300.000

PROPERTY TABLEEX     MAT=    1  NUM. POINTS=   8
SLOC=    1      .2900000+008   .2830000+008   .2870000+008   .2420000+008
               .2100000+008   .1800000+008

PROPERTY TABLEALPX   MAT=    1  NUM. POINTS=   8
SLOC=    1      .8530000-005   .7300000-005   .8350000-005   .8900000-005
               .9500000-005   .9500000-005

 MATERIAL    1           COEFFICIENTS OF NUXY VS. TEMP EQUATION
  C0 =    .3000000

PROPERTY TABLE NUXY  MAT=    1  NUM. POINTS=   8
      TEMPERATURE      DATA          TEMPERATURE      DATA
      100.0000        .3000000       300.0000        .3000000
      500.0000        .3000000       800.0000        .3000000
      1000.000        .3000000       1300.000        .3000000

C*** DEFINE NONLINEAR MATERIAL PROPERTIES
```

SARGENT & LUNDY

```
*** TEMPERATURE TABLE FOR PROPERTIES     NUM. TEMPS=   8 ***
SLOC=    1      100.0000       300.0000       500.0000
               800.0000       1000.000       1300.000

PROPERTY TABLEEX     MAT=    2  NUM. POINTS=   8
SLOC=    1      .2900000+008   .2830000+008   .2870000+008   .2420000+008
               .2100000+008   .1800000+008

 MATERIAL    2           COEFFICIENTS OF NUXY VS. TEMP EQUATION
  C0 =    .3000000

PROPERTY TABLE NUXY  MAT=    2  NUM. POINTS=   8
      TEMPERATURE      DATA          TEMPERATURE      DATA
      100.0000        .3000000       300.0000        .3000000
      500.0000        .3000000       800.0000        .3000000
      1000.000        .3000000       1300.000        .3000000

PROPERTY TABLEALPX   MAT=    2  NUM. POINTS=   8
SLOC=    1      .8530000-005   .7300000-005   .8350000-005   .8900000-005
               .9500000-005   .9500000-005

NONLINEAR PROPERTIES FOR MATERIAL    2  NUM. POINTS=  48
SLOC=   13    2.0000         .00000         .00000         .00000         .00000         .00000

NONLINEAR PROPERTIES FOR MATERIAL    2  NUM. POINTS=  48
SLOC=   18    100.00         300.00         500.00         800.00         1000.0         1300.0

NONLINEAR PROPERTIES FOR MATERIAL    2  NUM. POINTS=  48
SLOC=   25    36000.         33000.         27000.         23000.         18000.         8000.0

NONLINEAR PROPERTIES FOR MATERIAL    2  NUM. POINTS=  48
SLOC=   31    .20000         .20000         .20000         .20000         .20000         .20000

C*** DEFINE NODES

NODE     1  KCS=  0  X,Y,Z=   .00000       -8.0000        5.4400

NODE     7  KCS=  0  X,Y,Z=   29.500       -8.0000        5.4400

FILL     5 POINTS BETWEEN NODE     1 AND NODE     7
 START WITH NODE     2 AND INCREMENT BY      1

NODE    10  KCS=  0  X,Y,Z=   29.500        8.0000        5.4400

FILL     2 POINTS BETWEEN NODE     7 AND NODE    10
 START WITH NODE     8 AND INCREMENT BY      1

NODE    16  KCS=  0  X,Y,Z=   .00000        8.0000        5.4400

FILL     5 POINTS BETWEEN NODE    10 AND NODE    16
 START WITH NODE    11 AND INCREMENT BY      1
```

3308

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```
GENERATE     3 TOTAL SETS OF NODES WITH INCREMENT      16
  SET IS FROM     1 TO    16 IN STEPS OF     1
  GEOMETRY INCREMENTS ARE  .00000        .00000      -2.0000

NODE    48  NCS= 0  X,Y,Z=  .00000       2.6700       2.4400

NODE    50  NCS= 0  X,Y,Z=  .00000      -2.6700       2.4400

GENERATE     2 TOTAL SETS OF NODES WITH INCREMENT      18
  SET IS FROM    33 TO    50 IN STEPS OF     1
  GEOMETRY INCREMENTS ARE  .00000        .00000      -4.8800

GENERATE     2 TOTAL SETS OF NODES WITH INCREMENT      18
  SET IS FROM    51 TO    68 IN STEPS OF     1
  GEOMETRY INCREMENTS ARE  .00000        .00000      -2.0000

C*** DEFINE ELEMENTS

MATERIAL NUMBER SET TO   2
ELEMENT              1      2     17

GENERATE    15 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      1
  SET IS     1 TO     1 IN STEPS OF     1
NUMBER OF ELEMENTS=     15

ELEMENT TYPE SET TO   2

REAL CONSTANT NUMBER=   2

MATERIAL NUMBER SET TO   2
ELEMENT    16        1      2     17
ELEMENT    17       17      2     18
ELEMENT    18       18      2     19
ELEMENT    19        2      3     19

GENERATE     7 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      2
  SET IS    16 TO    19 IN STEPS OF     1
NUMBER OF ELEMENTS=     43
ELEMENT    44       31     15     18
ELEMENT    45       18     32     31
ELEMENT    46       33     17     34
ELEMENT    47       17     18     34
ELEMENT    48       34     18     19
ELEMENT    49       34     19     35

GENERATE     7 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      2
  SET IS    46 TO    49 IN STEPS OF     1
NUMBER OF ELEMENTS=     73
ELEMENT    74       47     31     46
ELEMENT    75       31     32     48

ELEMENT TYPE SET TO   3

REAL CONSTANT NUMBER=   3

MATERIAL NUMBER SET TO   1
ELEMENT    76       33     34     51
```

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```
GENERATE    17 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      1
  SET IS    76 TO    76 IN STEPS OF     1
NUMBER OF ELEMENTS=     93
ELEMENT    93       50     33     51

ELEMENT TYPE SET TO   4

REAL CONSTANT NUMBER=   4
ELEMENT    94       33     34     52     51

GENERATE    17 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      1
  SET IS    94 TO    94 IN STEPS OF     1
NUMBER OF ELEMENTS=    110
ELEMENT   111       50     33     51     68

ELEMENT TYPE SET TO   3

REAL CONSTANT NUMBER=   5
ELEMENT   112       51     52     70

GENERATE    15 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      1
  SET IS   112 TO   112 IN STEPS OF     1
NUMBER OF ELEMENTS=    128
ELEMENT   127       66     67     83
ELEMENT   128       67     68     84
ELEMENT   129       68     51     69

ELEMENT TYPE SET TO   4

REAL CONSTANT NUMBER=   5
ELEMENT   130       51     52     70     69

GENERATE    15 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      1
  SET IS   130 TO   130 IN STEPS OF     1
NUMBER OF ELEMENTS=    144

C*** DEFINE CONSTRAINTS

SPECIFIED DISP UX    FROM NODE      1 TO NODE      1 IN STEPS OF     1
  VALUES=  .00000        .00000      ADDITIONAL DOFS=  UY     ROTY   ROTZ

SPECIFIED DISP UX    FROM NODE     18 TO NODE     18 IN STEPS OF     1
  VALUES=  .00000        .00000      ADDITIONAL DOFS=  ROTY   ROTZ

SPECIFIED DISP UX    FROM NODE     17 TO NODE     33 IN STEPS OF    16
  VALUES=  .00000        .00000      ADDITIONAL DOFS=  UY     ROTY   ROTZ

SPECIFIED DISP UX    FROM NODE     32 TO NODE     48 IN STEPS OF    16
  VALUES=  .00000        .00000      ADDITIONAL DOFS=  ROTY   ROTZ

SPECIFIED DISP UX    FROM NODE     51 TO NODE     68 IN STEPS OF    16
  VALUES=  .00000        .00000      ADDITIONAL DOFS=  UY     ROTY   ROTZ

SPECIFIED DISP UX    FROM NODE     66 TO NODE     84 IN STEPS OF    18
  VALUES=  .00000        .00000      ADDITIONAL DOFS=  ROTY   ROTZ
```

3308

SARGENT & LUNDY

20

```
SPECIFIED DISP UZ    FROM NODE     69 TO NODE     84 IN STEPS OF     1
 VALUES=   .00000       .00000       ADDITIONAL DOFS=

SPECIFIED DISP UX    FROM NODE     49 TO NODE     50 IN STEPS OF     1
 VALUES=   .00000       .00000       ADDITIONAL DOFS=  ROTY  ROTZ

SPECIFIED DISP UX    FROM NODE     67 TO NODE     68 IN STEPS OF     1
 VALUES=   .00000       .00000       ADDITIONAL DOFS=  ROTY  ROTZ

C*** DEFINE THERMAL LOADING

STEP BOUNDARY CONDITION KEY=  1

UNIFORM TEMPERATURE=   150.000   (TREF=    70.000)

C*** KTEMP,-1

C*** T,13,231.38  STGEN,4,1,13

C*** T,1,1300.0  STGEN,7,1,1

C*** T,10,230.67  ST,11,231.1387  ST,12,231.3747

C*** T,8,634.0933  ST,9,240.5863

NITTER=       1  NPRINT=      1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

NODE PRINT SPECIFICATION   1  FREQ=      1  NSTART=      1  NSTOP=     84  NINC=      1

*** NOTE ***  KRF KEY NOT SET - NO NODAL OR REACTION FORCES
               WILL BE AVAILABLE FOR POSTPROCESSING

DATA CHECKED - NO FATAL ERRORS FOUND.
CHECK OUTPUT FOR POSSIBLE WARNING MESSAGES.

*** WARNING ***  NON-LINEAR PROPERTIES WERE INPUT BUT NOT USED.  KNL=  0

ANALYSIS DATA WRITTEN ON FILE27 (    432 LINES)

*** PREP7 GLOBAL STATUS ***

TITLE=  HVAC PENETRATION WITH FIRE DAMPER - UNIFORM EXPANSION
ANALYSIS TYPE=       0
NUMBER OF ELEMENT TYPES=       4
NUMBER OF ELEMENTS=    144
MAXIMUM NODE NUMBER=     84
MAXIMUM LINEAR PROPERTY NUMBER=       2
NUMBER OF NON-LINEAR PROPERTIES=       1
MAXIMUM REAL CONSTANT SET NUMBER=       6
```

SARGENT&LUNDY

21

```
ACTIVE COORDINATE SYSTEM=       0  (CARTESIAN)
NUMBER OF IMPOSED DISPLACEMENTS=      63

ALL CURRENT PREP7 DATA WRITTEN TO FILE18
 FOR POSSIBLE RESUME FROM THIS POINT


***** ROUTINE COMPLETED *****  CP =          15.851

***** INPUT FILE SWITCHED FROM FILE18 TO FILE27
```

3308

SARGENT&LUNDY

22

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            ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1        C      SARGENT & LUNDY  JAN 1, 1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8855

 HVAC PENETRATION WITH FIRE DAMPER - UNIFORM EXPANSION                              13.6972   1/15/88 CP=      15.934

            *****  NOTICE  *****  THIS IS THE ANSYS GENERAL PURPOSE
            FINITE ELEMENT COMPUTER PROGRAM.  NEITHER SWANSON ANALYSIS
            SYSTEMS, INC. NOR THE CORPORATION SUPPLYING THE COMPUTER
            FACILITIES FOR THIS ANALYSIS ASSUME ANY RESPONSIBILITY FOR
            THE VALIDITY, ACCURACY, OR APPLICABILITY OF ANY RESULTS
            OBTAINED FROM THE ANSYS SYSTEM.  THE USER MUST VERIFY HIS
            OWN RESULTS.

            SWANSON ANALYSIS SYSTEMS,INC. IS ENDEAVORING TO MAKE THE
            ANSYS PROGRAM AS COMPLETE, ACCURATE, AND EASY TO USE AS
            POSSIBLE.  SUGGESTIONS AND COMMENTS ARE WELCOMED.  ANY
            ERRORS ENCOUNTERED IN EITHER THE DOCUMENTATION OR THE
            RESULTS SHOULD BE IMMEDIATELY BROUGHT TO OUR ATTENTION.

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            ***** ANALYSIS OPTIONS *****

                                    VALUE

  ANALYSIS TYPE . . . . . .          0
  REFERENCE TEMPERATURE . . . .      70.00


            ***** ELEMENT TYPES *****

  TYPE  STIF        DESCRIPTION                    KEY OPTIONS                    NJ   INOTPR
                                                 1  2  3    4  5  6    7  8  9

 NUMBER OF ELEMENT TYPES=   4


            ***** TABLE OF ELEMENT REAL CONSTANTS *****
   NO.

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 NUMBER OF REAL CONSTANT SETS=   6


            ***** ELEMENT DEFINITIONS *****

 ELEMENT     NODES                                MAT  TYPE  CLASS          ELEMENT REAL CONSTANTS
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3

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 SWITCHED TO FIXED FORMAT INPUT

  INTEGER STORAGE REQUIREMENTS FOR ELEMENT INPUT                    CP=     26.844   TIME= 13.80038
  MEMORY REQUIRED=      1937  MEMORY AVAILABLE= 4002000
  MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE=     2000114

  NUMBER OF ELEMENTS =     144      MAXIMUM NODE NUMBER USED =      84


            ***** NODE DEFINITIONS *****

                          LOCATION                                ROTATION (DEGREES)

   NODE          X             Y             Z            THXY          THYZ          THXZ
                (OR R)      (OR THETA)     (OR PHI)      (OR RT)      (TZ OR TP)    (RZ OR AP)

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 SWITCHED TO FIXED FORMAT INPUT

  XMIN=   .0000       XMAX=   29.50       YMIN=  -8.000       YMAX=   8.000       ZMIN=  -4.440       ZMAX=   8.440

  INTEGER STORAGE REQUIREMENTS FOR NODE INPUT                       CP=     28.012   TIME= 13.80063
  MEMORY REQUIRED=      1008  MEMORY AVAILABLE= 4002000
  MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE= 887000


            ***** MATERIAL PROPERTIES *****

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 MAXIMUM MATERIAL NUMBER=   2


            ***** MAST R DEGREES OF FREEDOM *****

   NODE        DEGREES OF FREEDOM LIST

 NUMBER OF SPECIFIED MASTER D.O.F.=      0
 TOTAL NUMBER OF MASTER D.O.F.    =      0

  INTEGER STORAGE REQUIREMENTS FOR MATERIALS, ETC. INPUT            CP=     38.983   TIME= 13.80361
  MEMORY REQUIRED=       598  MEMORY AVAILABLE= 4002000

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3308

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24

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            ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1        C      SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 HVAC PENETRATION WITH FIRE DAMPER - UNIFORM EXPANSION                                  13.8047   1/15/88 CP=      42.523

 LOAD STEP NUMBER=     1

          *** LOAD OPTIONS SUMMARY ***

 TIME   =    .00000      (TIME AT END OF LOAD STEP)
 NITTER=       1        (NUMBER OF ITERATIONS)
 TUNIF  =  180.0000     (UNIFORM TEMPERATURE)    (TREF=  70.0000)
 KTEMP  =    0          (USE TUNIF FOR ALL NODAL TEMPERATURES)

 NPRINT=       1        (OVERALL PRINT FREQUENCY)
 NPOST  =      1        (OVERALL POST FREQUENCY)

  DISPLACEMENT PRINT FREQUENCIES
   FREQ    NSTRT   NSTOP    NINC
      1        1      64       1

  ELEMENT PRINT AND POST FREQUENCIES
   TYPE  STIFF   STRESS  FORCE       STRESS  STRESS  FORCE
         NO.     PRINT   PRINT       POST    LEVEL   POST
      1    24       1       1          1       3       1
      2    48       1       1          1       3       1
      3    24       1       1          1       3       1
      4    63       1       1          1       3       1


***** LOAD SUMMARY -      63 DISPLACEMENTS        0 FORCES        0 PRESSURES      *****


  INTEGER STORAGE REQUIREMENTS FOR LOAD DATA INPUT                        CP=     48.405  TIME= 13.00639
  MEMORY REQUIRED=     1210  MEMORY AVAILABLE= 4002000

 *** CROSS SECTION PARAMETERS, ELEMENT       1
  PT       Y-COORD          Z-COORD          THICK
   1       .0000            .0000            .0000
   2       .0000            1.937            .1250
   3       1.937            1.937            .1250

 CENTROID = (    .4844      ,     1.453     )       SHEAR CENTER = (    .0000      ,     1.937     )       AREA =      .4844
 IY =      .1894          IZ =      .1894            IYZ =      .1136          J =     .2523-002        IW =     .5700-038
 PRINCIPLE M OF I:        IYP =     .1894             IZP =      .1894          THETAP =     .0000

 *** CROSS SECTION PARAMETERS, ELEMENT       2
  PT       Y-COORD          Z-COORD          THICK
   1       .0000            .0000            .0000
   2       .0000            1.937            .1250
   3       1.937            1.937            .1250

 CENTROID = (    .4844      ,     1.453     )       SHEAR CENTER = (    .0000      ,     1.937     )       AREA =      .4844
 IY =      .1894          IZ =      .1894            IYZ =      .1136          J =     .2523-002        IW =     .5700-038
 PRINCIPLE M OF I:        IYP =     .1894             IZP =      .1894          THETAP =     .0000
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25

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 *** CROSS SECTION PARAMETERS, ELEMENT       3
  PT       Y-COORD          Z-COORD          THICK
   1       .0000            .0000            .0000
   2       .0000            1.937            .1250
   3       1.937            1.937            .1250

 CENTROID = (    .4844      ,     1.453     )       SHEAR CENTER = (    .0000      ,     1.937     )       AREA =      .4844
 IY =      .1894          IZ =      .1894            IYZ =      .1136          J =     .2523-002        IW =     .5700-038
 PRINCIPLE M OF I:        IYP =     .1894             IZP =      .1894          THETAP =     .0000

 *** CROSS SECTION PARAMETERS, ELEMENT       4
  PT       Y-COORD          Z-COORD          THICK
   1       .0000            .0000            .0000
   2       .0000            1.937            .1250
   3       1.937            1.937            .1250

 CENTROID = (    .4844      ,     1.453     )       SHEAR CENTER = (    .0000      ,     1.937     )       AREA =      .4844
 IY =      .1894          IZ =      .1894            IYZ =      .1136          J =     .2523-002        IW =     .5700-038
 PRINCIPLE M OF I:        IYP =     .1894             IZP =      .1894          THETAP =     .0000

 *** CROSS SECTION PARAMETERS, ELEMENT       5
  PT       Y-COORD          Z-COORD          THICK
   1       .0000            .0000            .0000
   2       .0000            1.937            .1250
   3       1.937            1.937            .1250

 CENTROID = (    .4844      ,     1.453     )       SHEAR CENTER = (    .0000      ,     1.937     )       AREA =      .4844
 IY =      .1894          IZ =      .1894            IYZ =      .1136          J =     .2523-002        IW =     .5700-038
 PRINCIPLE M OF I:        IYP =     .1894             IZP =      .1894          THETAP =     .0000

 *** CROSS SECTION PARAMETERS, ELEMENT       6
  PT       Y-COORD          Z-COORD          THICK
   1       .0000            .0000            .0000
   2       .0000            1.937            .1250
   3       1.937            1.937            .1250

 CENTROID = (    .4844      ,     1.453     )       SHEAR CENTER = (    .0000      ,     1.937     )       AREA =      .4844
 IY =      .1894          IZ =      .1894            IYZ =      .1136          J =     .2523-002        IW =     .5700-038
 PRINCIPLE M OF I:        IYP =     .1894             IZP =      .1894          THETAP =     .0000

 *** CROSS SECTION PARAMETERS, ELEMENT       7
  PT       Y-COORD          Z-COORD          THICK
   1       .0000            .0000            .0000
   2       .0000            1.937            .1250
   3       1.937            1.937            .1250

 CENTROID = (    .4844      ,     1.453     )       SHEAR CENTER = (    .0000      ,     1.937     )       AREA =      .4844
 IY =      .1894          IZ =      .1894            IYZ =      .1136          J =     .2523-002        IW =     .5700-038
 PRINCIPLE M OF I:        IYP =     .1894             IZP =      .1894          THETAP =     .0000

 *** CROSS SECTION PARAMETERS, ELEMENT       8
  PT       Y-COORD          Z-COORD          THICK
   1       .0000            .0000            .0000
   2       .0000            1.937            .1250
   3       1.937            1.937            .1250

 CENTROID = (    .4844      ,     1.453     )       SHEAR CENTER = (    .0000      ,     1.937     )       AREA =      .4844
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3308

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IY =     .1894          IZ =     .1894          IYZ =     .1136          J =     .2523-002      IW =     .5700-036
PRINCIPLE M OF I:       IYP =    .1894           IZP =     .1894          THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT      9
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000           1.937             .1250
  3       1.937            1.937             .1250

CENTROID = (    .4844     ,     1.453     )      SHEAR CENTER = (    .0000     ,     1.937     )      AREA =     .4844
IY =     .1894          IZ =     .1894          IYZ =     .1136          J =     .2523-002      IW =     .5700-036
PRINCIPLE M OF I:       IYP =    .1894           IZP =     .1894          THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     10
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000           1.937             .1250
  3       1.937            1.937             .1250

CENTROID = (    .4844     ,     1.453     )      SHEAR CENTER = (    .0000     ,     1.937     )      AREA =     .4844
IY =     .1894          IZ =     .1894          IYZ =     .1136          J =     .2523-002      IW =     .5700-036
PRINCIPLE M OF I:       IYP =    .1894           IZP =     .1894          THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     11
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000           1.937             .1250
  3       1.937            1.937             .1250

CENTROID = (    .4844     ,     1.453     )      SHEAR CENTER = (    .0000     ,     1.937     )      AREA =     .4844
IY =     .1894          IZ =     .1894          IYZ =     .1136          J =     .2523-002      IW =     .5700-036
PRINCIPLE M OF I:       IYP =    .1894           IZP =     .1894          THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     12
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000           1.937             .1250
  3       1.937            1.937             .1250

CENTROID = (    .4844     ,     1.453     )      SHEAR CENTER = (    .0000     ,     1.937     )      AREA =     .4844
IY =     .1894          IZ =     .1894          IYZ =     .1136          J =     .2523-002      IW =     .5700-036
PRINCIPLE M OF I:       IYP =    .1894           IZP =     .1894          THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     13
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000           1.937             .1250
  3       1.937            1.937             .1250

CENTROID = (    .4844     ,     1.453     )      SHEAR CENTER = (    .0000     ,     1.937     )      AREA =     .4844
IY =     .1894          IZ =     .1894          IYZ =     .1136          J =     .2523-002      IW =     .5700-036
PRINCIPLE M OF I:       IYP =    .1894           IZP =     .1894          THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     14
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000           1.937             .1250
  3       1.937            1.937             .1250
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CENTROID = (    .4844     ,     1.453     )      SHEAR CENTER = (    .0000     ,     1.937     )      AREA =     .4844
IY =     .1894          IZ =     .1894          IYZ =     .1136          J =     .2523-002      IW =     .5700-036
PRINCIPLE M OF I:       IYP =    .1894           IZP =     .1894          THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     15
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000           1.937             .1250
  3       1.937            1.937             .1250

CENTROID = (    .4844     ,     1.453     )      SHEAR CENTER = (    .0000     ,     1.937     )      AREA =     .4844
IY =     .1894          IZ =     .1894          IYZ =     .1136          J =     .2523-002      IW =     .5700-036
PRINCIPLE M OF I:       IYP =    .1894           IZP =     .1894          THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     76
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000            .7500            .3580-001
  3       -.7500            .7500            .3580-001

CENTROID = (   -.1875     ,     .5625     )      SHEAR CENTER = (    .8874-018 ,     .7500     )      AREA =     .5385-001
IY =     .3155-002      IZ =     .3155-002      IYZ =    -.1893-002      J =     .2313-004      IW =     .2374-038
PRINCIPLE M OF I:       IYP =    .3155-002       IZP =     .3155-002      THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     77
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000            .7500            .3580-001
  3       -.7500            .7500            .3580-001

CENTROID = (   -.1875     ,     .5625     )      SHEAR CENTER = (    .8874-018 ,     .7500     )      AREA =     .5385-001
IY =     .3155-002      IZ =     .3155-002      IYZ =    -.1893-002      J =     .2313-004      IW =     .2374-038
PRINCIPLE M OF I:       IYP =    .3155-002       IZP =     .3155-002      THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     78
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000            .7500            .3580-001
  3       -.7500            .7500            .3580-001

CENTROID = (   -.1875     ,     .5625     )      SHEAR CENTER = (    .8874-018 ,     .7500     )      AREA =     .5385-001
IY =     .3155-002      IZ =     .3155-002      IYZ =    -.1893-002      J =     .2313-004      IW =     .2374-038
PRINCIPLE M OF I:       IYP =    .3155-002       IZP =     .3155-002      THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     79
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000            .7500            .3580-001
  3       -.7500            .7500            .3580-001

CENTROID = (   -.1875     ,     .5625     )      SHEAR CENTER = (    .8874-018 ,     .7500     )      AREA =     .5385-001
IY =     .3155-002      IZ =     .3155-002      IYZ =    -.1893-002      J =     .2313-004      IW =     .2374-038
PRINCIPLE M OF I:       IYP =    .3155-002       IZP =     .3155-002      THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     80
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
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2	.0000	.7500	.3590-001
3	-.7500	.7500	.3590-001

CENTROID = (-.1875 , .5625) SHEAR CENTER = (.8674-018 , .7500) AREA = .4166-001
IY = .3155-002 IZ = .3155-002 IYZ = -.1893-002 J = .2313-004 IW = .3274-006
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 81

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	.7500	.3590-001
3	-.7500	.7500	.3590-001

CENTROID = (-.1875 , .5625) SHEAR CENTER = (.8674-018 , .7500) AREA = .4166-001
IY = .3155-002 IZ = .3155-002 IYZ = -.1893-002 J = .2313-004 IW = .3274-006
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 82

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	.7500	.3590-001
3	-.7500	.7500	.3590-001

CENTROID = (-.1875 , .5625) SHEAR CENTER = (.8674-018 , .7500) AREA = .4166-001
IY = .3155-002 IZ = .3155-002 IYZ = -.1893-002 J = .2313-004 IW = .3274-006
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 83

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	.7500	.3590-001
3	-.7500	.7500	.3590-001

CENTROID = (-.1875 , .5625) SHEAR CENTER = (.8674-018 , .7500) AREA = .4166-001
IY = .3155-002 IZ = .3155-002 IYZ = -.1893-002 J = .2313-004 IW = .3274-006
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 84

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	.7500	.3590-001
3	-.7500	.7500	.3590-001

CENTROID = (-.1875 , .5625) SHEAR CENTER = (.8674-018 , .7500) AREA = .4166-001
IY = .3155-002 IZ = .3155-002 IYZ = -.1893-002 J = .2313-004 IW = .3274-006
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 85

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	.7500	.3590-001
3	-.7500	.7500	.3590-001

CENTROID = (-.1875 , .5625) SHEAR CENTER = (.8674-018 , .7500) AREA = .4166-001
IY = .3155-002 IZ = .3155-002 IYZ = -.1893-002 J = .2313-004 IW = .3274-006
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 86

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	.7500	.3590-001
3	-.7500	.7500	.3590-001

CENTROID = (-.1875 , .5625) SHEAR CENTER = (.8674-018 , .7500) AREA = .4166-001
IY = .3155-002 IZ = .3155-002 IYZ = -.1893-002 J = .2313-004 IW = .3274-006
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 87

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	.7500	.3590-001
3	-.7500	.7500	.3590-001

CENTROID = (-.1875 , .5625) SHEAR CENTER = (.8674-018 , .7500) AREA = .4166-001
IY = .3155-002 IZ = .3155-002 IYZ = -.1893-002 J = .2313-004 IW = .3274-006
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 88

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	.7500	.3590-001
3	-.7500	.7500	.3590-001

CENTROID = (-.1875 , .5625) SHEAR CENTER = (.8674-018 , .7500) AREA = .4166-001
IY = .3155-002 IZ = .3155-002 IYZ = -.1893-002 J = .2313-004 IW = .3274-006
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 89

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	.7500	.3590-001
3	-.7500	.7500	.3590-001

CENTROID = (-.1875 , .5625) SHEAR CENTER = (.8674-018 , .7500) AREA = .4166-001
IY = .3155-002 IZ = .3155-002 IYZ = -.1893-002 J = .2313-004 IW = .3274-006
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 90

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	.7500	.3590-001
3	-.7500	.7500	.3590-001

CENTROID = (-.1875 , .5625) SHEAR CENTER = (.8674-018 , .7500) AREA = .4166-001
IY = .3155-002 IZ = .3155-002 IYZ = -.1893-002 J = .2313-004 IW = .3274-006
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 91

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	.7500	.3590-001
3	-.7500	.7500	.3590-001

CENTROID = (-.1875 , .5625) SHEAR CENTER = (.8674-018 , .7500) AREA = .4166-001
IY = .3155-002 IZ = .3155-002 IYZ = -.1893-002 J = .2313-004 IW = .3274-006
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 92

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	.7500	.3580-001
3	-.7500	.7500	.3580-001

CENTROID = (-.1875 , .5825) SHEAR CENTER = (.8674-018 , .7500) AREA = .5385-001
IY = .3155-002 IZ = .3155-002 IYZ = -.1893-002 J = .2313-004 IW = .2374-038
PRINCIPLE M OF I: IYP = .3156-002 IZP = -.3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 93

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	.7500	.3580-001
3	-.7500	.7500	.3580-001

CENTROID = (-.1875 , .5825) SHEAR CENTER = (.8674-018 , .7500) AREA = .5385-001
IY = .3155-002 IZ = .3155-002 IYZ = -.1893-002 J = .2313-004 IW = .2374-038
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 112

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	-.7500	.3580-001
3	-.7500	-.7500	.3580-001

CENTROID = (-.1875 , -.5825) SHEAR CENTER = (.8674-018 , -.7500) AREA = .5385-001
IY = .3155-002 IZ = .3155-002 IYZ = .1893-002 J = .2313-004 IW = .2374-038
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 113

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	-.7500	.3580-001
3	-.7500	-.7500	.3580-001

CENTROID = (-.1875 , -.5825) SHEAR CENTER = (.8674-018 , -.7500) AREA = .5385-001
IY = .3155-002 IZ = .3155-002 IYZ = .1893-002 J = .2313-004 IW = .2374-038
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 114

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	-.7500	.3580-001
3	-.7500	-.7500	.3580-001

CENTROID = (-.1875 , -.5825) SHEAR CENTER = (.8674-018 , -.7500) AREA = .5385-001
IY = .3155-002 IZ = .3155-002 IYZ = .1893-002 J = .2313-004 IW = .2374-038
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 115

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	-.7500	.3580-001
3	-.7500	-.7500	.3580-001

CENTROID = (-.1875 , -.5825) SHEAR CENTER = (.8674-018 , -.7500) AREA = .5385-001

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IY = .3155-002 IZ = .3155-002 IYZ = .1893-002 J = .2313-004 IW = .2374-038
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 116

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	-.7500	.3580-001
3	-.7500	-.7500	.3580-001

CENTROID = (-.1875 , -.5825) SHEAR CENTER = (.8674-018 , -.7500) AREA = .5385-001
IY = .3155-002 IZ = .3155-002 IYZ = .1893-002 J = .2313-004 IW = .2374-038
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 117

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	-.7500	.3580-001
3	-.7500	-.7500	.3580-001

CENTROID = (-.1875 , -.5825) SHEAR CENTER = (.8674-018 , -.7500) AREA = .5385-001
IY = .3155-002 IZ = .3155-002 IYZ = .1893-002 J = .2313-004 IW = .2374-038
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 118

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	-.7500	.3580-001
3	-.7500	-.7500	.3580-001

CENTROID = (-.1875 , -.5825) SHEAR CENTER = (.8674-018 , -.7500) AREA = .5385-001
IY = .3155-002 IZ = .3155-002 IYZ = .1893-002 J = .2313-004 IW = .2374-038
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 119

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	-.7500	.3580-001
3	-.7500	-.7500	.3580-001

CENTROID = (-.1875 , -.5825) SHEAR CENTER = (.8674-018 , -.7500) AREA = .5385-001
IY = .3155-002 IZ = .3155-002 IYZ = .1893-002 J = .2313-004 IW = .2374-038
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 120

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	-.7500	.3580-001
3	-.7500	-.7500	.3580-001

CENTROID = (-.1875 , -.5825) SHEAR CENTER = (.8674-018 , -.7500) AREA = .5385-001
IY = .3155-002 IZ = .3155-002 IYZ = .1893-002 J = .2313-004 IW = .2374-038
PRINCIPLE M OF I: IYP = .3155-002 IZP = .3155-002 THETAP = .0000

*** CROSS SECTION PARAMETERS, ELEMENT 121

PT	Y-COORD	Z-COORD	THICK
1	.0000	.0000	.0000
2	.0000	-.7500	.3580-001
3	-.7500	-.7500	.3580-001

SARGENT & LUNDY

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CENTROID = (  -.1875        ,   -.5625    )      SHEAR CENTER = (   .8674-018 ,   -.7500    )      AREA =     .5385-001
IY =     .3155-002      IZ =     .3155-002      IYZ =     .1893-002      J =     .2313-004      IW =     .2374-038
PRINCIPLE M OF I:      IYP =     .3155-002      IZP =     .3155-002      THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     122
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000           -.7500            .3590-001
  3       -.7500           -.7500            .3590-001

CENTROID = (  -.1875        ,   -.5625    )      SHEAR CENTER = (   .8674-018 ,   -.7500    )      AREA =     .5385-001
IY =     .3155-002      IZ =     .3155-003      IYZ =     .1893-002      J =     .2313-004      IW =     .2374-038
PRINCIPLE M OF I:      IYP =     .3155-002      IZP =     .3155-002      THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     123
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000           -.7500            .3590-001
  3       -.7500           -.7500            .3590-001

CENTROID = (  -.1875        ,   -.5625    )      SHEAR CENTER = (   .8674-018 ,   -.7500    )      AREA =     .5385-001
IY =     .3155-002      IZ =     .3155-002      IYZ =     .1893-002      J =     .2313-004      IW =     .2374-038
PRINCIPLE M OF I:      IYP =     .3155-002      IZP =     .3155-002      THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     124
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000           -.7500            .3590-001
  3       -.7500           -.7500            .3590-001

CENTROID = (  -.1875        ,   -.5625    )      SHEAR CENTER = (   .8674-018 ,   -.7500    )      AREA =     .5385-001
IY =     .3155-002      IZ =     .3155-002      IYZ =     .1893-002      J =     .2313-004      IW =     .2374-038
PRINCIPLE M OF I:      IYP =     .3155-002      IZP =     .3155-002      THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     125
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000           -.7500            .3590-001
  3       -.7500           -.7500            .3590-001

CENTROID = (  -.1875        ,   -.5625    )      SHEAR CENTER = (   .8674-018 ,   -.7500    )      AREA =     .5385-001
IY =     .3155-002      IZ =     .3155-002      IYZ =     .1893-002      J =     .2313-004      IW =     .2374-038
PRINCIPLE M OF I:      IYP =     .3155-002      IZP =     .3155-002      THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     126
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000           -.7500            .3590-001
  3       -.7500           -.7500            .3590-001

CENTROID = (  -.1875        ,   -.5625    )      SHEAR CENTER = (   .8674-018 ,   -.7500    )      AREA =     .5385-001
IY =     .3155-002      IZ =     .3155-002      IYZ =     .1893-002      J =     .2313-004      IW =     .2374-038
PRINCIPLE M OF I:      IYP =     .3155-002      IZP =     .3155-002      THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     127
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
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  2        .0000           -.7500            .3590-001
  3       -.7500           -.7500            .3590-001

CENTROID = (  -.1875        ,   -.5625    )      SHEAR CENTER = (   .8674-018 ,   -.7500    )      AREA =     .5385-001
IY =     .3155-002      IZ =     .3155-002      IYZ =     .1893-002      J =     .2313-004      IW =     .2374-038
PRINCIPLE M OF I:      IYP =     .3155-002      IZP =     .3155-002      THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     128
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000           -.7500            .3590-001
  3       -.7500           -.7500            .3590-001

CENTROID = (  -.1875        ,   -.5625    )      SHEAR CENTER = (   .8674-018 ,   -.7500    )      AREA =     .5385-001
IY =     .3155-002      IZ =     .3155-002      IYZ =     .1893-002      J =     .2313-004      IW =     .2374-038
PRINCIPLE M OF I:      IYP =     .3155-002      IZP =     .3155-002      THETAP =     .0000

*** CROSS SECTION PARAMETERS, ELEMENT     129
 PT       Y-COORD          Z-COORD          THICK
  1        .0000            .0000            .0000
  2        .0000           -.7500            .3590-001
  3       -.7500           -.7500            .3590-001

CENTROID = (  -.1875        ,   -.5625    )      SHEAR CENTER = (   .8674-018 ,   -.7500    )      AREA =     .5386-001
IY =     .3155-002      IZ =     .3155-002      IYZ =     .1893-002      J =     .2313-004      IW =     .2374-038
PRINCIPLE M OF I:      IYP =     .3155-002      IZP =     .3155-002      THETAP =     .0000

 RANGE OF ELEMENT MAXIMUM STIFFNESS IN GLOBAL COORDINATES


MAXIMUM=  .104361+008  AT ELEMENT      11.
MINIMUM=  .290678+006  AT ELEMENT     128.

 INTEGER STORAGE REQUIREMENTS FOR ELEMENT FORMULATION              CP=   273.783  TIME= 13.88888
 MEMORY REQUIRED=     1208  MEMORY AVAILABLE= 4002000

  *** ELEMENT STIFFNESS FORMULATION TIMES
 TYPE  NUMBER  STIF  TOTAL CP   AVE CP

   1       15    24     6.803      .480
   2       80    48    70.080     1.186
   3       36    24    43.255     1.202
   4       33    63    85.770     2.902


TIME AT END OF ELEMENT STIFFNESS FORMULATION  CP=     273.782


MAXIMUM IN-CORE WAVE FRONT ALLOWED FOR REQUESTED MEMORY SIZE= 1998.

 INTEGER STORAGE REQUIREMENTS FOR WAVE FRONT MATRIX SOLUTION       CP=   348.833  TIME= 13.88000
 MEMORY REQUIRED=    13529  MEMORY AVAILABLE= 4002000


MAXIMUM IN-CORE WAVE FRONT=     108.

     MATRIX SOLUTION TIMES
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3308

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READ IN ELEMENT STIFFNESSES CP= 13.677

NODAL COORD. TRANSFORMATION CP= .000
MATRIX TRIANGULARIZATION CP= 61.407

TIME AT END OF MATRIX TRIANGULARIZATION CP= 350.021

TIME AT START OF BACK SUBSTITUTION CP= 350.123 LOAD STEP= 1 ITERATION= 1 CUM. ITER.= 1

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ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-880-8855

HVAC PENETRATION WITH FIRE DAMPER - UNIFORM EXPANSION 13.6822 1/15/88 CP= 358.027

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 1 ITERATION= 1 CUM. ITER.= 1

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	.000000	.000000	.885128-002	-.875834-015	.000000	.000000
2	.264418-002	-.380778-015	.885128-002	-.737030-015	-.845712-018	-.440578-018
3	.528837-002	-.128533-014	.885128-002	-.423712-015	-.108823-017	-.739532-018
4	.793255-002	-.198832-014	.885128-002	-.272080-015	-.114811-017	-.882778-018
5	.105767-001	-.268717-014	.885128-002	-.141440-015	-.129881-017	-.886528-018
6	.132209-001	-.325540-014	.885128-002	-.580361-016	-.127087-017	-.717397-018
7	.158851-001	-.384305-014	.885128-002	.440118-017	.411521-017	-.349112-018
8	.158851-001	.286827-002	.885128-002	-.123921-017	.289726-017	.129681-017
9	.158851-001	.573853-002	.885128-002	-.131803-017	-.293497-018	.946009-017
10	.158851-001	.860480-002	.885128-002	.229588-017	-.311706-017	-.875288-017
11	.132209-001	.860480-002	.885128-002	.678414-016	.806170-018	-.328812-018
12	.105787-001	.860480-002	.885128-002	.130871-015	.589635-018	-.442859-018
13	.793255-002	.860480-002	.885128-002	.185062-015	.510549-018	-.456389-018
14	.528837-002	.860480-002	.885128-002	.218035-015	.515208-018	-.381874-018
15	.264418-002	.860480-002	.885128-002	.240124-015	.422034-018	-.219758-018
16	.000000	.860480-002	.885128-002	.164877-015	.000000	.000000
17	.000000	.000000	.477588-002	.123170-015	.000000	.000000
18	.264418-002	-.887291-015	.477588-002	.280742-016	.422182-017	-.287098-018
19	.528837-002	-.191098-014	.477588-002	-.412508-017	.323856-017	-.198907-018
20	.793255-002	-.231322-014	.477588-002	-.473373-016	.978811-018	-.812581-018
21	.105767-001	-.283450-014	.477588-002	-.286377-016	-.737183-020	-.163028-015
22	.132209-001	-.335928-014	.477588-002	-.268144-016	-.415810-018	-.617148-018
23	.158851-001	-.384794-014	.477588-002	.615539-017	.889498-018	-.485114-018
24	.158851-001	.286827-002	.477588-002	.218704-017	.398105-018	.182880-018
25	.158851-001	.573853-002	.477588-002	.175708-018	.129894-018	.176246-018
26	.158851-001	.860480-002	.477588-002	-.345420-017	.415893-017	-.173710-018
27	.132209-001	.860480-002	.477588-002	.528015-018	.109754-017	-.168831-018
28	.105787-001	.860480-002	.477588-002	.125389-015	-.978578-018	-.838268-018
29	.793255-002	.860480-002	.477588-002	.238524-015	-.112751-017	-.837818-018
30	.528837-002	.860480-002	.477588-002	.383584-015	-.247037-017	-.882875-018
31	.264418-002	.860480-002	.477588-002	.541678-015	-.382424-017	-.178988-015
32	.000000	.860480-002	.477588-002	.884213-015	.000000	.000000
33	.000000	.000000	.370008-002	-.888939-017	.000000	.000000
34	.264418-002	-.577474-015	.370008-002	.136133-015	.145647-018	-.157368-018
35	.528837-002	-.142853-014	.370008-002	.132005-015	.750028-017	-.172883-018
36	.793255-002	-.220484-014	.370008-002	.101868-015	.180248-017	-.145422-018
37	.105787-001	-.283444-014	.370008-002	.415249-016	.175431-017	-.123880-015
38	.132209-001	-.335500-014	.370008-002	.204116-016	-.448080-018	-.896855-018
39	.158851-001	-.385112-014	.370008-002	-.842035-017	-.107442-018	-.387214-018
40	.158851-001	.286827-002	.370008-002	.387528-017	.787588-017	.118779-016
41	.158851-001	.573853-002	.370008-002	.406358-017	.118847-018	.125561-018
42	.158851-001	.860480-002	.370008-002	-.480310-017	.711423-017	-.289674-018
43	.132209-001	.860480-002	.370008-002	.585752-018	.328072-018	-.703485-018
44	.105787-001	.860480-002	.370008-002	.145510-016	-.528854-018	-.103614-015
45	.793255-002	.860480-002	.370008-002	.238621-015	-.145287-017	-.135840-015
46	.528837-002	.860480-002	.370008-002	.338573-015	-.587987-017	-.174402-015
47	.264418-002	.860480-002	.370008-002	.350672-015	-.217806-016	-.200581-015
48	.000000	.860480-002	.370008-002	.143788-015	.000000	.000000

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49	.000000	.573833-002	.370006-002	.862280-018	.000000	.000000
50	.000000	.286847-002	.370006-002	-.197443-017	.000000	.000000
51	.000000	.000000	.107560-002	.238710-017	.000000	.000000

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ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8665

HVAC PENETRATION WITH FIRE DAMPER - UNIFORM EXPANSION 13.6825 1/15/85 CP= 358.667

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 1 ITERATION= 1 CUM. ITER.= 1

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	.284418-002	-.218045-015	.107560-002	.886481-018	-.487504-017	-.887149-018
53	.528837-002	-.850858-015	.107560-002	.100687-015	-.525393-017	-.158042-015
54	.783255-002	-.189103-014	.107560-002	.884557-018	-.432304-017	-.173715-015
55	.105767-001	-.254338-014	.107560-002	.814821-018	-.306785-017	-.188306-015
56	.132209-001	-.324807-014	.107560-002	.231003-018	-.138581-017	-.115016-015
57	.158651-001	-.385377-014	.107560-002	.884853-017	.108008-016	-.427108-018
58	.158651-001	.286827-002	.107560-002	-.532953-017	.454857-017	.202373-018
59	.158651-001	.573853-002	.107560-002	-.492253-017	.140987-016	.153767-018
60	.158651-001	.860480-002	.107560-002	.878777-017	-.110174-016	-.828728-018
61	.132209-001	.860480-002	.107560-002	.885198-016	.298298-017	-.127387-015
62	.105767-001	.860480-002	.107560-002	.136469-015	.501318-017	-.167502-015
63	.783255-002	.860480-002	.107560-002	.198886-015	.640251-017	-.178648-015
64	.528837-002	.860480-002	.107560-002	.194364-015	.809598-017	-.180767-015
65	.284418-002	.860480-002	.107560-002	.112928-015	.189947-017	-.775137-016
66	.000000	.860480-002	.107560-002	.183329-017	.000000	.000000
67	.000000	.573833-002	.107560-002	-.845339-018	.000000	.000000
68	.000000	.286847-002	.107560-002	-.882608-018	.000000	.000000
69	.000000	.000000	.000000	.843087-017	.000000	.000000
70	.284418-002	-.119873-015	.000000	.474427-016	-.314175-017	-.648858-018
71	.528837-002	-.856957-015	.000000	.880605-016	-.442939-017	-.153062-015
72	.783255-002	-.150240-014	.000000	.834871-016	-.402722-017	-.182787-015
73	.105767-001	-.242222-014	.000000	.598887-018	-.274142-017	-.184185-015
74	.132209-001	-.320514-014	.000000	.105777-018	-.558195-018	-.138217-015
75	.158651-001	-.385353-014	.000000	-.573441-017	-.533870-017	-.434901-016
76	.158651-001	.286827-002	.000000	-.241235-017	.118027-017	.384060-016
77	.158651-001	.573653-002	.000000	-.200366-017	.184375-018	.258311-015
78	.158651-001	.860480-002	.000000	-.420732-017	.775543-017	-.888878-018
79	.132208-001	.860480-002	.000000	.522850-018	.203500-017	-.174688-015
80	.105767-001	.860480-002	.000000	.132390-015	.450029-017	-.215765-015
81	.783258-002	.860480-002	.000000	.190326-015	.552901-017	-.204759-015
82	.528837-002	.860480-002	.000000	.182487-015	.474583-017	-.130498-015
83	.264418-002	.860480-002	.000000	.838824-016	.244073-017	-.229684-016
84	.000000	.860480-002	.000000	.833972-018	.000000	.000000

MAXIMUMS						
NODE	24	84	13	32	47	18
VALUE	.158651-001	.860480-002	.885126-002	.894213-015	-.217806-016	-.267098-015

INTEGER STORAGE REQUIREMENTS FOR BACK SUBSTITUTION CP= 359.148 TIME= 13.66250
MEMORY REQUIRED= 2230 MEMORY AVAILABLE= 4002000

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ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-6655

HVAC PENETRATION WITH FIRE DAMPER - UNIFORM EXPANSION 13.6928 1/15/86 CP= 369.838

***** ELEMENT STRESSES ***** TIME = .000000 LOAD STEP= 1 ITERATION= 1 CUM. ITER.= 1

EL= 1 NODES= 1 2 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	.67314-010									
	2	150.00	.48858-010									
	3	150.00	-.50602-008									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-.35403-011									
	2	150.00	.38233-010									
	3	150.00	-.40894-008									

EL= 2 NODES= 2 3 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	.87781-010									
	2	150.00	.22462-010									
	3	150.00	-.41868-008									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-.69048-010									
	2	150.00	.88930-011									
	3	150.00	-.22738-008									

EL= 3 NODES= 3 4 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	.90831-010									
	2	150.00	.29787-011									
	3	150.00	-.28068-008									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-.95858-010									
	2	150.00	-.78130-011									
	3	150.00	-.72688-010									

EL= 4 NODES= 4 5 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	.68828-010									
	2	150.00	-.15773-010									
	3	150.00	-.12469-008									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-.11766-008									
	2	150.00	-.30910-010									
	3	150.00	.82072-010									

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EL= 5 NODES= 5 6 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	.30105-010									
	2	150.00	-.35330-010									
	3	150.00	.39505-010									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-.12784-008									
	2	150.00	-.60690-010									
	3	150.00	.24680-009									

EL= 6 NODES= 6 7 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-.90438-010									
	2	150.00	-.62870-010									
	3	150.00	.23910-009									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-.14881-010									
	2	150.00	-.16558-008									
	3	150.00	.36812-008									

EL= 7 NODES= 7 8 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-.10450-010									
	2	150.00	-.18081-008									
	3	150.00	.38687-008									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-.73052-010									
	2	150.00	-.40823-010									
	3	150.00	.14891-008									

EL= 8 NODES= 8 9 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-.89601-010									
	2	150.00	-.39700-010									
	3	150.00	.18418-009									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	.60917-010									
	2	150.00	.90338-011									
	3	150.00	-.54105-010									

EL= 9 NODES= 9 10 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX

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          1   150.00     .28322-011
          2   150.00     .10938-010
          3   150.00    -.33132-010
END J  PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX
          1   150.00     .31788-010
          2   150.00     .88201-010
          3   150.00    -.23881-008


EL=   10  NODES=   10   11  MAT=  2  PRESSURES(Z,Y)=    .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID=   .4844      1.453      SHEAR CENTER=    .0000      1.837      AREA=  .4844      J=  .2523-002  IW=  .5700-036
 PRINCIPLE M OF I:      IYP=  .1894      IZP=  .1894      THETAP=  .0000
END I  PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX
          1   150.00    -.24245-010
          2   150.00     .11351-008
          3   150.00    -.22150-008
END J  PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX
          1   150.00     .89020-010
          2   150.00     .33913-010
          3   150.00    -.17550-008


EL=   11  NODES=   11   12  MAT=  2  PRESSURES(Z,Y)=    .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID=   .4844      1.453      SHEAR CENTER=    .0000      1.837      AREA=  .4844      J=  .2523-002  IW=  .5700-036
 PRINCIPLE M OF I:      IYP=  .1894      IZP=  .1894      THETAP=  .0000
END I  PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX
          1   150.00     .43265-010
          2   150.00     .35427-010
          3   150.00    -.16012-008
END J  PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX
          1   150.00    -.10255-011
          2   150.00     .74956-011
          3   150.00    -.58989-010


EL=   12  NODES=   12   13  MAT=  2  PRESSURES(Z,Y)=    .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID=   .4844      1.453      SHEAR CENTER=    .0000      1.837      AREA=  .4844      J=  .2523-002  IW=  .5700-036
 PRINCIPLE M OF I:      IYP=  .1894      IZP=  .1894      THETAP=  .0000
END I  PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX
          1   150.00     .39334-010
          2   150.00     .64946-011
          3   150.00    -.76641-010
END J  PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX
          1   150.00    -.41087-010
          2   150.00    -.10157-010
          3   150.00     .37063-010


EL=   13  NODES=   13   14  MAT=  2  PRESSURES(Z,Y)=    .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID=   .4844      1.453      SHEAR CENTER=    .0000      1.837      AREA=  .4844      J=  .2523-002  IW=  .5700-036
 PRINCIPLE M OF I:      IYP=  .1894      IZP=  .1894      THETAP=  .0000
END I  PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX
          1   150.00     .23122-010
          2   150.00    -.11475-010
          3   150.00     .11522-010
END J  PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX
          1   150.00    -.81088-010
          2   150.00    -.25807-010
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          3   150.00     .12445-008


EL=   14  NODES=   14   15  MAT=  2  PRESSURES(Z,Y)=    .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID=   .4844      1.453      SHEAR CENTER=    .0000      1.837      AREA=  .4844      J=  .2523-002  IW=  .5700-036
 PRINCIPLE M OF I:      IYP=  .1894      IZP=  .1894      THETAP=  .0000
END I  PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX
          1   150.00     .51781-011
          2   150.00    -.28420-010
          3   150.00     .10079-009
END J  PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX
          1   150.00    -.71245-010
          2   150.00    -.38454-010
          3   150.00     .19825-009


EL=   15  NODES=   15   16  MAT=  2  PRESSURES(Z,Y)=    .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID=   .4844      1.453      SHEAR CENTER=    .0000      1.837      AREA=  .4844      J=  .2523-002  IW=  .5700-036
 PRINCIPLE M OF I:      IYP=  .1894      IZP=  .1894      THETAP=  .0000
END I  PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX
          1   150.00    -.20861-010
          2   150.00    -.40481-010
          3   150.00     .17892-009
END J  PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX          PT     TEMP         SIGX
          1   150.00    -.58038-010
          2   150.00    -.48172-010
          3   150.00     .23144-008


EL=   16  NODES=    1    2   17      MAT=  2  AREA=  4.82      FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=  1.84      -8.00      5.77      TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ= -.15188-008  -.80685-008   .14788-010   .00000      SIG1,SIG2,SIG3= -.34583-027  -.15184-008  -.80688-008
    S.I.=   .80688-008   SIGE=   .74290-008
MID SX,SY,SXY,SZ=  .30128-010  -.82703-011  -.48831-012   .00000      SIG1,SIG2,SIG3=  .30134-010   .28609-021  -.82768-011
    S.I.=   .36411-010   SIGE=   .33714-010
BOT SX,SY,SXY,SZ=  .21167-008   .78365-008  -.15765-010   .00000      SIG1,SIG2,SIG3=  .78398-008   .21115-008  -.32887-020
    S.I.=   .78398-008   SIGE=   .71228-008


EL=   17  NODES=   17    2   18      MAT=  2  AREA=  4.82      FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=  3.28      -8.00      5.11      TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ= -.82833-010  -.16788-008   .84398-010   .00000      SIG1,SIG2,SIG3=  .72830-028  -.21918-010  -.22887-008
    S.I.=   .22887-008   SIGE=   .21884-008
MID SX,SY,SXY,SZ=  .22776-010  -.88407-011  -.80820-011   .00000      SIG1,SIG2,SIG3=  .25119-010   .25367-021  -.12283-010
    S.I.=   .37402-010   SIGE=   .33020-010
BOT SX,SY,SXY,SZ=  .12793-008   .14752-008  -.11252-009   .00000      SIG1,SIG2,SIG3=  .25067-008   .24775-010  -.88745-021
    S.I.=   .25067-008   SIGE=   .23825-008


EL=   18  NODES=   18    2   19      MAT=  2  AREA=  4.82      FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=  5.55      -8.00      5.11      TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ= -.35600-008  -.12518-008   .18348-010   .00000      SIG1,SIG2,SIG3=  .48317-027  -.12371-008  -.35748-008
    S.I.=   .35748-008   SIGE=   .31441-008
MID SX,SY,SXY,SZ= -.88272-012   .87858-011   .18182-010   .00000      SIG1,SIG2,SIG3=  .20506-010   .28014-021  -.18022-010
    S.I.=   .38927-010   SIGE=   .32072-010
BOT SX,SY,SXY,SZ=  .35368-008   .12814-008   .54872-010   .00000      SIG1,SIG2,SIG3=  .38858-008   .12317-008  -.88882-021
    S.I.=   .38868-008   SIGE=   .32317-008


EL=   19  NODES=    2    3   19      MAT=  2  AREA=  4.82      FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=  8.15      -8.00      5.77      TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ= -.15532-010  -.14288-008   .87048-010   .00000      SIG1,SIG2,SIG3=  .13291-010   .14820-020  -.17180-008
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     S.I.=  .18480-008  SIGE=  .17852-008
MID SX,SY,SXY,SZ=  .15199-010  .17520-011  -.28294-010  .00000      SIG1,SIG2,SIG3=  .35818-010  .42649-021  -.18684-010
     S.I.=  .54280-010  SIGE=  .47766-010
BOT SX,SY,SXY,SZ=  .45373-010  .14583-008  .14481-010  .00000      SIG1,SIG2,SIG3=  .14787-008  .43328-010  -.40992-021
     S.I.=  .14787-008  SIGE=  .13148-008

EL=   20  NODES=    3    4   19     MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=  .0000       .0000       XC,YC,ZC=  11.5       -8.00       5.77       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -.68141-010  -.29958-008  -.22786-010  .00000      SIG1,SIG2,SIG3=  .12892-027  -.85486-010  -.30223-008
     S.I.=  .30223-008  SIGE=  .28984-008
MID SX,SY,SXY,SZ=  -.40112-011  -.40112-011  -.25893-010  .00000      SIG1,SIG2,SIG3=  .21682-010  .40375-021  -.29704-010
     S.I.=  .51386-010  SIGE=  .44682-010
BOT SX,SY,SXY,SZ=  .79580-010  .29100-008  -.27580-010  .00000      SIG1,SIG2,SIG3=  .29454-008  .76020-010  -.85848-021
     S.I.=  .29454-008  SIGE=  .26484-008

EL=   21  NODES=   19    4   20     MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=  .0000       .0000       XC,YC,ZC=  13.1       -8.00       5.11       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -.67103-010  -.14880-008  .44772-011  .00000      SIG1,SIG2,SIG3=  .00000      -.86858-010  -.14805-008
     S.I.=  .14805-008  SIGE=  .12931-008
MID SX,SY,SXY,SZ=  .14845-010  -.18861-010  -.21214-010  .00000      SIG1,SIG2,SIG3=  .25086-010  .42824-021  -.29182-010
     S.I.=  .54249-010  SIGE=  .47026-010
BOT SX,SY,SXY,SZ=  .98236-010  .11032-008  .46904-010  .00000      SIG1,SIG2,SIG3=  .15071-008  .55848-010  -.37267-021
     S.I.=  .15071-008  SIGE=  .13197-008

EL=   22  NODES=   20    4   21     MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=  .0000       .0000       XC,YC,ZC=  15.4       -8.00       5.11       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -.11672-008  -.33077-010  .35620-010  .00000      SIG1,SIG2,SIG3=  -.15446-027  -.20262-010  -.13152-008
     S.I.=  .13153-008  SIGE=  .12268-008
MID SX,SY,SXY,SZ=  -.28843-011  -.18858-010  .27590-010  .00000      SIG1,SIG2,SIG3=  .18580-010  .44724-021  -.38332-010
     S.I.=  .56921-010  SIGE=  .50274-010
BOT SX,SY,SXY,SZ=  .11235-008  -.11968-011  .15860-010  .00000      SIG1,SIG2,SIG3=  .11570-008  .84445-021  -.45030-011
     S.I.=  .12020-008  SIGE=  .11802-008

EL=   23  NODES=    4    5   21     MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=  .0000       .0000       XC,YC,ZC=  15.0       -8.00       5.77       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -.28279-010  -.18250-0.0  -.34678-010  .00000      SIG1,SIG2,SIG3=  .11772-010  .55058-021  -.50301-010
     S.I.=  .70074-010  SIGE=  .64892-010
MID SX,SY,SXY,SZ=  -.22888-010  .50558-011  -.20898-010  .00000      SIG1,SIG2,SIG3=  .17080-010  .40085-021  -.33902-010
     S.I.=  .50982-010  SIGE=  .44853-010
BOT SX,SY,SXY,SZ=  -.18014-010  .29803-010  -.73180-011  .00000      SIG1,SIG2,SIG3=  .30898-010  .38282-021  -.18108-010
     S.I.=  .50008-010  SIGE=  .43707-010

EL=   24  NODES=    5    6   21     MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=  .0000       .0000       XC,YC,ZC=  21.3       -8.00       5.77       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -.80668-010  -.54639-010  -.27113-010  .00000      SIG1,SIG2,SIG3=  .00000      -.58854-010  -.11585-008
     S.I.=  .11585-008  SIGE=  .10017-008
MID SX,SY,SXY,SZ=  -.48186-010  -.15428-011  -.24810-010  .00000      SIG1,SIG2,SIG3=  .81847-011  .53513-021  -.58823-010
     S.I.=  .88106-010  SIGE=  .84011-010
BOT SX,SY,SXY,SZ=  -.16283-010  .80986-010  -.22507-010  .00000      SIG1,SIG2,SIG3=  .85526-010  .91411-021  -.20814-010
     S.I.=  .11834-008  SIGE=  .10746-008

EL=   25  NODES=   21    6   22     MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=  .0000       .0000       XC,YC,ZC=  22.9       -8.00       5.11       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -.45225-010  -.35635-010  -.15814-010  .00000      SIG1,SIG2,SIG3=  .00000      -.24034-010  -.57026-010
     S.I.=  .57026-010  SIGE=  .48589-010
MID SX,SY,SXY,SZ=  -.17838-010  -.35338-011  -.18378-010  .00000      SIG1,SIG2,SIG3=  .72463-011  .28022-021  -.28418-010
     S.I.=  .35685-010  SIGE=  .32850-010
BOT SX,SY,SXY,SZ=  .93807-011  .28210-010  -.16843-010  .00000      SIG1,SIG2,SIG3=  .38181-010  .30455-021  -.58048-012
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SARGENT & LUNDY

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     S.I.=  .38781-010  SIGE=  .38474-010

EL=   26  NODES=   22    6   23     MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=  .0000       .0000       XC,YC,ZC=  26.2       -8.00       5.11       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -.24547-010  -.34051-010  .81789-011  .00000      SIG1,SIG2,SIG3=  -.28534-028  -.19838-010  -.38788-010
     S.I.=  .38788-010  SIGE=  .33588-010
MID SX,SY,SXY,SZ=  .69357-011  -.23180-010  .33619-011  .00000      SIG1,SIG2,SIG3=  .73063-011  .24252-021  -.23880-010
     S.I.=  .30886-010  SIGE=  .27938-010
BOT SX,SY,SXY,SZ=  .37880-010  -.12867-010  -.14581-011  .00000      SIG1,SIG2,SIG3=  .37802-010  .38938-021  -.12928-010
     S.I.=  .50831-010  SIGE=  .45757-010

EL=   27  NODES=    6    7   23     MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=  .0000       .0000       XC,YC,ZC=  27.8       -8.00       5.77       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -.57052-010  .20048-010  .14812-010  .00000      SIG1,SIG2,SIG3=  .22829-010  .64851-021  -.59838-010
     S.I.=  .82684-010  SIGE=  .73942-010
MID SX,SY,SXY,SZ=  -.55801-010  .10300-010  .23777-010  .00000      SIG1,SIG2,SIG3=  .29819-028  -.15811-012  -.66043-010
     S.I.=  .86043-010  SIGE=  .65964-010
BOT SX,SY,SXY,SZ=  -.55308-010  -.41204-010  .32643-010  .00000      SIG1,SIG2,SIG3=  -.47872-028  -.14880-010  -.81852-010
     S.I.=  .81852-010  SIGE=  .75328-010

EL=   28  NODES=    7    8   23     MAT=  2  AREA=  5.33      FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=  .0000       .0000       XC,YC,ZC=  29.5       -9.22       5.77       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -.48719-010  .59812-011  -.25867-010  .00000      SIG1,SIG2,SIG3=  .15148-010  .58847-021  -.56875-010
     S.I.=  .79023-010  SIGE=  .68396-010
MID SX,SY,SXY,SZ=  -.43452-010  -.65854-011  -.28510-010  .00000      SIG1,SIG2,SIG3=  .89468-011  .53259-021  -.58884-010
     S.I.=  .87911-010  SIGE=  .83906-010
BOT SX,SY,SXY,SZ=  -.38743-010  -.19680-010  .31383-010  .00000      SIG1,SIG2,SIG3=  .35579-011  .51495-021  -.61861-010
     S.I.=  .85539-010  SIGE=  .83635-010

EL=   29  NODES=   23    8   24     MAT=  2  AREA=  5.33      FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=  .0000       .0000       XC,YC,ZC=  29.5       -4.44       5.11       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -.24558-010  -.16426-010  -.12315-010  .00000      SIG1,SIG2,SIG3=  -.42601-028  -.75232-011  -.33460-010
     S.I.=  .33460-010  SIGE=  .30405-010
MID SX,SY,SXY,SZ=  -.11186-010  -.10732-013  -.85034-011  .00000      SIG1,SIG2,SIG3=  .54260-011  .17324-021  -.18822-010
     S.I.=  .22068-010  SIGE=  .19896-010
BOT SX,SY,SXY,SZ=  .18286-011  -.15448-010  -.86921-011  .00000      SIG1,SIG2,SIG3=  .18600-010  .15342-021  -.10254-011
     S.I.=  .19528-010  SIGE=  .19034-010

EL=   30  NODES=   24    8   25     MAT=  2  AREA=  5.33      FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=  .0000       .0000       XC,YC,ZC=  29.5       -.889       5.11       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  .51380-011  -.80784-011  .31430-011  .00000      SIG1,SIG2,SIG3=  .56018-011  .12214-021  -.57432-011
     S.I.=  .15545-010  SIGE=  .13806-010
MID SX,SY,SXY,SZ=  .73703-011  -.80679-011  -.30050-012  .00000      SIG1,SIG2,SIG3=  .73762-011  .12138-021  -.60738-011
     S.I.=  .15450-010  SIGE=  .13385-010
BOT SX,SY,SXY,SZ=  .80446-011  -.75145-011  -.37440-011  .00000      SIG1,SIG2,SIG3=  .88473-011  .14351-021  -.86172-011
     S.I.=  .18285-010  SIGE=  .15834-010

EL=   31  NODES=    8    9   25     MAT=  2  AREA=  5.33      FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=  .0000       .0000       XC,YC,ZC=  29.5       .889       5.77       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -.23187-010  -.24369-010  .56836-011  .00000      SIG1,SIG2,SIG3=  .42308-028  -.17883-010  -.28682-010
     S.I.=  .28682-010  SIGE=  .25848-010
MID SX,SY,SXY,SZ=  -.17813-010  -.11765-010  .87425-011  .00000      SIG1,SIG2,SIG3=  .30800-028  -.73895-011  -.22178-010
     S.I.=  .22178-010  SIGE=  .19558-010
BOT SX,SY,SXY,SZ=  -.12897-010  .30050-012  .78312-011  .00000      SIG1,SIG2,SIG3=  .37858-011  .15883-021  -.18482-010
     S.I.=  .20227-010  SIGE=  .18832-010

EL=   32  NODES=    9   10   25     MAT=  2  AREA=  5.33      FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=  .0000       .0000       XC,YC,ZC=  29.5       4.44       5.77       TEMPS=  150.0  150.0  150.0  150.0  150.0
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SARGENT & LUNDY

3308

44

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TOP SX,SY,SXY,SZ=  .19272-010 -.73784-011  .12558-011  .00000    SIG1,SIG2,SIG3=  .19331-010  [illegible]  [illegible]
    S.I.=  .28789-010  SIGE=  .23933-010
MID SX,SY,SXY,SZ=  .17087-010 -.13013-011  .13884-011  .00000    SIG1,SIG2,SIG3=  .17171-010  [illegible]  [illegible]
    S.I.=  .18577-010  SIGE=  .17816-010
BOT SX,SY,SXY,SZ=  .14303-010  .42177-011  .15238-011  .00000    SIG1,SIG2,SIG3=  .14529-010  [illegible]  [illegible]
    S.I.=  .14529-010  SIGE=  .13000-010

EL=   33  NODES=   25   10   26     MAT=  2  AREA=  5.33     FBOT,FMID,FTOP=  .000   .000   .000     PL TRI SHELL   48
P1,P2=  .0000      .0000       XC,YC,ZC=  28.5      6.22      5.11     TEMPS=  150.0  [illegible]
TOP SX,SY,SXY,SZ=  .18162-010  .43009-011 -.48758-011  .00000    SIG1,SIG2,SIG3=  .18709-010  [illegible]  [illegible]
    S.I.=  .18706-010  SIGE=  .16481-010
MID SX,SY,SXY,SZ=  .14062-010  .26804-011 -.85549-011  .00000    SIG1,SIG2,SIG3=  .18846-010  [illegible]  [illegible]
    S.I.=  .20550-010  SIGE=  .18887-010
BOT SX,SY,SXY,SZ=  .94041-011  .50173-012 -.12234-010  .00000    SIG1,SIG2,SIG3=  .17871-010  [illegible]  [illegible]
    S.I.=  .28037-010  SIGE=  .23088-010

EL=   34  NODES=   26   10   27     MAT=  2  AREA=  4.92     FBOT,FMID,FTOP=  .000   .000   .000     PL TRI SHELL   48
P1,P2=  .0000      .0000       XC,YC,ZC=  27.9      8.00      5.11     TEMPS=  150.0  [illegible]
TOP SX,SY,SXY,SZ=  .11127-010  .11127-010 -.35651-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .71703-010  SIGE=  .63088-010
MID SX,SY,SXY,SZ=  .11443-010  .12345-010 -.28782-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .57572-010  SIGE=  .51258-010
BOT SX,SY,SXY,SZ=  .11202-010  .13005-010 -.21713-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .43484-010  SIGE=  .38539-010

EL=   35  NODES=   10   11   27     MAT=  2  AREA=  4.92     FBOT,FMID,FTOP=  .000   .000   .000     PL TRI SHELL   48
P1,P2=  .0000      .0000       XC,YC,ZC=  26.2      8.00      5.77     TEMPS=  150.0  [illegible]
TOP SX,SY,SXY,SZ=  .23828-010 -.46151-010  .19985-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .80570-010  SIGE=  .70663-010
MID SX,SY,SXY,SZ=  .28743-010 -.94202-011  .11325-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .44379-010  SIGE=  .39629-010
BOT SX,SY,SXY,SZ=  .33101-010  .28753-010  .26851-011  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .34084-010  SIGE=  .30781-010

EL=   36  NODES=   11   12   27     MAT=  2  AREA=  4.92     FBOT,FMID,FTOP=  .000   .000   .000     PL TRI SHELL   48
P1,P2=  .0000      .0000       XC,YC,ZC=  22.9      8.00      5.77     TEMPS=  150.0  [illegible]
TOP SX,SY,SXY,SZ=  .25308-010  .32948-011  .16884-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .40315-010  SIGE=  .37729-010
MID SX,SY,SXY,SZ=  .18119-010 -.12808-010  .77943-011  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .34454-010  SIGE=  .29965-010
BOT SX,SY,SXY,SZ=  .10372-010 -.29068-010 -.12992-011  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .39526-010  SIGE=  .35484-010

EL=   37  NODES=   27   12   28     MAT=  2  AREA=  4.92     FBOT,FMID,FTOP=  .000   .000   .000     PL TRI SHELL   48
P1,P2=  .0000      .0000       XC,YC,ZC=  21.3      8.00      5.11     TEMPS=  150.0  [illegible]
TOP SX,SY,SXY,SZ=  .11066-010  .93746-011  .88450-011  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .19105-010  SIGE=  .16474-010
MID SX,SY,SXY,SZ=  .93290-011  .88541-013 -.18781-011  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .99747-011  SIGE=  .98384-011
BOT SX,SY,SXY,SZ=  .70349-011 -.97856-011 -.12801-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .30283-010  SIGE=  .25262-010

EL=   38  NODES=   28   12   29     MAT=  2  AREA=  4.92     FBOT,FMID,FTOP=  .000   .000   .000     PL TRI SHELL   48
P1,P2=  .0000      .0000       XC,YC,ZC=  18.0      8.00      5.11     TEMPS=  150.0  [illegible]
TOP SX,SY,SXY,SZ=  .55815-011 -.77674-011 -.11472-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .27081-010  SIGE=  .23443-010
MID SX,SY,SXY,SZ= -.14140-011 -.77245-011  .28735-011  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .88389-011  SIGE=  .86900-011
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SARGENT & LUNDY

45

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BOT SX,SY,SXY,SZ= -.98575-011 -.82398-011  .17219-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .34481-010  SIGE=  .31219-010

EL=   39  NODES=   12   13   29     MAT=  2  AREA=  4.92     FBOT,FMID,FTOP=  .000   .000   .000     PL TRI SHELL   48
P1,P2=  .0000      .0000       XC,YC,ZC=  16.4      8.00      5.77     TEMPS=  150.0  [illegible]
TOP SX,SY,SXY,SZ=  .10732-011  .12988-011  .58052-011  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .11813-010  SIGE=  .10298-010
MID SX,SY,SXY,SZ= -.18781-013  .24604-011 -.93531-011  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .18870-010  SIGE=  .18387-010
BOT SX,SY,SXY,SZ= -.18889-011  .30840-011 -.24811-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .49450-010  SIGE=  .42830-010

EL=   40  NODES=   13   14   29     MAT=  2  AREA=  4.92     FBOT,FMID,FTOP=  .000   .000   .000     PL TRI SHELL   48
P1,P2=  .0000      .0000       XC,YC,ZC=  13.1      8.00      5.77     TEMPS=  150.0  [illegible]
TOP SX,SY,SXY,SZ= -.88889-011  .88953-010  .29103-012  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .93622-010  SIGE=  .80580-010
MID SX,SY,SXY,SZ= -.19805-010 -.34155-011 -.84140-011  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .23351-010  SIGE=  .23289-010
BOT SX,SY,SXY,SZ= -.32902-010 -.84342-010 -.17119-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .71884-010  SIGE=  .93124-010

EL=   41  NODES=   29   14   30     MAT=  2  AREA=  4.92     FBOT,FMID,FTOP=  .000   .000   .000     PL TRI SHELL   48
P1,P2=  .0000      .0000       XC,YC,ZC=  11.5      8.00      5.11     TEMPS=  150.0  [illegible]
TOP SX,SY,SXY,SZ=  .13780-010  .90615-010 -.18873-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .95000-010  SIGE=  .80888-010
MID SX,SY,SXY,SZ= -.10837-010 -.98724-011 -.18250-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .30523-010  SIGE=  .28353-010
BOT SX,SY,SXY,SZ= -.38012-010 -.11052-009 -.11828-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .11229-009  SIGE=  .99883-010

EL=   42  NODES=   30   14   31     MAT=  2  AREA=  4.92     FBOT,FMID,FTOP=  .000   .000   .000     PL TRI SHELL   48
P1,P2=  .0000      .0000       XC,YC,ZC=  8.19      8.00      5.11     TEMPS=  150.0  [illegible]
TOP SX,SY,SXY,SZ=  .12908-009  .31158-010 -.15023-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .13133-009  SIGE=  .11863-009
MID SX,SY,SXY,SZ= -.17789-011 -.30101-010  .10273-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .34990-010  SIGE=  .34239-010
BOT SX,SY,SXY,SZ= -.13320-009 -.91816-010  .35570-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .15368-009  SIGE=  .13320-009

EL=   43  NODES=   14   15   31     MAT=  2  AREA=  4.92     FBOT,FMID,FTOP=  .000   .000   .000     PL TRI SHELL   48
P1,P2=  .0000      .0000       XC,YC,ZC=  6.55      8.00      5.77     TEMPS=  150.0  [illegible]
TOP SX,SY,SXY,SZ=  .20549-010  .20742-009  .44774-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .21760-009  SIGE=  .21260-009
MID SX,SY,SXY,SZ= -.31850-010  .29701-011 -.80384-011  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .38353-010  SIGE=  .35218-010
BOT SX,SY,SXY,SZ= -.84808-010 -.20204-009 -.90881-010  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .22792-009  SIGE=  .20491-009

EL=   44  NODES=   31   15   16     MAT=  2  AREA=  4.92     FBOT,FMID,FTOP=  .000   .000   .000     PL TRI SHELL   48
P1,P2=  .0000      .0000       XC,YC,ZC=  3.28      8.00      5.77     TEMPS=  150.0  [illegible]
TOP SX,SY,SXY,SZ=  .31778-009  .24448-010  .63401-011  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .31789-009  SIGE=  .30848-009
MID SX,SY,SXY,SZ=  .79888-012 -.39085-010  .81135-011  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .43088-010  SIGE=  .41826-010
BOT SX,SY,SXY,SZ= -.31872-009 -.10320-009  .88870-011  .00000    SIG1,SIG2,SIG3=  [illegible]
    S.I.=  .31718-009  SIGE=  .28030-009

EL=   45  NODES=   16   32   31     MAT=  2  AREA=  4.92     FBOT,FMID,FTOP=  .000   .000   .000     PL TRI SHELL   48
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SARGENT & LUNDY

3308

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P1,P2=   .0000        .0000        XC,YC,ZC=   1.64        8.00        5.11        TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=   .39523-008    .77943-010  -.58124-010    .00000      SIG1,SIG2,SIG3=   .40589-008    .67263-010  -.13303-020
     S.I.=   .40589-008   SIGE=   .37678-008
MID SX,SY,SXY,SZ=  -.31660-012   -.30781-010    .48831-012    .00000      SIG1,SIG2,SIG3=   .10022-028   -.30877-012   -.30769-010
     S.I.=   .30789-010   SIGE=   .30618-010
BOT SX,SY,SXY,SZ=  -.39843-008   -.14002-009    .60101-010    .00000      SIG1,SIG2,SIG3=   .17192-027   -.12883-008   -.40981-008
     S.I.=   .40981-008   SIGE=   .36344-008

EL=   46  NODES=   33   17   34      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=   .000         .000         .000          PL TRI SHELL   46
P1,P2=   .0000        .0000        XC,YC,ZC=   1.64       -8.00        3.11        TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  -.28390-010    .37838-010   .83648-011    .00000      SIG1,SIG2,SIG3=   .39005-010    .52223-021   -.27480-010
     S.I.=   .66468-010   SIGE=   .57850-010
MID SX,SY,SXY,SZ=   .68593-011   -.32750-011   .31928-012    .00000      SIG1,SIG2,SIG3=   .88686-011    .76225-022   -.32842-011
     S.I.=   .98558-011   SIGE=   .87884-011
BOT SX,SY,SXY,SZ=   .38151-010   -.45046-010  -.77281-011    .00000      SIG1,SIG2,SIG3=   .39854-010    .67280-021   -.45749-010
     S.I.=   .85803-010   SIGE=   .74193-010

EL=   47  NODES=   17   18   34      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=   .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=   3.28       -8.00        3.77        TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=   .85809-010    .83708-010  -.50023-010    .00000      SIG1,SIG2,SIG3=   .13478-008    .34724-010   -.39312-021
     S.I.=   .13479-008   SIGE=   .12122-008
MID SX,SY,SXY,SZ=   .11325-010   -.58222-012  -.14358-010    .00000      SIG1,SIG2,SIG3=   .20815-010    .24428-021   -.10172-010
     S.I.=   .31087-010   SIGE=   .27453-010
BOT SX,SY,SXY,SZ=  -.62717-010   -.85428-010   .21306-010    .00000      SIG1,SIG2,SIG3=   .00000       -.50661-010   -.98485-010
     S.I.=   .98485-010   SIGE=   .85302-010

EL=   48  NODES=   34   18   19      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=   .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=   5.56       -8.00        3.77        TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=   .83105-011   -.21599-011   .28178-011    .00000      SIG1,SIG2,SIG3=   .72163-011    .80819-022   -.30678-011
     S.I.=   .10288-010   SIGE=   .91485-011
MID SX,SY,SXY,SZ=  -.23852-011    .83151-011   .14612-010    .00000      SIG1,SIG2,SIG3=   .18576-010    .23746-021   -.13646-010
     S.I.=   .30221-010   SIGE=   .26213-010
BOT SX,SY,SXY,SZ=  -.11639-010    .12232-010   .26306-010    .00000      SIG1,SIG2,SIG3=   .29184-010    .46394-021   -.28591-010
     S.I.=   .57774-010   SIGE=   .50035-010

EL=   49  NODES=   34   19   35      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=   .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=   8.19       -8.00        3.11        TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  -.85777-011   -.78462-010   .21206-011    .00000      SIG1,SIG2,SIG3=  -.10211-027   -.85134-011   -.78548-010
     S.I.=   .78548-010   SIGE=   .74854-010
MID SX,SY,SXY,SZ=   .13842-010   -.13354-010   .14806-010    .00000      SIG1,SIG2,SIG3=   .20422-010    .21708-021   -.19833-010
     S.I.=   .40385-010   SIGE=   .34949-010
BOT SX,SY,SXY,SZ=   .35702-010   -.51217-010  -.27895-010    .00000      SIG1,SIG2,SIG3=   .72220-010    .14700-010   -.22598-021
     S.I.=   .72220-010   SIGE=   .88108-010

EL=   50  NODES=   35   19   36      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=   .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=   11.5       -8.00        3.11        TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  -.53328-010   -.32884-010   .18715-010    .00000      SIG1,SIG2,SIG3=   .00000       -.20908-010   -.65317-010
     S.I.=   .65317-010   SIGE=   .57774-010
MID SX,SY,SXY,SZ=  -.17440-012   -.45592-011   .19589-010    .00000      SIG1,SIG2,SIG3=   .17340-010    .30978-021   -.22064-010
     S.I.=   .39424-010   SIGE=   .34224-010
BOT SX,SY,SXY,SZ=   .52421-010    .23198-010   .18463-010    .00000      SIG1,SIG2,SIG3=   .62147-010    .13472-010   -.18122-021
     S.I.=   .62147-010   SIGE=   .56825-010

EL=   51  NODES=   19   20   36      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=   .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=   13.1       -8.00        3.77        TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  -.63623-010   -.11482-008   .48151-011    .00000      SIG1,SIG2,SIG3=  -.89581-028   -.63210-010   -.11523-008
     S.I.=   .11523-008   SIGE=   .99852-010
MID SX,SY,SXY,SZ=  -.51595-011   -.35148-012   .18118-010    .00000      SIG1,SIG2,SIG3=   .16514-010    .30281-021    .22026-010
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     S.I.=   .38540-010   SIGE=   .33490-010
BOT SX,SY,SXY,SZ=   .52746-010    .11358-008  -.33624-010    .00000      SIG1,SIG2,SIG3=   .12848-008    .37819-010   -.35818-021
     S.I.=   .12848-008   SIGE=   .11437-008

EL=   52  NODES=   38   20   21      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=   .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=   16.4       -8.00        3.77        TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  -.51077-010   -.15055-010   .42643-012    .00000      SIG1,SIG2,SIG3=  -.22151-028   -.15080-010   -.51082-010
     S.I.=   .51082-010   SIGE=   .45488-010
MID SX,SY,SXY,SZ=  -.39575-011   -.17180-010   .18702-010    .00000      SIG1,SIG2,SIG3=   .10213-010    .32856-021   -.31380-010
     S.I.=   .41582-010   SIGE=   .37514-010
BOT SX,SY,SXY,SZ=   .42804-010   -.19863-010   .36976-010    .00000      SIG1,SIG2,SIG3=   .61318-010    .78480-021   -.36577-010
     S.I.=   .89896-010   SIGE=   .87256-010

EL=   53  NODES=   36   21   37      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=   .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=   18.0       -8.00        3.11        TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  -.31767-010   -.82788-010   .58916-011    .00000      SIG1,SIG2,SIG3=  -.40240-028   -.31185-010   -.83371-010
     S.I.=   .83371-010   SIGE=   .82334-010
MID SX,SY,SXY,SZ=  -.61878-012   -.18471-010   .13061-010    .00000      SIG1,SIG2,SIG3=   .87233-011    .23884-021   -.23814-010
     S.I.=   .30938-010   SIGE=   .27793-010
BOT SX,SY,SXY,SZ=   .29970-010    .59267-010   .32093-010    .00000      SIG1,SIG2,SIG3=   .78811-010    .93462-011   -.27722-021
     S.I.=   .78811-010   SIGE=   .75872-010

EL=   54  NODES=   37   21   38      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=   .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=   21.3       -8.00        3.11        TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  -.33878-010   -.33162-010   .22779-010    .00000      SIG1,SIG2,SIG3=   .00000       -.10737-010   -.56301-010
     S.I.=   .56301-010   SIGE=   .51775-010
MID SX,SY,SXY,SZ=  -.80288-011   -.14868-010   .17670-010    .00000      SIG1,SIG2,SIG3=   .76309-011    .28489-021   -.28828-010
     S.I.=   .36259-010   SIGE=   .33110-010
BOT SX,SY,SXY,SZ=   .21280-010    .28568-011   .12381-010    .00000      SIG1,SIG2,SIG3=   .27430-010    .24306-021   -.35028-011
     S.I.=   .30933-010   SIGE=   .28339-010

EL=   55  NODES=   21   22   38      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=   .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=   22.8       -8.00        3.77        TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  -.60548-010   -.48244-010   .24151-012    .00000      SIG1,SIG2,SIG3=  -.10803-027   -.48238-010   -.60550-010
     S.I.=   .60550-010   SIGE=   .56430-010
MID SX,SY,SXY,SZ=  -.27472-010    .43814-011  -.49771-011    .00000      SIG1,SIG2,SIG3=   .51410-011    .28231-021   -.28231-010
     S.I.=   .33372-010   SIGE=   .31122-010
BOT SX,SY,SXY,SZ=   .60441-011    .58449-010  -.10198-010    .00000      SIG1,SIG2,SIG3=   .58397-010    .30858-011   -.21726-021
     S.I.=   .94397-010   SIGE=   .88912-010

EL=   56  NODES=   38   22   23      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=   .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=   26.2       -8.00        3.77        TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  -.16619-010   -.35456-010   .63040-012    .00000      SIG1,SIG2,SIG3=  -.30754-028   -.16588-010   -.35478-010
     S.I.=   .35478-010   SIGE=   .30748-010
MID SX,SY,SXY,SZ=   .55405-011   -.23604-010   .16340-011    .00000      SIG1,SIG2,SIG3=   .56318-011    .23048-021   -.23889-010
     S.I.=   .28331-010   SIGE=   .25980-010
BOT SX,SY,SXY,SZ=   .27142-010   -.12318-010   .36984-011    .00000      SIG1,SIG2,SIG3=   .27523-010    .21203-021   -.12888-010
     S.I.=   .40222-010   SIGE=   .35613-010

EL=   57  NODES=   38   23   39      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=   .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=   27.8       -8.00        3.11        TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  -.31180-010   -.11886-010   .66814-011    .00000      SIG1,SIG2,SIG3=   .13523-028   -.88714-011   -.33278-010
     S.I.=   .33278-010   SIGE=   .29800-010
MID SX,SY,SXY,SZ=  -.18602-010   -.23343-012   .75642-011    .00000      SIG1,SIG2,SIG3=   .24806-011    .18887-021   -.21318-010
     S.I.=   .23798-010   SIGE=   .22658-010
BOT SX,SY,SXY,SZ=  -.66815-011    .10941-010   .84470-011    .00000      SIG1,SIG2,SIG3=   .14350-010    .18125-021   -.99803-011
     S.I.=   .24340-010   SIGE=   .21192-010
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EL=   58  NODES=   39   23   40      MAT=   2  AREA=  5.33       FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=   29.5      -5.22       3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=   .12805-011  -.15800-010   .20044-010   .00000      SIG1,SIG2,SIG3=   .14535-010   .24241-021  -.28055-010
    S.I.=   .43579-010  SIGE=   .38432-010
MID SX,SY,SXY,S2=  -.71262-011  -.75581-011   .18658-010   .00000      SIG1,SIG2,SIG3=   .83183-011   .26181-021  -.24003-010
    S.I.=   .33321-010  SIGE=   .29778-010
BOT SX,SY,SXY,S2=  -.16101-010   .12810-012   .13274-010   .00000      SIG1,SIG2,SIG3=   .75700-011   .24447-021  -.23545-010
    S.I.=   .31116-010  SIGE=   .28105-010

EL=   59  NODES=   23   24   40      MAT=   2  AREA=  5.33       FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=   29.5      -4.44       3.77       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=  -.32916-010  -.10754-010  -.51884-011   .00000      SIG1,SIG2,SIG3=   .00000      -.98000-011  -.34068-010
    S.I.=   .34068-010  SIGE=   .30427-010
MID SX,SY,SXY,S2=  -.18480-010   .34853-011  -.62072-011   .00000      SIG1,SIG2,SIG3=   .52592-011   .18459-021  -.18234-010
    S.I.=   .23484-010  SIGE=   .21366-010
BOT SX,SY,SXY,S2=  -.56344-012   .17165-010  -.72281-011   .00000      SIG1,SIG2,SIG3=   .18738-010   .17874-021  -.31387-011
    S.I.=   .22676-010  SIGE=   .21480-010

EL=   60  NODES=   40   24   25      MAT=   2  AREA=  5.33       FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=   29.5       .889       3.77       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=  -.21780-011  -.11322-010   .32838-011   .00000      SIG1,SIG2,SIG3=   .00000      -.11181-011  -.12379-010
    S.I.=   .12379-010  SIGE=   .11858-010
MID SX,SY,SXY,S2=   .58878-011  -.65187-011   .24416-011   .00000      SIG1,SIG2,SIG3=   .82709-011   .11937-021  -.88217-011
    S.I.=   .15183-010  SIGE=   .13224-010
BOT SX,SY,SXY,S2=   .13354-010  -.62730-011   .15993-011   .00000      SIG1,SIG2,SIG3=   .13463-010   .15824-021  -.84024-011
    S.I.=   .19885-010  SIGE=   .17541-010

EL=   61  NODES=   40   25   41      MAT=   2  AREA=  5.33       FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=   29.5       .889       3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=  -.85506-011  -.68380-011  -.11567-012   .00000      SIG1,SIG2,SIG3=  -.77634-028  -.67856-011  -.80230-011
    S.I.=   .80230-011  SIGE=   .68971-011
MID SX,SY,SXY,S2=  -.74284-011  -.49878-011  -.62917-012   .00000      SIG1,SIG2,SIG3=   .00000      -.48352-011  -.75820-011
    S.I.=   .75820-011  SIGE=   .68487-011
BOT SX,SY,SXY,S2=  -.64661-011  -.16957-011  -.11427-011   .00000      SIG1,SIG2,SIG3=  -.58085-028  -.14381-011  -.67257-011
    S.I.=   .67257-011  SIGE=   .61351-011

EL=   62  NODES=   41   25   42      MAT=   2  AREA=  5.33       FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=   29.5       4.44       3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=   .68471-011   .69882-011  -.12013-011   .00000      SIG1,SIG2,SIG3=   .85268-011   .63086-011  -.12643-022
    S.I.=   .85268-011  SIGE=   .83939-011
MID SX,SY,SXY,S2=  -.30238-011  -.13710-011  -.85455-012   .00000      SIG1,SIG2,SIG3=   .13114-028  -.10087-011  -.33862-011
    S.I.=   .33862-011  SIGE=   .30113-011
BOT SX,SY,SXY,S2=  -.13453-010  -.12288-010  -.50778-012   .00000      SIG1,SIG2,SIG3=  -.11888-028  -.12098-010  -.13843-010
    S.I.=   .13843-010  SIGE=   .12940-010

EL=   63  NODES=   25   26   42      MAT=   2  AREA=  5.33       FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=   29.5       8.22       3.77       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=   .94363-011  -.54949-011  -.39108-012   .00000      SIG1,SIG2,SIG3=   .84465-011   .11748-021  -.55051-011
    S.I.=   .14852-010  SIGE=   .13088-010
MID SX,SY,SXY,S2=   .34283-011  -.21705-011  -.37093-011   .00000      SIG1,SIG2,SIG3=   .52744-011   .73017-022  -.40187-011
    S.I.=   .92930-011  SIGE=   .80725-011
BOT SX,SY,SXY,S2=  -.31418-011   .59584-012  -.70278-011   .00000      SIG1,SIG2,SIG3=   .59987-011   .11427-021  -.65449-011
    S.I.=   .16544-010  SIGE=   .12859-010

EL=   64  NODES=   42   26   27      MAT=   2  AREA=  4.82       FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=   27.9       8.00       3.77       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=  -.94870-011   .84339-011  -.19883-010   .00000      SIG1,SIG2,SIG3=   .19786-010   .33774-021  -.23219-010
    S.I.=   .42986-010  SIGE=   .37266-010
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SARGENT&LUNDY


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MID SX,SY,SXY,S2=  -.57888-012   .67387-011  -.14058-010   .00000      SIG1,SIG2,SIG3=   .18890-010   .23272-021  -.10728-010
    S.I.=   .28618-010  SIGE=   .25873-010
BOT SX,SY,SXY,S2=   .81752-011   .10485-010  -.82325-011   .00000      SIG1,SIG2,SIG3=   .17643-010   .10172-011  -.85317-022
    S.I.=   .17843-010  SIGE=   .17157-010

EL=   65  NODES=   42   27   43      MAT=   2  AREA=  4.82       FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=   26.2       8.00       3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=  -.49878-011   .19672-010   .15800-010   .00000      SIG1,SIG2,SIG3=   .27384-010   .31494-021  -.12700-010
    S.I.=   .40084-010  SIGE=   .35481-010
MID SX,SY,SXY,S2=  -.43868-011   .41775-011   .43780-011   .00000      SIG1,SIG2,SIG3=   .80180-011   .88213-022  -.82273-011
    S.I.=   .12248-010  SIGE=   .10805-010
BOT SX,SY,SXY,S2=  -.43438-011  -.11878-010  -.70481-011   .00000      SIG1,SIG2,SIG3=   .28780-027  -.11848-012  -.18101-010
    S.I.=   .18101-010  SIGE=   .18042-010

EL=   66  NODES=   43   27   44      MAT=   2  AREA=  4.82       FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=   24.3       8.00       3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=   .17818-010   .67371-011  -.24762-010   .00000      SIG1,SIG2,SIG3=   .37852-010   .39674-021  -.13098-010
    S.I.=   .50748-010  SIGE=   .45832-010
MID SX,SY,SXY,S2=  -.18383-011  -.55458-011  -.80338-011   .00000      SIG1,SIG2,SIG3=   .58500-011   .14524-021  -.12835-010
    S.I.=   .18485-010  SIGE=   .16407-010
BOT SX,SY,SXY,S2=  -.21855-010  -.18387-010   .88941-011   .00000      SIG1,SIG2,SIG3=   .00000      -.13130-010  -.28912-010
    S.I.=   .28912-010  SIGE=   .23208-010

EL=   67  NODES=   27   28   44      MAT=   2  AREA=  4.82       FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=   21.3       8.00       3.77       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=   .21228-010   .15985-010   .12538-010   .00000      SIG1,SIG2,SIG3=   .31417-010   .57882-011  -.10084-021
    S.I.=   .31417-010  SIGE=   .28957-010
MID SX,SY,SXY,S2=   .84420-011   .18594-011  -.12583-011   .00000      SIG1,SIG2,SIG3=   .87848-011   .15368-011  -.20540-022
    S.I.=   .67648-011  SIGE=   .61424-011
BOT SX,SY,SXY,S2=  -.85023-011  -.12628-010  -.15088-010   .00000      SIG1,SIG2,SIG3=   .43174-011   .23858-021  -.28047-010
    S.I.=   .30385-010  SIGE=   .28453-010

EL=   68  NODES=   44   28   29      MAT=   2  AREA=  4.82       FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=   18.0       8.00       3.77       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=   .41534-011  -.58881-011  -.17835-010   .00000      SIG1,SIG2,SIG3=   .17734-010   .28074-021  -.19269-010
    S.I.=   .37003-010  SIGE=   .32058-010
MID SX,SY,SXY,S2=  -.26872-011  -.80485-011  -.35885-012   .00000      SIG1,SIG2,SIG3=   .00000      -.24844-011  -.80883-011
    S.I.=   .80883-011  SIGE=   .71624-011
BOT SX,SY,SXY,S2=  -.98858-011  -.10863-010   .17121-010   .00000      SIG1,SIG1,SIG3=   .58080-011   .28824-021  -.27458-010
    S.I.=   .34267-010  SIGE=   .31421-010

EL=   69  NODES=   44   29   45      MAT=   2  AREA=  4.82       FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=   15.4       8.00       3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=  -.18757-010   .44585-011   .78280-011   .00000      SIG1,SIG2,SIG3=   .87383-011   .21827-021  -.21040-010
    S.I.=   .27779-010  SIGE=   .25096-010
MID SX,SY,SXY,S2=  -.78484-011  -.34422-011  -.10480-010   .00000      SIG1,SIG2,SIG3=   .61431-011   .18787-021  -.16235-010
    S.I.=   .21378-010  SIGE=   .19327-010
BOT SX,SY,SXY,S2=   .28004-011  -.11889-010  -.28589-010   .00000      SIG1,SIG2,SIG3=   .25032-010   .48408-021  -.34031-010
    S.I.=   .59062-010  SIGE=   .51347-010

EL=   70  NODES=   45   29   46      MAT=   2  AREA=  4.82       FBOT,FMID,FTOP=  .000       .000       .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=   13.1       8.00       3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=   .11824-010  -.12347-010  -.13458-010   .00000      SIG1,SIG2,SIG3=   .17825-010   .28422-021  -.16346-010
    S.I.=   .36173-010  SIGE=   .31328-010
MID SX,SY,SXY,S2=   .13884-012  -.24682-010   .89255-011   .00000      SIG1,SIG2,SIG3=   .14788-011   .21817-021  -.28034-010
    S.I.=   .27812-010  SIGE=   .24804-010
BOT SX,SY,SXY,S2=  -.12109-010  -.37585-010   .25307-010   .00000      SIG1,SIG2,SIG3=   .34823-011   .44828-021  -.63188-010
    S.I.=   .56668-010  SIGE=   .55010-010
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SARGENT&LUNDY

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EL=   71  NODES=   29   30   46      MAT=  2  AREA=  4.82       FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=  11.5        8.00        3.77       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2= -.30768-010  -.24343-010   .29132-010   .00000      SIG1,SIG2,SIG3=   .17523-011  .48058-021 -.56863-010
    S.I.=  .58818-010  SIGE=  .57760-010
MID SX,SY,SXY,S2= -.21408-010   .34075-012  -.88368-011   .00000      SIG1,SIG2,SIG3=   .34784-011  .22019-021 -.24948-010
    S.I.=  .28024-010  SIGE=  .26457-010
BOT SX,SY,SXY,S2= -.12608-010   .24467-010  -.46805-010   .00000      SIG1,SIG2,SIG3=   .56272-010  .79109-021 -.44413-010
    S.I.=  .10068-009  SIGE=  .87397-010

EL=   72  NODES=   46   30   31      MAT=  2  AREA=  4.82       FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=  8.18        8.00        3.77       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2= -.13794-010  -.14808-010  -.28597-010   .00000      SIG1,SIG2,SIG3=   .14301-010  .44946-021 -.42902-010
    S.I.=  .57203-010  SIGE=  .51562-010
MID SX,SY,SXY,S2= -.23155-011  -.30262-010   .88208-011   .00000      SIG1,SIG2,SIG3=   .12977-012  .25801-021 -.32707-010
    S.I.=  .32837-010  SIGE=  .32772-010
BOT SX,SY,SXY,S2=  .85045-011  -.46275-010   .45838-010   .00000      SIG1,SIG2,SIG3=   .34588-010  .83952-021 -.72258-010
    S.I.=  .10885-009  SIGE=  .94430-010

EL=   73  NODES=   46   31   47      MAT=  2  AREA=  4.82       FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=  6.56        8.00        3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2= -.81524-010  -.15476-008   .45126-010   .00000      SIG1,SIG2,SIG3=   .12423-027 -.68041-010 -.17824-008
    S.I.=  .17824-008  SIGE=  .15580-008
MID SX,SY,SXY,S2= -.20758-010  -.14016-010  -.15542-010   .00000      SIG1,SIG2,SIG3=  -.12604-027 -.14845-011 -.33280-010
    S.I.=  .33280-010  SIGE=  .32574-010
BOT SX,SY,SXY,S2=  .48448-010   .12817-009  -.78210-010   .00000      SIG1,SIG2,SIG3=   .17313-008  .24887-011 -.87037-021
    S.I.=  .17313-008  SIGE=  .17180-008

EL=   74  NODES=   47   31   48      MAT=  2  AREA=  4.82       FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=  3.28        8.00        3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2= -.43859-008  -.18226-008   .22814-010   .00000      SIG1,SIG2,SIG3=   .37877-027 -.18038-008 -.43859-008
    S.I.=  .43859-008  SIGE=  .38438-008
MID SX,SY,SXY,S2= -.12101-011  -.21043-010   .94001-011   .00000      SIG1,SIG2,SIG3=   .25372-011  .21472-021 -.24780-010
    S.I.=  .27328-010  SIGE=  .26151-010
BOT SX,SY,SXY,S2=  .43371-008   .11862-008  -.41140-011   .00000      SIG1,SIG2,SIG3=   .43377-008  .11856-008 -.12344-020
    S.I.=  .43377-008  SIGE=  .38606-008

EL=   75  NODES=   31   32   48      MAT=  2  AREA=  4.82       FBOT,FMID,FTOP=  .000        .000        .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=  1.64        8.00        3.77       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2= -.22873-008  -.39343-008   .48879-010   .00000      SIG1,SIG2,SIG3=   .00000      -.21738-008 -.40540-008
    S.I.=  .40540-008  SIGE=  .35173-008
MID SX,SY,SXY,S2= -.30880-010  -.74589-012  -.48831-012   .00000      SIG1,SIG2,SIG3=  -.83585-028 -.73788-012 -.30888-010
    S.I.=  .30888-010  SIGE=  .30538-010
BOT SX,SY,SXY,S2=  .16739-008   .39138-008  -.47858-010   .00000      SIG1,SIG2,SIG3=   .40110-008  .15787-008 -.85830-021
    S.I.=  .40110-008  SIGE=  .35000-008

EL=   76  NODES=   33   34  MAT=  1  PRESSURES(I,Y)=   .00000        .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875       ,  .5625       SHEAR CENTER=  .8674-018,  .7500       AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00  -.25978-008
        2   150.00  -.13099-008
        3   150.00   .89970-009
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00   .24858-009
        2   150.00  -.75838-011
        3   150.00   .24540-009
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SARGENT&LUNDY

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EL=   77  NODES=   34   35  MAT=  1  PRESSURES(I,Y)=   .00000        .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875       ,  .5625       SHEAR CENTER=  .8674-018,  .7500       AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00  -.27480-008
        2   150.00   .42215-010
        3   150.00   .34892-009
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00   .27268-008
        2   150.00   .17897-010
        3   150.00  -.15216-008

EL=   78  NODES=   35   36  MAT=  1  PRESSURES(I,Y)=   .00000        .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875       ,  .5625       SHEAR CENTER=  .8674-018,  .7500       AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00  -.11581-008
        2   150.00   .28481-010
        3   150.00  -.12688-011
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00   .10535-008
        2   150.00   .14210-010
        3   150.00  -.19785-008

EL=   79  NODES=   36   37  MAT=  1  PRESSURES(I,Y)=   .00000        .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875       ,  .5625       SHEAR CENTER=  .8674-018,  .7500       AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00  -.50258-010
        2   150.00  -.18458-010
        3   150.00  -.43438-010
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00   .38504-010
        2   150.00  -.43948-011
        3   150.00  -.19827-008

EL=   80  NODES=   37   38  MAT=  1  PRESSURES(I,Y)=   .00000        .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875       ,  .5625       SHEAR CENTER=  .8674-018,  .7500       AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00  -.42830-010
        2   150.00  -.13800-010
        3   150.00  -.10482-008
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00   .18505-010
        2   150.00   .83237-011
        3   150.00  -.20377-008

EL=   81  NODES=   38   39  MAT=  1  PRESSURES(I,Y)=   .00000        .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875       ,  .5625       SHEAR CENTER=  .8674-018,  .7500       AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
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SARGENT&LUNDY

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        1   150.00     .88080-010
        2   150.00    -.77886-011
        3   150.00    -.20131-008
END J   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.10523-008
        2   150.00     .82037-010
        3   150.00    -.18971-008

EL=   82  NODES=   39   40  MAT=  1  PRESSURES(I,Y)=     .00000          .00000     AVE. TEMP=  150.00          I-D  THIN-WALL BEAM  24
 CENTROID=  -.1875     ,   .5625       SHEAR CENTER=   .8674-018,    .7500        AREA=   .5385-001  J=   .2313-005  IW=   .2374-038
 PRINCIPLE M OF I:        IYP=   .3155-002   IZP=   .3155-002   THETAP=   .0000
END I   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.23854-010
        2   150.00     .80870-010
        3   150.00    -.21000-008
END J   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .12688-010
        2   150.00     .81039-011
        3   150.00    -.87345-010

EL=   83  NODES=   40   41  MAT=  1  PRESSURES(I,Y)=     .00000          .00000     AVE. TEMP=  150.00          I-D  THIN-WALL BEAM  24
 CENTROID=  -.1875     ,   .5625       SHEAR CENTER=   .8674-018,    .7500        AREA=   .5385-001  J=   .2313-005  IW=   .2374-038
 PRINCIPLE M OF I:        IYP=   .3155-002   IZP=   .3155-002   THETAP=   .0000
END I   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .83146-010
        2   150.00    -.21242-011
        3   150.00    -.11180-008
END J   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.10574-008
        2   150.00    -.89585-011
        3   150.00     .86857-010

EL=   84  NODES=   41   42  MAT=  1  PRESSURES(I,Y)=     .00000          .00000     AVE. TEMP=  150.00          I-D  THIN-WALL BEAM  24
 CENTROID=  -.1875     ,   .5625       SHEAR CENTER=   .8674-018,    .7500        AREA=   .5385-001  J=   .2313-005  IW=   .2374-038
 PRINCIPLE M OF I:        IYP=   .3155-002   IZP=   .3155-002   THETAP=   .0000
END I   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .18285-010
        2   150.00    -.14786-010
        3   150.00     .82846-010
END J   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.17508-010
        2   150.00    -.58524-010
        3   150.00     .18408-008

EL=   85  NODES=   42   43  MAT=  1  PRESSURES(I,Y)=     .00000          .00000     AVE. TEMP=  150.00          I-D  THIN-WALL BEAM  24
 CENTROID=  -.1875     ,   .5625       SHEAR CENTER=   .8674-018,    .7500        AREA=   .5385-001  J=   .2313-005  IW=   .2374-038
 PRINCIPLE M OF I:        IYP=   .3155-002   IZP=   .3155-002   THETAP=   .0000
END I   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .53837-010
        2   150.00    -.52016-010
        3   150.00     .17108-008
END J   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.53568-010
        2   150.00     .20508-011
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        3   150.00     .15025-008

EL=   86  NODES=   43   44  MAT=  1  PRESSURES(I,Y)=     .00000          .00000     AVE. TEMP=  150.00          I-D  THIN-WALL BEAM  24
 CENTROID=  -.1875     ,   .5625       SHEAR CENTER=   .8674-018,    .7500        AREA=   .5385-001  J=   .2313-005  IW=   .2374-038
 PRINCIPLE M OF I:        IYP=   .3155-002   IZP=   .3155-002   THETAP=   .0000
END I   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.30373-010
        2   150.00    -.22340-010
        3   150.00     .18488-008
END J   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .19752-010
        2   150.00     .90338-012
        3   150.00     .88043-010

EL=   87  NODES=   44   45  MAT=  1  PRESSURES(I,Y)=     .00000          .00000     AVE. TEMP=  150.00          I-D  THIN-WALL BEAM  24
 CENTROID=  -.1875     ,   .5625       SHEAR CENTER=   .8674-018,    .7500        AREA=   .5385-001  J=   .2313-005  IW=   .2374-038
 PRINCIPLE M OF I:        IYP=   .3155-002   IZP=   .3155-002   THETAP=   .0000
END I   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.49652-010
        2   150.00    -.21242-010
        3   150.00     .15434-008
END J   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .18385-010
        2   150.00    -.14283-010
        3   150.00     .82452-010

EL=   88  NODES=   45   46  MAT=  1  PRESSURES(I,Y)=     .00000          .00000     AVE. TEMP=  150.00          I-D  THIN-WALL BEAM  24
 CENTROID=  -.1875     ,   .5625       SHEAR CENTER=   .8674-018,    .7500        AREA=   .5385-001  J=   .2313-005  IW=   .2374-038
 PRINCIPLE M OF I:        IYP=   .3155-002   IZP=   .3155-002   THETAP=   .0000
END I   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.10780-008
        2   150.00    -.32844-010
        3   150.00     .18602-008
END J   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .59059-010
        2   150.00    -.54203-010
        3   150.00     .88556-010

EL=   89  NODES=   46   47  MAT=  1  PRESSURES(I,Y)=     .00000          .00000     AVE. TEMP=  150.00          I-D  THIN-WALL BEAM  24
 CENTROID=  -.1875     ,   .5625       SHEAR CENTER=   .8674-018,    .7500        AREA=   .5385-001  J=   .2313-005  IW=   .2374-038
 PRINCIPLE M OF I:        IYP=   .3155-002   IZP=   .3155-002   THETAP=   .0000
END I   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.39219-008
        2   150.00    -.10262-008
        3   150.00     .36152-008
END J   PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .33320-008
        2   150.00    -.86371-010
        3   150.00    -.35244-008

EL=   90  NODES=   47   48  MAT=  1  PRESSURES(I,Y)=     .00000          .00000     AVE. TEMP=  150.00          I-D  THIN-WALL BEAM  24
 CENTROID=  -.1875     ,   .5625       SHEAR CENTER=   .8674-018,    .7500        AREA=   .5385-001  J=   .2313-005  IW=   .2374-038
 PRINCIPLE M OF I:        IYP=   .3155-002   IZP=   .3155-002   THETAP=   .0000
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END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
       1    150.00    -.39795-009
       2    150.00    -.14674-010
       3    150.00    -.25087-009
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
       1    150.00     .35563-009
       2    150.00     .18451-009
       3    150.00    -.13631-008


EL=   91  NODES=   48    49  MAT=  1  PRESSURES(I,Y)=     .00000          .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      .5625        SHEAR CENTER=   .8874-018,    .7500       AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
  PRINCIPLE M OF I:      IYP=   .3155-002    IZP=   .3155-002    THETAP=    .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
       1    150.00    -.15475-008
       2    150.00     .70757-010
       3    150.00     .70806-010
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
       1    150.00     .10142-008
       2    150.00    -.14625-010
       3    150.00    -.14576-010


EL=   92  NODES=   49    50  MAT=  1  PRESSURES(I,Y)=     .00000          .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      .5625        SHEAR CENTER=   .8874-018,    .7500       AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
  PRINCIPLE M OF I:      IYP=   .3155-002    IZP=   .3155-002    THETAP=    .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
       1    150.00    -.81039-011
       2    150.00    -.10255-011
       3    150.00    -.10255-011
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
       1    150.00    -.15602-010
       2    150.00     .21242-011
       3    150.00     .21242-011


EL=   93  NODES=   50    33  MAT=  1  PRESSURES(I,Y)=     .00000          .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      .5625        SHEAR CENTER=   .8874-018,    .7500       AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
  PRIN IPLE M OF I:      IYP=   .3155-002    IZP=   .3155-002    THETAP=    .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
       1    150.00     .70366-010
       2    150.00    -.85455-011
       3    150.00    -.85455-011
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
       1    150.00    -.78521-010
       2    150.00     .41067-010
       3    150.00     .41067-010


EL=   94  NODES=   33    34    52    51       MAT=  1  AREA=   24.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=    2.456      -8.000       .8874-018  PRESS=     .00000          .00000
MX,MY,MXY=    .10071-012     .53569-013    -.35932-013
TOP SX,SY,SXY,SZ=    .40376-010     .28838-010    -.19510-010     .00000      SIG1,SIG2,SIG3=    .54952-010     .14262-010    -.15265-021
    S.I.=    .54852-010   SIGE=    .49350-010
MID SX,SY,SXY,SZ=    -.90204-011     .25677-011    -.18852-011     .00000      SIG1,SIG2,SIG3=    .28665-011     .95748-022    -.93184-011
    S.I.=    .12186-010   SIGE=    .11026-010
BOT SX,SY,SXY,SZ=    -.58417-010    -.23703-010     .15740-010     .00000      SIG1,SIG2,SIG3=    -.50868-026    -.17829-010    -.84481-010
    S.I.=    .84481-010   SIGE=    .67731-010
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EL=   95  NODES=   34    35    53    52       MAT=  1  AREA=   24.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=    7.375      -8.000       .8874-018  PRESS=     .00000          .00000
MX,MY,MXY=     .39284-013     .48673-013    -.19880-013
TOP SX,SY,SXY,SZ=     .12762-010     .25842-010    -.14112-010     .00000      SIG1,SIG2,SIG3=    .34720-010     .37042-011    -.12185-021
    S.I.=    .34720-010   SIGE=    .33024-010
MID SX,SY,SXY,SZ=    -.84789-011     .17581-011    -.43806-011     .00000      SIG1,SIG2,SIG3=    .38486-011     .84301-022    -.83883-011
    S.I.=    .12002-010   SIGE=    .10857-010
BOT SX,SY,SXY,SZ=    -.25736-010    -.22108-010     .53804-011     .00000      SIG1,SIG2,SIG3=    .22322-026    -.16243-010    -.29809-010
    S.I.=    .29809-010   SIGE=    .25870-010

EL=   96  NODES=   35    36    54    53       MAT=  1  AREA=   24.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=   12.29       -8.000       .8874-018  PRESS=     .00000          .00000
MX,MY,MXY=    -.41788-015     .11372-013     .83918-014
TOP SX,SY,SXY,SZ=    -.71622-011     .37106-011    -.35439-011     .00000      SIG1,SIG2,SIG3=    .47837-011     .10184-021    -.83163-011
    S.I.=    .12979-010   SIGE=    .11372-010
MID SX,SY,SXY,SZ=    -.89571-011    -.16874-011    -.66781-011     .00000      SIG1,SIG2,SIG3=    .27353-011     .11232-021    -.11580-010
    S.I.=    .14285-010   SIGE=    .13143-010
BOT SX,SY,SXY,SZ=    -.87521-011    -.74454-011    -.98143-011     .00000      SIG1,SIG2,SIG3=    .27217-011     .18432-021    -.18819-010
    S.I.=    .19841-010   SIGE=    .18431-010

EL=   97  NODES=   36    37    55    54       MAT=  1  AREA=   24.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=   17.21       -8.000       .8874-018  PRESS=     .00000          .00000
MX,MY,MXY=    -.15881-013    -.10373-013     .22188-013
TOP SX,SY,SXY,SZ=    -.18823-010    -.10118-010     .41443-011     .00000      SIG1,SIG2,SIG3=    -.14416-026    -.81008-011    -.18838-010
    S.I.=    .18838-010   SIGE=    .16187-010
MID SX,SY,SXY,SZ=    -.87843-011    -.50280-011    -.67378-011     .00000      SIG1,SIG2,SIG3=    .88503-013     .10892-021    -.13801-010
    S.I.=    .13968-010   SIGE=    .13945-010
BOT SX,SY,SXY,SZ=    -.94542-012     .80120-013    -.17620-010     .00000      SIG1,SIG2,SIG3=    .17184-010     .27700-021    -.18070-010
    S.I.=    .35254-010   SIGE=    .30534-010

EL=   98  NODES=   37    38    56    55       MAT=  1  AREA=   24.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=   22.12       -8.000       .8874-018  PRESS=     .00000          .00000
MX,MY,MXY=    -.29881-013    -.18389-013     .17620-013
TOP SX,SY,SXY,SZ=    -.23388-010    -.13239-010     .34817-011     .00000      SIG1,SIG2,SIG3=    .00000         -.12154-010    -.24473-010
    S.I.=    .24473-010   SIGE=    .21155-010
MID SX,SY,SXY,SZ=    -.87614-011    -.52105-011    -.51508-011     .00000      SIG1,SIG2,SIG3=    .15184-026    -.15310-011    -.12421-010
    S.I.=    .12421-010   SIGE=    .11731-010
BOT SX,SY,SXY,SZ=     .89054-011     .28184-011    -.13783-010     .00000      SIG1,SIG2,SIG3=    .18241-010     .21810-021    -.88176-011
    S.I.=    .27758-010   SIGE=    .24432-010

EL=   99  NODES=   38    39    57    56       MAT=  1  AREA=   24.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=   27.04       -8.000       .8874-018  PRESS=     .00000          .00000
MX,MY,MXY=    -.47861-013    -.20804-013     .10830-013
TOP SX,SY,SXY,SZ=    -.28577-010    -.11480-010     .24735-011     .00000      SIG1,SIG2,SIG3=    .00000         -.10700-010    -.27337-010
    S.I.=    .27337-010   SIGE=    .23860-010
MID SX,SY,SXY,SZ=    -.32089-011    -.12557-011    -.18875-011     .00000      SIG1,SIG2,SIG3=    -.83488-028    -.10708-012    -.43575-011
    S.I.=    .43575-011   SIGE=    .43050-011
BOT SX,SY,SXY,SZ=     .20159-010     .89469-011    -.72488-011     .00000      SIG1,SIG2,SIG3=    .23717-010     .53811-011    -.71884-022
    S.I.=    .23717-010   SIGE=    .21634-010

EL=  100  NODES=   39    40    58    57       MAT=  1  AREA=   24.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=   29.50       -8.333       .8874-018  PRESS=     .00000          .00000
MX,MY,MXY=    -.39384-013    -.17804-013     .24189-014
TOP SX,SY,SXY,SZ=    -.21139-010    -.85811-011    -.48384-011     .00000      SIG1,SIG2,SIG3=    .18336-026    -.89067-011    -.22789-010
    S.I.=    .22788-010   SIGE=    .20228-010
MID SX,SY,SXY,SZ=    -.18352-011     .23074-012    -.38530-011     .00000      SIG1,SIG2,SIG3=    .29840-011     .59868-022    -.45864-011
    S.I.=    .75524-011   SIGE=    .66240-011
BOT SX,SY,SXY,SZ=     .17468-010     .80128-011    -.24886-011     .00000      SIG1,SIG2,SIG3=    .18136-010     .83487-011    -.38481-022
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    S.I.=    .18136-010  SIGE=   .18723-010

EL=  101  NODES=    40    41    59    58        MAT=  1  AREA=  26.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=   29.50          .0000          .8674-018  PRESS=   .00000      .00000
MX,MY,MXY=      .14814-014      .71788-015     -.39382-014
TOP SX,SY,SXY,S2=  -.48843-011  -.21002-011  -.33232-011   .00000      SIG1,SIG2,SIG3=   .20223-012   .55776-022  -.58967-011
    S.I.=    .70980-011  SIGE=   .70000-011
MID SX,SY,SXY,S2=  -.53256-011  -.24523-011  -.19910-011   .00000      SIG1,SIG2,SIG3=   .00000      -.16893-011  -.58889-011
    S.I.=    .58889-011  SIGE=   .52079-011
BOT SX,SY,SXY,S2=  -.60574-011  -.28044-011   .54121-012   .00000      SIG1,SIG2,SIG3=  -.28270-028  -.27187-011  -.51450-011
    S.I.=    .51450-011  SIGE=   .53336-011

EL=  102  NODES=    41    42    60    59        MAT=  1  AREA=  26.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=   28.50          5.333          .8674-018  PRESS=   .00000      .00000
MX,MY,MXY=      .37780-013      .18627-013     .85805-014
TOP SX,SY,SXY,S2=   .14373-010   .34442-011   .20712-011   .00000      SIG1,SIG2,SIG3=   .14753-010   .30848-011  -.45818-022
    S.I.=    .14753-010  SIGE=   .13404-010
MID SX,SY,SXY,S2=  -.41480-011  -.47114-011  -.11488-011   .00000      SIG1,SIG2,SIG3=   .00000      -.32486-011  -.56106-011
    S.I.=    .56106-011  SIGE=   .48792-011
BOT SX,SY,SXY,S2=  -.22688-010  -.12667-010  -.43848-011   .00000      SIG1,SIG2,SIG3=  -.18662-028  -.11205-010  -.24331-010
    S.I.=    .24331-010  SIGE=   .21083-010

EL=  103  NODES=    42    43    61    60        MAT=  1  AREA=  24.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=   27.04          8.000          .8674-018  PRESS=   .00000      .00000
MX,MY,MXY=      .44378-013      .17812-013     .28386-013
TOP SX,SY,SXY,S2=   .18048-010   .58468-011   .18192-010   .00000      SIG1,SIG2,SIG3=   .28878-010   .28868-021  -.78829-011
    S.I.=    .37759-010  SIGE=   .34500-010
MID SX,SY,SXY,S2=  -.57203-011  -.27904-011   .42861-011   .00000      SIG1,SIG2,SIG3=   .25718-012   .70910-022  -.87878-011
    S.I.=    .80249-011  SIGE=   .68891-011
BOT SX,SY,SXY,S2=  -.27487-010  -.11527-010  -.98554-011   .00000      SIG1,SIG2,SIG3=   .35762-028  -.89810-011  -.32033-010
    S.I.=    .32033-010  SIGE=   .29178-010

EL=  104  NODES=    43    44    62    61        MAT=  1  AREA=  24.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=   22.12          8.000          .8674-018  PRESS=   .00000      .00000
MX,MY,MXY=      .25810-013      .43218-014     .40838-013
TOP SX,SY,SXY,S2=   .85478-012   .34722-011   .22232-010   .00000      SIG1,SIG2,SIG3=   .24481-010   .34982-021  -.20054-010
    S.I.=    .44535-010  SIGE=   .38632-010
MID SX,SY,SXY,S2=  -.11807-010   .13523-011   .21516-011   .00000      SIG1,SIG2,SIG3=   .17002-011   .10729-021  -.11885-010
    S.I.=    .13885-010  SIGE=   .12688-010
BOT SX,SY,SXY,S2=  -.24188-010  -.76766-012  -.17828-010   .00000      SIG1,SIG2,SIG3=   .89407-011   .33842-021  -.33877-010
    S.I.=    .42818-010  SIGE=   .38121-010

EL=  105  NODES=    44    45    63    62        MAT=  1  AREA=  24.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=   17.21          8.000          .8674-018  PRESS=   .00000      .00000
MX,MY,MXY=      .10553-013     -.12708-013     .37355-013
TOP SX,SY,SXY,S2=  -.12661-010  -.46505-011   .18822-010   .00000      SIG1,SIG2,SIG3=   .10588-010   .30240-021  -.27888-010
    S.I.=    .38487-010  SIGE=   .34436-010
MID SX,SY,SXY,S2=  -.17837-010   .15630-011   .48888-012   .00000      SIG1,SIG2,SIG3=   .15958-011   .15279-021  -.17850-010
    S.I.=    .19446-010  SIGE=   .16899-010
BOT SX,SY,SXY,S2=  -.23013-010   .76185-011  -.17824-010   .00000      SIG1,SIG2,SIG3=   .15967-010   .37031-021  -.31184-010
    S.I.=    .47131-010  SIGE=   .41518-010

EL=  106  NODES=    45    46    64    63        MAT=  1  AREA=  24.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=   12.29          8.000          .8674-018  PRESS=   .00000      .00000
MX,MY,MXY=     -.18305-013     -.88773-013     .15080-013
TOP SX,SY,SXY,S2=  -.32384-010  -.32768-010   .71484-011   .00000      SIG1,SIG2,SIG3=   .28422-028  -.28431-010  -.38732-010
    S.I.=    .39732-010  SIGE=   .34856-010
MID SX,SY,SXY,S2=  -.24387-010  -.80710-012  -.23828-012   .00000      SIG1,SIG2,SIG3=   .24336-027  -.80477-012  -.24388-010
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SARGENT & LUNDY


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    S.I.=    .24388-010  SIGE=   .24151-010
BOT SX,SY,SXY,S2=  -.18400-010  -.31768-010   .78250-011   .00000      SIG1,SIG2,SIG3=   .32933-010   .39887-021  -.17878-010
    S.I.=    .50511-010  SIGE=   .44613-010

EL=  107  NODES=    48    47    65    64        MAT=  1  AREA=  24.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=    7.375          8.000          .8674-018  PRESS=   .00000      .00000
MX,MY,MXY=     -.89020-013     -.14488-012     -.40231-013
TOP SX,SY,SXY,S2=  -.55978-010  -.73339-010   .18683-010   .00000      SIG1,SIG2,SIG3=  -.63811-028  -.44058-010  -.88259-010
    S.I.=    .88259-010  SIGE=   .73850-010
MID SX,SY,SXY,S2=  -.27028-010  -.22725-011   .10508-011   .00000      SIG1,SIG2,SIG3=  -.23443-028  -.22280-011  -.27071-010
    S.I.=    .27071-010  SIGE=   .26028-010
BOT SX,SY,SXY,S2=   .18230-011   .88784-010   .20784-010   .00000      SIG1,SIG2,SIG3=   .74727-010   .61888-021  -.40105-011
    S.I.=    .78738-010  SIGE=   .75811-010

EL=  108  NODES=    47    48    66    65        MAT=  1  AREA=  24.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=    2.456          8.000          .8674-018  PRESS=   .00000      .00000
MX,MY,MXY=     -.12848-012     -.12185-012     -.77830-013
TOP SX,SY,SXY,S2=  -.87382-010  -.63078-010  -.37837-010   .00000      SIG1,SIG2,SIG3=   .00000      -.35777-010  -.11468-008
    S.I.=    .11468-008  SIGE=   .10184-008
MID SX,SY,SXY,S2=  -.24387-010  -.32572-011   .58787-012   .00000      SIG1,SIG2,SIG3=   .10588-028  -.32348-011  -.24380-010
    S.I.=    .24380-010  SIGE=   .22944-010
BOT SX,SY,SXY,S2=   .38858-010   .58581-010   .38813-010   .00000      SIG1,SIG2,SIG3=   .87539-010   .78801-011  -.31373-021
    S.I.=    .87539-010  SIGE=   .83982-010

EL=  109  NODES=    48    49    67    66        MAT=  1  AREA=  25.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=    .0000          5.335          .8674-018  PRESS=   .00000      .00000
MX,MY,MXY=     .00000          .00000          .00000
TOP SX,SY,SXY,S2=  -.88260-011  -.24147-013  -.11809-011   .00000      SIG1,SIG2,SIG3=   .12878-012   .70005-022  -.87789-011
    S.I.=    .89097-011  SIGE=   .88455-011
MID SX,SY,SXY,S2=  -.88260-011  -.24147-013  -.11809-011   .00000      SIG1,SIG2,SIG3=   .12878-012   .70005-022  -.87789-011
    S.I.=    .89097-011  SIGE=   .88455-011
BOT SX,SY,SXY,S2=  -.88260-011  -.24147-013  -.11802-011   .00000      SIG1,SIG2,SIG3=   .12878-012   .70005-022  -.87789-011
    S.I.=    .89097-011  SIGE=   .88455-011

EL=  110  NODES=    49    50    68    67        MAT=  1  AREA=  25.1      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=    .0000          .0000          .8674-018  PRESS=   .00000      .00000
MX,MY,MXY=     .00000          .00000          .00000
TOP SX,SY,SXY,S2=  -.88288-011  -.45075-012  -.17807-011   .00000      SIG1,SIG2,SIG3=   .15780-013   .55881-022  -.70883-011
    S.I.=    .71121-011  SIGE=   .71042-011
MID SX,SY,SXY,S2=  -.88288-011  -.45075-012  -.17807-011   .00000      SIG1,SIG2,SIG3=   .15780-013   .55881-022  -.70883-011
    S.I.=    .71121-011  SIGE=   .71042-011
BOT SX,SY,SXY,S2=  -.88288-011  -.45075-012  -.17807-011   .00000      SIG1,SIG2,SIG3=   .15780-013   .55881-022  -.70883-011
    S.I.=    .71121-011  SIGE=   .71042-011

EL=  111  NODES=    50    33    51    68        MAT=  1  AREA=  25.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=    .0000         -5.335          .8674-018  PRESS=   .00000      .00000
MX,MY,MXY=     .00000          .00000          .00000
TOP SX,SY,SXY,S2=  -.78740-011  -.88418-012  -.18778-011   .00000      SIG1,SIG2,SIG3=   .11146-011   .74783-022  -.84048-011
    S.I.=    .95181-011  SIGE=   .90138-011
MID SX,SY,SXY,S2=  -.78740-011  -.88418-012  -.18778-011   .00000      SIG1,SIG2,SIG3=   .11146-011   .74783-022  -.84048-011
    S.I.=    .95181-011  SIGE=   .90138-011
BOT SX,SY,SXY,S2=  -.78740-011  -.88418-012  -.18778-011   .00000      SIG1,SIG2,SIG3=   .11146-011   .74783-022  -.84048-011
    S.I.=    .95181-011  SIGE=   .90136-011


EL=  113  NODES=    51    52  MAT=  1  PRESSURES(I,J)=    .00000          .00000      AXE  TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      ,  -.5825        SHEAR CENTER=   .8674-018,  -.7500        AREA=  .5385-001  JX  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3185-002   IZP=  .3185-002   THETAP=  .0000
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SARGENT & LUNDY

END I PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 -.84088-010
2 150.00 -.44095-010
3 150.00 .48849-009
END J PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 .55912-010
2 150.00 -.24387-010
3 150.00 .31006-009

EL= 113 NODES= 52 53 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000
END I PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 -.15485-009
2 150.00 -.26481-010
3 150.00 .40706-009
END J PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 .12652-009
2 150.00 -.57865-011
3 150.00 .82550-010

EL= 114 NODES= 53 54 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000
END I PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 -.13600-009
2 150.00 -.23683-011
3 150.00 .18959-009
END J PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 .11843-009
2 150.00 -.55180-011
3 150.00 -.69965-010

EL= 115 NODES= 54 55 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000
END I PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 -.98780-010
2 150.00 .85699-011
3 150.00 .37356-011
END J PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 .88556-010
2 150.00 -.54447-011
3 150.00 -.15343-009

EL= 116 NODES= 55 56 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000
END I PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 -.54398-010
2 150.00 .11871-010
3 150.00 -.13253-009
END J PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 .50885-010

SARGENT & LUNDY

2 150.00 .15382-011
3 150.00 -.21718-009

EL= 117 NODES= 56 57 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000
END I PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 .82232-010
2 150.00 .11768-010
3 150.00 -.25643-009
END J PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 -.80787-010
2 150.00 .88421-010
3 150.00 -.28623-009

EL= 118 NODES= 57 58 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000
END I PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 .89829-011
2 150.00 .10685-008
3 150.00 -.30036-009
END J PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 -.35847-011
2 150.00 .87419-011
3 150.00 -.91857-010

EL= 119 NODES= 58 59 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000
END I PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 .12269-009
2 150.00 -.27590-011
3 150.00 -.11422-009
END J PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 -.12840-009
2 150.00 -.84702-011
3 150.00 .14422-009

EL= 120 NODES= 59 60 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000
END I PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 -.13184-010
2 150.00 -.12110-010
3 150.00 .11546-008
END J PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 .34426-011
2 150.00 -.11841-008
3 150.00 .30748-008

EL= 121 NODES= 60 61 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038

SARGENT & LUNDY

3308

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 PRINCIPLE M OF I:      IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .53554-010
        2   150.00    -.11033-008
        3   150.00     .26352-009
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.81188-010
        2   150.00    -.31740-010
        3   150.00     .25102-008


EL=  122  NODES=   81   82  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000     AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875     ,  -.5625      SHEAR CENTER=   .8674-018,  -.7500      AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:      IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.10604-009
        2   150.00    -.10718-010
        3   150.00     .20141-009
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .67412-010
        2   150.00    -.44852-010
        3   150.00     .88286-010


EL=  123  NODES=   82   83  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000     AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875     ,  -.5625      SHEAR CENTER=   .8674-018,  -.7500      AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:      IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.15326-009
        2   150.00    -.75833-011
        3   150.00     .11546-008
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .11087-008
        2   150.00    -.46781-010
        3   150.00    -.70268-010


EL=  124  NODES=   83   84  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000     AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875     ,  -.5625      SHEAR CENTER=   .8674-018,  -.7500      AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:      IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.18785-009
        2   150.00    -.21608-010
        3   150.00     .17555-010
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .14259-009
        2   150.00    -.23073-010
        3   150.00    -.30983-009


EL=  125  NODES=   84   85  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000     AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875     ,  -.5625      SHEAR CENTER=   .8674-018,  -.7500      AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:      IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.14884-009
        2   150.00    -.24804-010
        3   150.00    -.16056-009
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
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SARGENT&LUNDY


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        1   150.00     .10287-009
        2   150.00     .15828-010
        3   150.00    -.49261-009


EL=  126  NODES=   85   86  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000     AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875     ,  -.5625      SHEAR CENTER=   .8674-018,  -.7500      AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:      IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.24001-010
        2   150.00     .80816-011
        3   150.00    -.41177-009
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.28273-010
        2   150.00    -.43218-010
        3   150.00    -.30465-009


EL=  127  NODES=   86   87  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000     AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875     ,  -.5625      SHEAR CENTER=   .8674-018,  -.7500      AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:      IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .53237-011
        2   150.00     .38624-012
        3   150.00     .35824-012
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .12745-010
        2   150.00    -.17579-011
        3   150.00    -.17579-011


EL=  128  NODES=   87   88  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000     AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875     ,  -.5625      SHEAR CENTER=   .8674-018,  -.7500      AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:      IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.12183-010
        2   150.00     .10255-011
        3   150.00     .11475-011
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .75200-011
        2   150.00    -.55180-011
        3   150.00    -.53958-011


EL=  129  NODES=   88   81  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000     AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875     ,  -.5625      SHEAR CENTER=   .8674-018,  -.7500      AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:      IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     .65434-011
        2   150.00    -.53228-011
        3   150.00    -.53228-011
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -.31203-010
        2   150.00     .72271-011
        3   150.00     .72271-011


EL=  130  NODES=   81   82   70   69       MAT=  1  AREA=  8.83       TTOP,TBOT=  150.0  150.0                    QUAD SHELL  83
XC,YC,ZC=  2.458      -8.000      -3.440       PRESS=   .00000          .00000
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SARGENT&LUNDY

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MX,MY,MXY=   .18898-013   .74638-014  -.75345-014
TOP SX,SY,SXY,SZ=   75705-011   .12620-010  -.82235-011   .00000      SIG1,SIG2,SIG3=   .18828-010   .15830-011  -.67825-022
    S.I.=   .16828-010  SIGE=   .16097-010
MID SX,SY,SXY,SZ=  -.12747-010   .47946-011  -.12208-012   .00000      SIG1,SIG2,SIG3=   .47955-011   .13784-021  -.12748-010
    S.I.=   .17543-010  SIGE=   .15705-010
BOT SX,SY,SXY,SZ=  -.33065-010  -.32310-011   .79784-011   .00000      SIG1,SIG2,SIG3=   .28679-028  -.12305-011  -.33065-010
    S.I.=   .35065-010  SIGE=   .34466-010

EL=  131  NODES=   52   53   71   70      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=   7.375      -8.000      -3.440      PRESS=   .00000                                                        .00000
MX,MY,MXY=   .17565-013   .84617-014  -.74150-014
TOP SX,SY,SXY,SZ=   .89481-011   .12375-010  -.78068-011   .00000      SIG1,SIG2,SIG3=   .17738-010   .15851-011  -.83456-022
    S.I.=   .17738-010  SIGE=   .17000-010
MID SX,SY,SXY,SZ=  -.11940-010   .32545-011   .38624-012   .00000      SIG1,SIG2,SIG3=   .32834-011   .11952-021  -.11948-010
    S.I.=   .16212-010  SIGE=   .13871-010
BOT SX,SY,SXY,SZ=  -.30827-010  -.58655-011   .83383-011   .00000      SIG1,SIG2,SIG3=  -.28738-028  -.33358-011  -.33357-010
    S.I.=   .33357-010  SIGE=   .31820-010

EL=  132  NODES=   53   54   72   71      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  12.29      -8.000      -3.440      PRESS=   .00000                                                        .00000
MX,MY,MXY=   .57424-014   .38765-014   .82907-015
TOP SX,SY,SXY,SZ=  -.20282-011   .15138-011   .13986-011   .00000      SIG1,SIG2,SIG3=   .19994-011   .35461-022  -.26136-011
    S.I.=   .45133-011  SIGE=   .39170-011
MID SX,SY,SXY,SZ=  -.82780-011  -.24416-011   .50710-012   .00000      SIG1,SIG2,SIG3=  -.80474-029  -.24042-011  -.83154-011
    S.I.=   .83154-011  SIGE=   .83782-011
BOT SX,SY,SXY,SZ=  -.16528-010  -.63968-011  -.38436-012   .00000      SIG1,SIG2,SIG3=  -.71678-029  -.63824-011  -.16542-010
    S.I.=   .16542-010  SIGE=   .14450-010

EL=  133  NODES=   54   55   73   72      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  17.21      -8.000      -3.440      PRESS=   .00000                                                        .00000
MX,MY,MXY=  -.23448-014   .10022-014   .59529-014
TOP SX,SY,SXY,SZ=  -.86494-011  -.77926-011   .67389-011   .00000      SIG1,SIG2,SIG3=   .16004-028  -.14685-011  -.14874-010
    S.I.=   .14874-010  SIGE=   .14256-010
MID SX,SY,SXY,SZ=  -.81281-011  -.88702-011   .33805-012   .00000      SIG1,SIG2,SIG3=  -.76836-029  -.80870-011  -.89112-011
    S.I.=   .89112-011  SIGE=   .76879-011
BOT SX,SY,SXY,SZ=  -.36087-011  -.95477-011  -.80628-011   .00000      SIG1,SIG2,SIG3=   .84630-013   .10761-021  -.13619-010
    S.I.=   .13684-010  SIGE=   .13651-010

EL=  134  NODES=   55   56   74   73      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  22.12      -8.000      -3.440      PRESS=   .00000                                                        .00000
MX,MY,MXY=  -.80758-014  -.83314-015   .88931-014
TOP SX,SY,SXY,SZ=  -.12481-010  -.10012-010   .83508-011   .00000      SIG1,SIG2,SIG3=  -.21616-028  -.27884-011  -.19877-010
    S.I.=   .19877-010  SIGE=   .18438-010
MID SX,SY,SXY,SZ=  -.27018-011  -.93218-011   .83907-012   .00000      SIG1,SIG2,SIG3=   .80939-029  -.25714-011  -.94821-011
    S.I.=   .94821-011  SIGE=   .84742-011
BOT SX,SY,SXY,SZ=   .70570-011  -.85509-011  -.54728-011   .00000      SIG1,SIG2,SIG3=   .83806-011   .15983-021  -.10874-010
    S.I.=   .20355-010  SIGE=   .17646-010

EL=  135  NODES=   56   57   75   74      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  27.06      -8.000      -3.440      PRESS=   .00000                                                        .00000
MX,MY,MXY=  -.18948-013   .18858-015   .33711-014
TOP SX,SY,SXY,SZ=  -.18122-010  -.20510-011   .33243-011   .00000      SIG1,SIG2,SIG3=  -.15718-028  -.13805-011  -.18782-010
    S.I.=   .18782-010  SIGE=   .18127-010
MID SX,SY,SXY,SZ=   .10186-012  -.22645-011  -.30050-012   .00000      SIG1,SIG2,SIG3=   .13952-012   .19184-022  -.23021-011
    S.I.=   .24418-011  SIGE=   .23749-011
BOT SX,SY,SXY,SZ=   .18326-010  -.24780-011  -.39253-011   .00000      SIG1,SIG2,SIG3=   .18042-010   .17471-021  -.31840-011
    S.I.=   .22238-010  SIGE=   .20822-010
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EL=  136  NODES=   57   58   76   75      MAT=  1  AREA=  10.7      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  28.50      -8.333      -3.44_      PRESS=   .00000                                                        .00000
MX,MY,MXY=  -.13038-013   .92818-015  -.73629-015
TOP SX,SY,SXY,SZ=  -.13700-010   .12374-011  -.70933-012   .00000      SIG1,SIG2,SIG3=   .13710-011   .11790-021  -.13734-010
    S.I.=   .15005-010  SIGE=   .14411-010
MID SX,SY,SXY,SZ=   .31360-012   .24147-012   .84518-013   .00000      SIG1,SIG2,SIG3=   .37152-012   .16855-012   .72868-024
    S.I.=   .37152-012  SIGE=   .32175-012
BOT SX,SY,SXY,SZ=   .14334-010  -.75440-012   .67836-012   .00000      SIG1,SIG2,SIG3=   .14384-010   .11835-021   .80537-012
    S.I.=   .15180-010  SIGE=   .14604-010

EL=  137  NODES=   58   59   77   76      MAT=  1  AREA=  10.7      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  28.50      .0000      -3.440      PRESS=   .00000                                                        .00000
MX,MY,MXY=   .15756-014   .73813-015  -.22154-014
TOP SX,SY,SXY,SZ=  -.25853-011  -.40304-011  -.38840-011   .00000      SIG1,SIG2,SIG3=   .85280-012   .62236-022  -.72883-011
    S.I.=   .78209-011  SIGE=   .78156-011
MID SX,SY,SXY,SZ=  -.42795-011  -.48241-011  -.15119-011   .00000      SIG1,SIG2,SIG3=  -.83685-029  -.30156-011  -.60880-011
    S.I.=   .60880-011  SIGE=   .52725-011
BOT SX,SY,SXY,SZ=  -.89736-011  -.56178-011   .87021-012   .00000      SIG1,SIG2,SIG3=   .51813-029  -.48075-011  -.86838-011
    S.I.=   .86839-011  SIGE=   .79884-011

EL=  138  NODES=   59   60   78   77      MAT=  1  AREA=  10.7      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  28.50       5.333      -3.440      PRESS=   .00000                                                        .00000
MX,MY,MXY=   .15151-013  -.73920-015   .20372-014
TOP SX,SY,SXY,SZ=   .11811-010  -.87078-011   .39748-011   .00000      SIG1,SIG2,SIG3=   .12622-010   .18024-021  -.10418-010
    S.I.=   .22940-010  SIGE=   .19895-010
MID SX,SY,SXY,SZ=  -.44807-011  -.88131-011   .17842-011   .00000      SIG1,SIG2,SIG3=  -.77309-029  -.38517-011  -.85421-011
    S.I.=   .85421-011  SIGE=   .83148-011
BOT SX,SY,SXY,SZ=  -.20772-010  -.81183-011  -.40832-012   .00000      SIG1,SIG2,SIG3=  -.27026-028  -.81052-011  -.20785-010
    S.I.=   .20785-010  SIGE=   .18145-010

EL=  139  NODES=   60   61   79   78      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  27.06       5.000      -3.440      PRESS=   .00000                                                        .00000
MX,MY,MXY=   .18419-013   .46786-015   .92653-014
TOP SX,SY,SXY,SZ=   .10857-010  -.47459-011   .87327-011   .00000      SIG1,SIG2,SIG3=   .13380-010   .18193-021  -.72488-011
    S.I.=   .20508-010  SIGE=   .18108-010
MID SX,SY,SXY,SZ=  -.89480-011  -.52480-011   .32304-011   .00000      SIG1,SIG2,SIG3=  -.77811-028  -.33754-011  -.10821-010
    S.I.=   .1082 -010  SIGE=   .85893-011
BOT SX,SY,SXY,SZ=  -.28753-010  -.67511-011  -.13183-010   .00000      SIG1,SIG2,SIG3=   .25063-012   .27504-021  -.34754-010
    S.I.=   .35006-010  SIGE=   .34680-010

EL=  140  NODES=   61   62   80   79      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  22.12       5.000      -3.440      PRESS=   .00000                                                        .00000
MX,MY,MXY=   .62328-014  -.11225-015   .13218-013
TOP SX,SY,SXY,SZ=  -.84622-011  -.15808-011   .13723-010   .00000      SIG1,SIG2,SIG3=   .10806-010   .23288-021  -.18707-010
    S.I.=   .25613-010  SIGE=   .25941-010
MID SX,SY,SXY,SZ=  -.18314-010  -.17815-011  -.48831-012   .00000      SIG1,SIG2,SIG3=   .17834-011   .15806-021  -.18328-010
    S.I.=   .20120-010  SIGE=   .19288-010
BOT SX,SY,SXY,SZ=  -.37187-010  -.19022-011  -.14898-010   .00000      SIG1,SIG2,SIG3=   .80384-011   .32484-021  -.33304-010
    S.I.=   .41343-010  SIGE=   .37867-010

EL=  141  NODES=   62   63   81   80      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  17.21       5.000      -3.440      PRESS=   .00000                                                        .00000
MX,MY,MXY=  -.84410-015  -.29428-014   .88533-014
TOP SX,SY,SXY,SZ=  -.21956-010  -.15438-011   .10218-010   .00000      SIG1,SIG2,SIG3=   .28928-011   .22896-021  -.28183-010
    S.I.=   .28588-010  SIGE=   .27838-010
MID SX,SY,SXY,SZ=  -.21049-010   .16208-011  -.37583-012   .00000      SIG1,SIG2,SIG3=   .16288-011   .17821-021  -.21068-010
    S.I.=   .22862-010  SIGE=   .21913-010
BOT SX,SY,SXY,SZ=  -.20141-010   .47850-011  -.10870-010   .00000      SIG1,SIG2,SIG3=   .88255-011   .28091-021  -.34281-010
```

SARGENT&LUNDY

3308

64

```
    S.I.=    .33207-010  SIGE=   .29765-010

EL=   142  NODES=    83    84    82    81       MAT=   1  AREA=  9.83      TTOP,TBOT=   150.0   150.0                          QUAD SHELL   83
XC,YC,ZC=   12.29        8.000       -3.440       PRESS=    .00000          .00000
MX,MY,MXY=   -.12888-013   -.85356-014   -.75008-015
TOP SX,SY,SXY,S2=  -.37871-010  -.11700-010  -.11070-011    .00000      SIG1,SIG2,SIG3=  -.32874<E30  -.1<E30  -.2<E30
    S.I.=    .27718-010  SIGE=   .33450-010
MID SX,SY,SXY,S2=  -.23707-010  -.25221-011  -.30050-012    .00000      SIG1,SIG2,SIG3=  -.21407-026  -.2<E30  -.2<E30
    S.I.=    .23712-010  SIGE=   .22858-010
BOT SX,SY,SXY,S2=  -.97437-011   .98558-011   .50803-012    .00000      SIG1,SIG2,SIG3=   .98714-011  -.1<E30  -.3<E30
    S.I.=    .18431-010  SIGE=   .14313-010

EL=   143  NODES=    84    85    83    82       MAT=   1  AREA=  9.83      TTOP,TBOT=   150.0   150.0                          QUAD SHELL   83
XC,YC,ZC=   7.375        8.000       -3.440       PRESS=    .00000          .00000
MX,MY,MXY=   -.22781-013   -.14581-013   -.13084-013
TOP SX,SY,SXY,S2=  -.48128-010  -.20308-010  -.14181-010    .00000      SIG1,SIG2,SIG3=  -.21306<E30  -.7<E30  -.8<E30
    S.I.=    .54837-010  SIGE=   .48312-010
MID SX,SY,SXY,S2=  -.24833-010  -.46308-011  -.11289-012    .00000      SIG1,SIG2,SIG3=   .21381<E30  -.4<E30  -.3<E30
    S.I.=    .24634-010  SIGE=   .22876-010
BOT SX,SY,SXY,S2=  -.13730-012   .11047-010   .13956-010    .00000      SIG1,SIG2,SIG3=   .20483<E30  -.2<E30  -.3<E30
    S.I.=    .30069-010  SIGE=   .26806-010

EL=   144  NODES=    85    86    84    83       MAT=   1  AREA=  9.83      TTOP,TBOT=   150.0   150.0                          QUAD SHELL   83
XC,YC,ZC=   2.458        8.000       -3.440       PRESS=    .00000          .00000
MX,MY,MXY=   -.52438-014    .16827-013   -.74862-014
TOP SX,SY,SXY,S2=  -.32391-010   .14565-010  -.84082-011    .00000      SIG1,SIG2,SIG3=   .16065<E30  -.2<E30  -.2<E30
    S.I.=    .49530-010  SIGE=   .44150-010
MID SX,SY,SXY,S2=  -.26753-010  -.33136-011  -.48014-012    .00000      SIG1,SIG2,SIG3=   .34804<E30  -.3<E30  -.2<E30
    S.I.=    .26762-010  SIGE=   .25272-010
BOT SX,SY,SXY,S2=  -.21314-010  -.21182-010   .75879-011    .00000      SIG1,SIG2,SIG3=   .18361<E30  -.1<E30  -.2<E30
    S.I.=    .28721-010  SIGE=   .24685-010

  *** ELEM. STRESS CALC. TIMES
 TYPE  NUMBER  STIF  TOTAL CP   AVE CP

  1       15    24      7.839      .523
  2       60    48     58.912      .982
  3       36    24     28.084      .780
  4       33    83     53.001     1.606

*** LOAD STEP     1   ITER     1  COMPLETED.  TIME=    .000000      TIME INC=    .000000      NEW TRIANGULAR MATRIX  (ITER=     1)

 INTEGER STORAGE REQUIREMENTS FOR STRESS AND FORCE CALCULATIONS    CP=    509.220  TIME=  [illegible]
 MEMORY REQUIRED=     2216  MEMORY AVAILABLE= 4002000

 *** STORAGE REQUIREMENT SUMMARY
MAXIMUM MEMORY USED            =   13528
MAXIMUM MEMORY AVAILABLE       = 4002000

  *** PROBLEM STATISTICS
 NO. OF ACTIVE DEGREES OF FREEDOM =     441
 R.M.S. WAVEFRONT SIZE =     85.3

 *** ANSYS BINARY FILE STATISTICS
BUFFER SIZE USED= 1232
```

SARGENT & LUNDY

65

```
POST DATA WRITTEN ON FILE12
RESTART DATA WRITTEN ON FILE 3    (  241114 WORDS)
TRIANGULARIZED MATRIX WRITTEN ON FILE11    (   77880 WORDS)

END OF INPUT ENCOUNTERED ON FILE27

***** INPUT FILE SWITCHED FROM FILE27 TO FILE18
```

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3308

```
        ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 HVAC PENETRATION WITH FIRE DAMPER - UNIFORM EXPANSION                                13.7344   1/15/88 CP=     909.557

          ***** ANSYS RUN TIME ESTIMATOR *****


***** ANSYS RUN TIME ESTIMATOR *****

COMPUTER = UNIVAC 1100              NUMBER OF MASTER DOF =    0
ANALYSIS TYPE =  0                  RMS WAVE FRONT =     88
NUMBER OF NODES =      74           TOTAL NO. OF ITERATIONS =      1
MAX. DOF PER NODE =  6              STIFF. MATRIX SAVE KEY = 0
NUMBER OF MATRICES = 1              ELEM. MATRIX SAVE KEY = 0
NUMBER OF STRESS SOLUTIONS=     1   ROTATED NODE FRACTION=  .000

  STIF  NUMBER    FORM. TIME  STRESS TIME     NAME
    24      51         .312          .995   PLASTIC THIN-WALL BEAM, 3-D
    46      60         .523          .536   PLASTIC TRIANGULAR SHELL
    63      33        1.096          .627   QUAD. FLAT SHELL


  ANALYSIS PHASE          FIRST      SUBSEQUENT
                        ITERATION   ITERATIONS       TOTAL

ELEMENT FORMULATION         15.13        15.13       15.13
WAVE FRONT SOLUTION          8.92         8.92        8.92
BACK SUBSTITUTION             .69          .69         .69
ELEMENT STRESSES            18.79        18.79       18.79

    TOTAL TIME (SEC)        43.54        43.54       43.54


***** ROUTINE COMPLETED *****  CP =        909.669

END OF INPUT ENCOUNTERED ON FILE18


***** RUN COMPLETED *****  CP=       909.8410    TIME=    13.7344

@PMD,LEAP
PMD NOT ALLOWED
```

SARGENT & LUNDY

```
@SLXQT  OPSS*OSSABSOLUTES ANSOBS185410/PLOT33
SLXQT 2.2 SL7SR1 01/15/88 13:44:05


                PROGRAM ID ANSOBS185410                              PROGRAM FILE DATE FEBRUARY 1, 1984 21:41:38

                RUN ID     SJH88                                     DIVISION STATION ID  CL1483600

                     *****    PROGRAM USED IS VALIDATED ACCORDING TO GDP 4-1    *****
                                AND EXECUTED FROM CSD CONTROLLED FILES
```

SARGENT & LUNDY

3308

```
@XQT     OPS$:[OPS$ABSOLUTES.ANSO85]86410/PLOT33
***** NO PLOT GENERATED *****
***** END OF PLOT33 *****

@PMD.LEAP
PMD NOT ALLOWED

@FIN
```

SARGENT & LUNDY

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3308

```
CONSOLE MESSAGES :
SITE IDENTIFIER: S&L-B      SYSTEM TYPE: 1100/80A
S & L  PROGRAM NUMBER:  ANS085185410
*** PROGRAM ANS085185410 IS VALIDATED ACCORDING TO GOP 4-1 ***
XOT - SYS$          * OPS$           - ANS085185410 /                HAD      0 OVRFLW,      0 UNDFLW,      0 DIVFLT,      0 O/O FLT
*** PROGRAM ANS085185410/PLOT33 IS VALIDATED ACCORDING TO GOP 4-1 ***
XOT - OPS$          * OBSABSOLUTES - ANS085185410 / PLOT33          HAD      0 OVRFLW,      0 UNDFLW,      0 DIVFLT,      0 O/O FLT
     $JH$$  FIN
```

SARGENT & LUNDY

BULLETIN

FOR EVERY PROBLEM THERE
IS ONE SOLUTION WHICH IS
SIMPLE, NEAT AND WRONG.

H. L. MENCKEN

COMPUTER SOFTWARE LIBRARY NOTICE

ALL 1985 ANNUAL NUMBERS WILL EXPIRE ON THE LATEST COMPLETION DATE.
ALL 1985 SPECIAL TASK NUMBERS WILL EXPIRE ON THEIR COMPLETION DATE.
ALL 1986 TASK NUMBERS WILL BE EFFECTIVE JANUARY 02, 1986

DAG   DEC 30, 1985   08:00   1100/80 OAKBROOK SYSTEM

SARGENT & LUNDY

SARGENT & LUNDY ENGINEERS
CHICAGO, ILLINOIS

PEAK-MEM 177664 AVERAGE-MEM 137728

** RUN TIME SUMMARY IN SUPS **

RUNID: JH86 ACCT: 215 PROJECT: CLI453600

TIME: TOTAL: 00:05:55.851 CRSUPS: 478960832

CPU: 00:01:37.027 I/O: 00:01:52.414

CC/ER: 00:03:16.409 WAIT: 00:00:00.050

IMAGES READ: 215 PAGES: 68

START: 13:34:42 JAN 15,1986 FIN: 13:44:08 JAN 15,1986

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3308

HVAC Penetration and Fire Damper Linear Structural Analysis

2

```
1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890**SEQ NO. 00
```

SJH03

```
* * * * * * UNIVAC 1100 TIME/SHARING EXEC --- MULTI-PROCESSOR SYSTEM --- LEV. 38R3A       SITE *    ESAL-R* * * * * *

   RUNID * SJH03        USER ID * OE8181            PART NUMBER *         INPUT DEVICE * [redacted]        OUTPUT DEVICE * XEROX1
     FILE NAME * RSIS-SJH03  011888120034 CREATED AT:    11:56:15 JAN 18,1988                 PRINTED AT:   13:13:30 JAN 18,1988

1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890**SEQ NO. 00
```

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3

```
@RUN,G/N      JH03,215/OE8181,CL1453600,45,400          . HAMPTON     CALLX8810
```

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3308

```
@PROG ANS095185410
PROG 2R2A     S&L-8   1100/80A      (851125 0855:53) 1985 Jan 18 Sat 1156:18

@ASG,A SJH-CLINTON*EQUIPMENT
W:120133 File is already assigned.

@DELETE,C SJH-CLINTON*POSTFILE39.
FURPUR 28R3A STATII 01/18/86 11:56:17

SJH-CLINTON*POSTFILE39    IS NOT CATALOGUED OR ASSIGNED
FAC STATUS: 400010000000

@ASG,UP SJH-CLINTON*POSTFILE39.

@USE 12,,SJH-CLINTON*POSTFILE39.
```

SARGENT & LUNDY

```
$O
QUEUE Processor Level 7.7    (851125 1501:08) 1986 Jan 18 Sat 1156:18



PRINTS file is to be synsed to device   XEROX1
    $eqq
$ACNT=ANS095185410,$PRO=215CL:452800,$RND=SJH03  ,$USR=OEA181,$DAT=011886115815,
FICHE=3,ORIGINAL=2,LOC=3GV12,LABEL=LINEAR FULL THERMAL SIMULATION OF HVAC PENETRATION,XEROX=2,JDL=TWOUP,COLOR=BUFF,RTO1=
1-HAMPTON 3GV12,LINEPRNT=PR,
    $eqq
END 0:
```

SARGENT & LUNDY

3308

```
@ELT,IL TPFS.DATA
ELT AR2 75R205 01/18/88 11:56.18 (->00)
      1            00      /PREP7
      2            00      /TITLE, HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE
      3            00      C*** DEFINE ANALYSIS PARAMETERS
      4            00      KAN,0
      5            00      C*** KAY,3,0
      6            00      C*** KAY,6,1
      7            00      C*** KAY,8,0
      8            00      C*** KNL,1
      9            00      TREF,70.0
     10            00      C*** DEFINE ELEMENTS AND PROPERTIES
     11            00      ET,1,24,,,1,,,1
     12            00      R,1,0.0,0.0,,0.0,1.9375,.125
     13            00      RMORE,1.9375,1.9375,.125
     14            00      ET,2,48
     15            00      R,2,.0747
     16            00      ET,3,24
     17            00      R,3,0.0,0.0,,0.0,,.75,.0359
     18            00      RMORE,-.75,.75,.0359
     19            00      ET,4,63
     20            00      R,4,.1106
     21            00      R,5,.0747
     22            00      R,6,0.0,0.0,,0.0,-.75,.0359
     23            00      RMORE,-.75,-.75,.0359
     24            00      R,7,0.0,0.0,,0.0,1.9375,.125
     25            00      RMORE,-1.9375,1.9375,.125
     26            00      C*** DEFINE MATERIAL PROPERTIES
     27            00      MPTEMP,1,100,300,600,800,1000,1300
     28            00      MPDATA,EX,1,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
     29            00      MPDATA,ALPX,1,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.6E-6,9.8E-6
     30            00      NUXY,1,.3
     31            00      C*** DEFINE NONLINEAR MATERIAL PROPERTIES
     32            00      MPTEMP,1,100,300,600,800,1000,1300
     33            00      MPDATA,EX,2,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
     34            00      NUXY,2,.3
     35            00      MPDATA,ALPX,2,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.6E-6,9.8E-6
     36            00      NL,2,13,2
     37            00      NL,2,19,100,300,600,800,1000,1300
     38            00      NL,2,25,35E3,33E3,27E3,23E3,18E3,6E3
     39            00      NL,2,31,.2,.2,.2,.2,.2,.2
     40            00      C*** DEFINE NODES
     41            00      N,1,0.0,-8.0,8.44  $,7,29.5,-8.0,8.44  $FILL
     42            00      N,10,29.5,8.0,8.44  $FILL $N,16,0.0,8.0,8.44  $FILL
     43            00      NGEN,3,16,1,16,1,0.0,0.0,-2.0  $N,49,0.0,2.67,2.44  $,50,0.0,0,-2.67,2.44
     44            00      NGEN,2,18,33,50,1,0.0,0.0,0.0,-4.88
     45            00      NGEN,2,18,51,66,1,0.0,0.0,0.0,-4.0
     46            00      C*** DEFINE ELEMENTS
     47            00      MAT,2
     48            00      R,1,2,17  $EGEN,15,1,1
     49            00      TYPE,2  $REAL,2  $MAT,2
     50            00      E,1,2,17  $,17,2,18  $,18,2,19  $,2,3,19  $EGEN,7,2,16,19,1
     51            00      E,31,15,16  $,16,32,31
     52            00      E,33,17,34  $,17,18,34  $,34,18,19  $,34,19,35  $EGEN,7,2,48,49,1
     53            00      E,47,31,48  $,31,32,48
     54            00      TYPE,3 $REAL,3 $MAT,1
     55            00      E,33,34,51  $EGEN,17,1,76  $E,50,33,51
     56            00      TYPE,4  $REAL,4
```

SARGENT & LUNDY

```
     57            00      E,33,34,51,51,  $,51,34,52,52  $,34,53,52,52  $,34,35,53,53
     58            00      EGEN,8,2,94,97,1
     59            00      E,49,50,67,67  $,50,66,67,67  $,50,51,66,66  $,50,33,51,51
     60            00      TYPE,3  $REAL,6
     61            00      E,51,52,70  $EGEN,15,1,130  $E,67,66,69  $E,66,51,69
     62            00      TYPE,4  $REAL,5
     63            00      E,51,70,69,69  $,51,52,70,70  $,52,53,70,70  $,53,71,70,70
     64            00      EGEN,7,2,147,150,1
     65            00      E,65,64,83,83  $,65,66,84,84
     66            00      TYPE,1  $REAL,7
     67            00      E,69,70,52  $EGEN,15,1,177
     68            00      C*** DEFINE CONSTRAINTS
     69            00      D,1,UX,0.0,0.0,1.0,UY,ROTY,ROTZ
     70            00      D,16,UX,0.0,0.0,16.0,ROTY,ROTZ
     71            00      D,17,UX,0.0,0.0,33.16,UY,ROTY,ROTZ
     72            00      D,32,UX,0.0,0.0,48.16,ROTY,ROTZ
     73            00      D,51,UX,0.0,0.0,65.16,UY,ROTY,ROTZ
     74            00      D,66,UX,0.0,0.0,84.16,ROTY,ROTZ
     75            00      D,69,UZ,0.0,0.0,84,1
     76            00      D,49,UX,0.0,0.0,50,1,ROTY,ROTZ
     77            00      D,67,UX,0.0,0.0,68,1,ROTY,ROTZ
     78            00      C*** DEFINE THERMAL LOADING
     79            00      KBC,1
     80            00      TUNIF,150.0
     81            00      KTEMP,-1
     82            00      T,13,231.38  $TGEN,4,1,13
     83            00      T,1,1300.0  $TGEN,7,1,1
     84            00      T,10,230.67  $T,11,231.1367  $T,12,227.3787
     85            00      T,8,634.0933  $T,9,280.5863
     86            00      ITER,1,1,1
     87            00      APWRIT
     88            00      FINISH
     89            00      /INPUT,27
     90            00      FINISH


@ADD,LP $RUN.

END ELT.  ERRORS: NONE.  TIME:  2.464 SEC.  IMAGE COUNT: 90


@PRT,I .
FURPUR 28R3A S747(1) 01/18/88 11:56:19
CLI453600*TPFS(0),D8470,T
SJH-CLINTON*EQUIPMENT(1),D8470,20A  @@@@SSSYM$$$.
SYS$*PROGSJH03(1),D8470,2X!RP  @@@@STSYM$$$.
SYS$*$PROGSNUM$$(0),D8470,T  $PRGS.
CLI453600*$RUN(0),D8470,T  @@@@SYSYM$$$.
SJH-CLINTON*POSTFILE39(1),D8470,XUP  12.


@PRT,S TPFS.DATA .
```

SARGENT & LUNDY

3308

```
CL1453600+TPPS(0) DATA(0)
      1       /PREP7
      2       /TITLE, HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE
      3       C*** DEFINE ANALYSIS PARAMETERS
      4       KAN,0
      5       C*** KAY,3,0
      6       C*** KAY,5,1
      7       C*** KAY,6,0
      8       C*** KNL,1
      9       TREF,70.0
     10       C*** DEFINE ELEMENTS AND PROPERTIES
     11       ET,1,24,,,1,,,1
     12       R,1,0.0,0.0,0.0,0.1,.9375,.125
     13       RMORE,1.9375,1.9375,.125
     14       ET,2,48
     15       R,2,.0747
     16       ET,3,24
     17       R,3,0.0,0.0,0.,0.0,.75,.0388
     18       RMORE,-.75,.75,.0359
     19       ET,4,63
     20       R,4,.1105
     21       R,5,.0747
     22       R,6,0.0,0.0,0.,0.0,-.75,.0359
     23       RMORE,-.75,-.75,.0359
     24       R,7,0.0,0.0,0.,0.0,1.9375,.125
     25       RMORE,-1.9375,1.9375,.125
     26       C*** DEFINE MATERIAL PROPERTIES
     27       MPTEMP,1,100,300,600,800,1000,1300
     28       MPDATA,EX,1,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
     29       MPDATA,ALPX,1,1,6.52E-6,7.3E-6,8.35E-6,8.8E-6,9.6E-6,9.6E-6
     30       NUXY,1,.3
     31       C*** DEFINE NONLINEAR MATERIAL PROPERTIES
     32       MPTEMP,1,100,300,600,800,1000,1300
     33       MPDATA,EX,2,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
     34       NUXY,2,.3
     35       MPDATA,ALPX,2,1,6.52E-6,7.3E-6,8.35E-6,8.8E-6,9.6E-6,9.6E-6
     36       NL,2,13,2
     37       NL,2,19,100,300,600,800,1000,1300
     38       NL,2,25,36E3,33E3,27E3,23E3,18E3,6E3
     39       NL,2,31,.2,.2,.2,.2,.2
     40       C*** DEFINE NODES
     41       N,1,0.0,-8.0,8.44  $,7,29.5,-8.0,8.44  $FILL
     42       N,10,29.5,8.0,8.44  $FILL $N,18,0.0,8.0,8.44  $FILL
     43       NGEN,3,18,1,18,1,0.0,0.0,-2.0  $N,48,0.0,2.67,2.44  $,50,0.0,-2.67,2.44
     44       NGEN,2,18,33,50,1,0.0,0.0,-4.88
     45       NGEN,2,18,51,68,1,0.0,0.0,-4.0
     46       C*** DEFINE ELEMENTS
     47       MAT,2
     48       E,1,2,17  $EGEN,15,1,1
     49       TYPE,2  $REAL,2  $MAT,2
     50       E,1,2,17  $,17,2,18  $,18,2,19  $,2,3,19  $EGEN,7,2,16,18,1
     51       E,31,15,16  $,16,32,31
     52       E,33,17,34  $,17,18,34  $,34,18,19  $,34,19,35  $EGEN,7,2,46,48,1
     53       E,47,31,48  $,31,32,48
     54       TYPE,3 $REAL,3 $MAT,1
     55       E,33,34,51  $EGEN,17,1,76  $E,50,33,51
     56       TYPE,4  $REAL,4
     57       E,33,34,51,51,  $,51,34,52,52  $,34,53,52,52  $,34,35,53,53
```

SARGENT&LUNDY

```
     58       EGEN,8,2,84,87,1
     59       E,49,50,67,67  $,50,68,67,67  $,50,51,68,68  $,50,33,51,51
     60       TYPE,3  $REAL,6
     61       E,51,52,70  $EGEN,15,1,120  $E,67,68,69  $E,68,51,69
     62       TYPE,4  $REAL,5
     63       E,51,70,69,69  $,51,52,70,70  $,52,53,70,70  $,53,71,70,70
     64       EGEN,7,2,147,150,1
     65       E,65,84,83,83  $,65,66,84,84
     66       TYPE,1  $REAL,7
     67       E,69,70,52  $EGEN,15,1,177
     68       C*** DEFINE CONSTRAINTS
     69       D,1,UX,0.0,0.0,1.0,UY,ROTY,ROTZ
     70       D,18,UX,0.0,0.0,18.0,ROTY,ROTZ
     71       D,17,UX,0.0,0.0,33.18,UY,ROTY,ROTZ
     72       D,32,UX,0.0,0.0,48.18,ROTY,ROTZ
     73       D,51,UX,0.0,0.0,69.18,UY,ROTY,ROTZ
     74       D,68,UX,0.0,0.0,84.18,ROTY,ROTZ
     75       D,68,UZ,0.0,0.0,84.1
     76       D,49,UX,0.0,0.0,50.1,ROTY,ROTZ
     77       D,67,UX,0.0,0.0,84.1,ROTY,ROTZ
     78       C*** DEFINE THERMAL LOADING
     79       KBC,1
     80       TUNIF,150.0
     81       KTEMP,-1
     82       T,13,231.38  $TGEN,4,1,13
     83       T,1,1300.0  $TGEN,7,1,1
     84       T,10,230.67  $T,11,231.1367  $T,12,237.3787
     85       T,8,634.0933  $T,9,280.5863
     86       ITER,1,1,1
     87       AFWRIT
     88       FINISH
     89       /INPUT,27
     90       FINISH

@ASG,A OPS$*OBSABSOLUTES.
W:121432 File is cataloged as a read only file.
W:122333 A write key exists on the file.

@ADD,PL OPS$*OBSABSOLUTES.ANSOBS185410

@ASG,T  2.,///2500

@ASG,T  3.,///2500

@ASG,T  4.,///2000

@ASG,T  7.,///2000

@ASG,T  8.,///2000
```

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3308

```
@ASG,T   9.,///2000

@ASG,T   10.,///2000

@ASG,T   11.,///2500

@ASG,T   12.,///3000
W:170133 file is already assigned
W:122633 option(s) conflict with previous assign options --
option conflict ignored

@ASG,T   13.,///2000

@ASG,T   14.,///2000

@ASG,T   15.,///2000

@ASG,T   16.,///2000

@ASG,T   17.,///3500

@ASG,T   18.,///2000

@ASG,T   19.,///2000

@ASG,T   20.,///2000

@ASG,T   21.,///2000

@ASG,T   22.,///2000

@ASG,T   23.,///2000

@ASG,T   24.,///2000

@ASG,T   25.,///2000

@ASG,T   30.,///2000

@ASG,A     DSANDOCU$*ANSO95185410.
```



```
W:121433 file is catalogued as a read only file.
W:122333 a write key exists on the file.

@USE   31.,DSANDOCU$*ANSO95185410.
```

12

```
@SLXOT  SYS$*DPSS.ANS0851854101
SLXOT 2.2 SL75R1 01/18/86 11:55:20


                PROGRAM ID ANS0851854101                              PROGRAM FILE DATE JANUARY 25, 1985 13:11:25
                RUN ID     SJH03                                      DIVISION STATION ID  CL1453500
                     *****   PROGRAM USED IS VALIDATED ACCORDING TO GDP 4-1   *****
                             AND EXECUTED FROM CSD CONTROLLED FILES
```

SARGENT & LUNDY

13

```
@XOT    SYS$*DPSS.ANS0851854101
```

SARGENT & LUNDY

3/08

```
          **********  ANSYS INPUT DATA LISTING (FILE18)  **********

          6    12    18    24    30    36    42    48    54    60    66    72    78
          V     V     V     V     V     V     V     V     V     V     V     V     V
 1   /PREP7
 2   /TITLE, HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE
 3   C*** DEFINE ANALYSIS PARAMETERS
 4   KAN,0
 5   C*** KAY,3,0
 6   C*** KAY,5,1
 7   C*** KAY,8,0
 8   C*** KNL,1
 9   TREF,70.0
10   C*** DEFINE ELEMENTS AND PROPERTIES
11   ET,1,24,,,1,,,1
12   R,1,0.0,0.0,0.0,,0.0,1.9375,.125
13   RMORE,1.9375,1.9375,.125
14   ET,2,48
15   R,2,.0747
16   ET,3,24
17   R,3,0.0,0.0,0.0,,0.0,.75,.0359
18   RMORE,-.75,.75,.0359
19   ET,4,63
20   R,4,.1108
21   R,5,.0747
22   R,6,0.0,0.0,0.0,,0.0,-.75,.0359
23   RMORE,-.75,-.75,.0359
24   R,7,0.0,0.0,0.0,,0.0,1.9375,.125
25   RMORE,-1.9375,1.9375,.125
26   C*** DEFINE MATERIAL PROPERTIES
27   MPTEMP,1,100,300,600,800,1000,1300
28   MPDATA,EX,1,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
29   MPDATA,ALPX,1,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.6E-6,9.6E-6
30   NUXY,1,.3
31   C*** DEFINE NONLINEAR MATERIAL PROPERTIES
32   MPTEMP,1,100,300,600,800,1000,1300
33   MPDATA,EX,2,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
34   NUXY,2,.3
35   MPDATA,ALPX,2,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.6E-6,9.6E-6
36   NL,2,12,2
37   NL,2,18,100,300,600,800,1000,1300
38   NL,2,25,36E3,33E3,27E3,23E3,18E3,6E3
39   NL,2,31,.2,.2,.2,.2,.2,.2
40   C*** DEFINE NODES
41   N,1,0.0,-8.0,6.44  $,7,29 $,-8.0,6.44  $FILL
42   N,10,29 $,8.0,6.44  $FILL $N,16,0.0,8.0,6.44  $FILL
43   NGEN,3,16,1,16,1,0.0,0.0,-2.0  $N,49,0.0,2.67,2.44  $,50,0.0,-2.67,2.44
44   NGEN,2,18,33,50,1,0.0,0.0,-4.88
45   NGEN,2,18,51,66,1,0.0,0.0,-4.0
46   C*** DEFINE ELEMENTS
47   MAT,2
48   E,1,2,17  $EGEN,15,1,1
49   TYPE,2  $REAL,2  $MAT,2
50   E,1,2,17  $,17,2,18  $,18,2,19  $,2,3,19  $EGEN,7,2,18,19,1
          A     A     A     A     A     A     A     A     A     A     A     A     A

                                                                  SARGENT & LUNDY
```

```
          **********  ANSYS INPUT DATA LISTING (FILE18)  **********

          6    12    18    24    30    36    42    48    54    60    66    72    78
          V     V     V     V     V     V     V     V     V     V     V     V     V
51   E,31,15,16  $,16,32,31
52   E,33,17,34  $,17,18,34  $,34,18,19  $,34,19,35  $EGEN,7,2,46,49,1
53   E,47,31,48  $,31,32,48
54   TYPE,3 $REAL,3 $MAT,1
55   E,33,34,51  $EGEN,17,1,76  $E,50,33,51
56   TYPE,4  $REAL,4
57   E,33,34,51,51,  $,51,34,52,52  $,34,53,52,52  $,34,35,53,53
58   EGEN,8,2,84,97,1
59   E,48,50,67,67  $,50,68,67,67  $,50,51,68,68  $,50,33,51,51
60   TYPE,3  $REAL,6
61   E,51,52,70  $EGEN,15,1,130  $E,67,68,69  $E,68,51,69
62   TYPE,4  $REAL,5
63   E,51,70,68,69  $,51,52,70,70  $,52,53,70,70  $,53,71,70,70
64   EGEN,7,2,147,150,1
65   E,65,84,63,83  $,65,66,84,84
66   TYPE,1  $REAL,7
67   E,69,70,52  $EGEN,15,1,177
68   C*** DEFINE CONSTRAINTS
69   D,1,UX,0.0,0.0,1,0,UY,ROTY,ROTZ
70   D,15,UX,0.0,0.0,16,0,ROTY,ROTZ
71   D,17,UX,0.0,0.0,33,15,UY,ROTY,ROTZ
72   D,32,UX,0.0,0.0,48,15,ROTY,ROTZ
73   D,51,UX,0.0,0.0,69,15,UY,ROTY,ROTZ
74   D,86,UX,0.0,0.0,84,18,ROTY,ROTZ
75   D,69,UZ,0.0,0.0,84,1
76   D,49,UX,0.0,0.0,0.0,50,1,ROTY,ROTZ
77   D,67,UX,0.0,0.0,0.0,68,1,ROTY,ROTZ
78   C*** DEFINE THERMAL LOADING
79   KBC,1
80   TUNIF,120.0
81   KTEMP,-1
82   T,13,231.38  $TGEN,4,1,13
83   T,1,1300.0  $TGEN,7,1,1
84   T,10,230.67  $T,11,231.1367  $T,12,237.3767
85   T,5,634.0833  $T,8,280.5863
86   ITER,1,1,1
87   AFWRIT
88   FINISH
89   /INPUT,27
90   FINISH
```

SARGENT & LUNDY

```
         ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN 1, 1963
     SWANSON ANALYSIS SYSTEMS, INC          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 TITLE                                                                  11.9431   1/16/86 CP=         .000

        ***** ANSYS ANALYSIS DEFINITION (PREP7) *****

NEW TITLE=  HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE

C*** DEFINE ANALYSIS PARAMETERS

ANALYSIS TYPE=  0

C*** KAY,3,0

C*** KAY,6,1

C*** KAY,8,0

C*** KNL,1

REFERENCE TEMPERATURE=  70.000  (TUNIF=  70.000)

C*** DEFINE ELEMENTS AND PROPERTIES

ELEMENT TYPE  1 USES STIF 24
 KEYOPT(1-9)=   0   0   1      0   0   0   (NOTPR=  0  NUMBER OF NODES=   3

PLASTIC THIN-WALL BEAM, 3-D

CURRENT NODAL DOF SET IS  UX     UY     UZ     ROTX   ROTY   ROTZ
 THREE-DIMENSIONAL STRUCTURE

 REAL CONSTANT SET    1  ITEMS    1 TO    6
      .000           .000           .000           .000           1.84           .125

 REAL CONSTANT SET    1  ITEMS    7 TO   12
      1.84          1.84           .125           .000           .000           .000

ELEMENT TYPE  2 USES STIF 48
 KEYOPT(1-8)=   0   0   0      0   0   0      0   0   0   (NOTPR=  0  NUMBER OF NODES=   3

PLASTIC TRIANGULAR SHELL

CURRENT NODAL DOF SET IS  UX     UY     UZ     ROTX   ROTY   ROTZ
 THREE-DIMENSIONAL STRUCTURE

 REAL CONSTANT SET    2  ITEMS    1 TO    6
      .747-001       .000           .000           .000           .000           .000

ELEMENT TYPE  3 USES STIF 24
```

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```
 KEYOPT(1-9)=   0   0   0      0   0   0      0   0   0   (NOTPR=  0  NUMBER OF NODES=   3

PLASTIC THIN-WALL BEAM, 3-D

CURRENT NODAL DOF SET IS  UX     UY     UZ     ROTX   ROTY   ROTZ
 THREE-DIMENSIONAL STRUCTURE

 REAL CONSTANT SET    3  ITEMS    1 TO    6
      .000           .000           .000           .000           .750           .359-001

 REAL CONSTANT SET    3  ITEMS    7 TO   12
     -.750           .750           .359-001       .000           .000           .000

ELEMENT TYPE  4 USES STIF 63
 KEYOPT(1-8)=   0   0   0      0   0   0      0   0   0   (NOTPR=  0  NUMBER OF NODES=   4

QUAD. FLAT SHELL

CURRENT NODAL DOF SET IS  UX     UY     UZ     ROTX   ROTY   ROTZ
 THREE-DIMENSIONAL STRUCTURE

 REAL CONSTANT SET    4  ITEMS    1 TO    6
      .111           .000           .000           .000           .000           .000

 REAL CONSTANT SET    5  ITEMS    1 TO    6
      .747-001       .000           .000           .000           .000           .000

 REAL CONSTANT SET    6  ITEMS    1 TO    6
      .000           .000           .000           .000          -.750           .359-001

 REAL CONSTANT SET    6  ITEMS    7 TO   12
     -.750          -.750           .359-001       .000           .000           .000

 REAL CONSTANT SET    7  ITEMS    1 TO    6
      .000           .000           .000           .000          1.84           .125

 REAL CONSTANT SET    7  ITEMS    7 TO   12
     -1.84          1.84           .125           .000           .000           .000

C*** DEFINE MATERIAL PROPERTIES

*** TEMPERATURE TABLE FOR PROPERTIES     NUM. TEMPS=   6 ***
SLOC=    1      100.0000       300.0000       600.0000
              800.0000       1000.000       1300.000

PROPERTY TABLEEX    MAT=    1  NUM. POINTS=   6
SLOC=    1      .2900000+008   .2830000+008   .2670000+008   .2420000+008
              .2100000+008   .1800000+008

PROPERTY TABLEALPX  MAT=    1  NUM. POINTS=   6
SLOC=    1      .6530000-005   .7300000-005   .8350000-005   .8900000-005
              .9600000-005   .9500000-005

 MATERIAL    1          COEFFICIENTS OF NUXY VS. TEMP EQUATION
  C0 =    .3000000

PROPERTY TABLE NUXY  MAT=    1  NUM. POINTS=   6
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3108

```
      TEMPERATURE      DATA          TEMPERATURE      DATA
      100.0000        .3000000       300.0000        .3000000
      600.0000        .3000000       800.0000        .3000000
      1000.000        .3000000       1300.000        .3000000

C*** DEFINE NONLINEAR MATERIAL PROPERTIES


*** TEMPERATURE TABLE FOR PROPERTIES     NUM. TEMPS=   6 ***
SLOC=    1      100.0000        300.0000        600.0000
               800.0000        1000.000        1300.000

PROPERTY TABLEEX    MAT=    2  NUM. POINTS=   6
SLOC=    1      .2900000+008    .2830000+008    .2670000+008    .2420000+008
               .2100000+008    .1800000+008

 MATERIAL    2          COEFFICIENTS OF NUXY VS. TEMP EQUATION
  C0 =    .3000000

PROPERTY TABLE NUXY  MAT=    2  NUM. POINTS=   6
      TEMPERATURE      DATA          TEMPERATURE      DATA
      100.0000        .3000000       300.0000        .3000000
      600.0000        .3000000       800.0000        .3000000
      1000.000        .3000000       1300.000        .3000000

PROPERTY TABLEALPX  MAT=    2  NUM. POINTS=   6
SLOC=    1      .6530000-005    .7300000-005    .8350000-005    .8900000-005
               .9600000-005    .9800000-005

NONLINEAR PROPERTIES FOR MATERIAL    2  NUM. POINTS=   48
SLOC=   13    2.0000          .00000          .00000          .00000          .00000          .00000


NONLINEAR PROPERTIES FOR MATERIAL    2  NUM. POINTS=   48
SLOC=   19    100.00          300.00          600.00          800.00          1000.0          1300.0


NONLINEAR PROPERTIES FOR MATERIAL    2  NUM. POINTS=   48
SLOC=   25    36000.          33000.          27000.          23000.          18000.          6000.0


NONLINEAR PROPERTIES FOR MATERIAL    2  NUM. POINTS=   48
SLOC=   31    .20000          .20000          .20000          .20000          .20000          .20000


C*** DEFINE NODES


NODE     1  KCS=  0  X,Y,Z=   .00000      -8.0000        6.4400

NODE     7  KCS=  0  X,Y,Z=   28.500      -8.0000        6.4400

FILL     5 POINTS BETWEEN NODE     1 AND NODE     7
  START WITH NODE     2 AND INCREMENT BY      1

NODE    10  KCS=  0  X,Y,Z=   28.500       8.0000        6.4400

FILL     2 POINTS BETWEEN NODE     7 AND NODE    10
```

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```
  START WITH NODE     8 AND INCREMENT BY      1

NODE    16  KCS=  0  X,Y,Z=   .00000       8.0000        6.4400

FILL     5 POINTS BETWEEN NODE    10 AND NODE    16
  START WITH NODE    11 AND INCREMENT BY      1

GENERATE     3 TOTAL SETS OF NODES WITH INCREMENT     16
  SET IS FROM     1 TO    16 IN STEPS OF     1
  GEOMETRY INCREMENTS ARE  .00000        .00000       -2.0000

NODE    44  KCS=  0  X,Y,Z=   .00000       2.8700        2.4400

NODE    50  KCS=  0  X,Y,Z=   .00000      -2.8700        2.4400

GENERATE     2 TOTAL SETS OF NODES WITH INCREMENT     16
  SET IS FROM    33 TO    50 IN STEPS OF     1
  GEOMETRY INCREMENTS ARE  .00000        .00000       -4.8800

GENERATE     2 TOTAL SETS OF NODES WITH INCREMENT     16
  SET IS FROM    51 TO    66 IN STEPS OF     1
  GEOMETRY INCREMENTS ARE  .00000        .00000       -4.0000

C*** DEFINE ELEMENTS


MATERIAL NUMBER SET TO   2
ELEMENT      1        1        2       17

GENERATE    15 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      1
  SET IS     1 TO     1 IN STEPS OF     1
NUMBER OF ELEMENTS=     15

ELEMENT TYPE SET TO   2

REAL CONSTANT NUMBER=   2

MATERIAL NUMBER SET TO   2
ELEMENT    16        1        2       17
ELEMENT    17       17        2       16
ELEMENT    18       16        2       15
ELEMENT    19        2        3       19

GENERATE     7 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      2
  SET IS    16 TO    19 IN STEPS OF     1
NUMBER OF ELEMENTS=     43
ELEMENT    44       31       15       16
ELEMENT    45       16       32       31
ELEMENT    46       33       17       34
ELEMENT    47       17       18       34
ELEMENT    48       34       18       19
ELEMENT    49       34       19       35

GENERATE     7 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      2
  SET IS    46 TO    49 IN STEPS OF     1
NUMBER OF ELEMENTS=     73
ELEMENT    74       47       31       48
ELEMENT    75       31       32       48
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3308

```
ELEMENT TYPE SET TO  3

REAL CONSTANT NUMBER=  3

MATERIAL NUMBER SET TO  1
ELEMENT    76       33     34     51

GENERATE    17 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      1
  SET IS    76 TO    76 IN STEPS OF     1
NUMBER OF ELEMENTS=    92
ELEMENT    93       50     33     51

ELEMENT TYPE SET TO  4

REAL CONSTANT NUMBER=  4
ELEMENT    94       33     34     51     51
ELEMENT    95       51     34     52     52
ELEMENT    96       34     53     52     52
ELEMENT    97       34     35     53     53

GENERATE     8 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      2
  SET IS    94 TO    97 IN STEPS OF     1
NUMBER OF ELEMENTS=   125
ELEMENT   126       48     50     67     67
ELEMENT   127       50     68     67     67
ELEMENT   128       50     51     68     68
ELEMENT   129       50     33     51     51

ELEMENT TYPE SET TO  3

REAL CONSTANT NUMBER=  6
ELEMENT   130       51     52     70

GENERATE    15 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      1
  SET IS   130 TO   130 IN STEPS OF     1
NUMBER OF ELEMENTS=   144
ELEMENT   145       67     68     69
ELEMENT   146       68     51     69

ELEMENT TYPE SET TO  4

REAL CONSTANT NUMBER=  5
ELEMENT   147       51     70     69     69
ELEMENT   148       51     52     70     70
ELEMENT   149       52     53     70     70
ELEMENT   150       53     71     70     70

GENERATE     7 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      2
  SET IS   147 TO   150 IN STEPS OF     1
NUMBER OF ELEMENTS=   174
ELEMENT   175       65     84     83     83
ELEMENT   176       65     68     84     84

ELEMENT TYPE SET TO  1

REAL CONSTANT NUMBER=  7
ELEMENT   177       69     70     82
```

SARGENT & LUNDY

```
GENERATE    15 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      1
  SET IS   177 TO   177 IN STEPS OF     1
NUMBER OF ELEMENTS=   191

C*** DEFINE CONSTRAINTS

SPECIFIED DISP UX    FROM NODE      1 TO NODE      1 IN STEPS OF     1
 VALUES=  .00000       .00000      ADDITIONAL DOFS=  UY     ROTY  ROTZ

SPECIFIED DISP UX    FROM NODE     16 TO NODE     16 IN STEPS OF     1
 VALUES=  .00000       .00000      ADDITIONAL DOFS=  ROTY  ROTZ

SPECIFIED DISP UX    FROM NODE     17 TO NODE     33 IN STEPS OF    16
 VALUES=  .00000       .00000      ADDITIONAL DOFS=  UY     ROTY  ROTZ

SPECIFIED DISP UX    FROM NODE     32 TO NODE     48 IN STEPS OF    16
 VALUES=  .00000       .00000      ADDITIONAL DOFS=  ROTY  ROTZ

SPECIFIED DISP UX    FROM NODE     51 TO NODE     69 IN STEPS OF    18
 VALUES=  .00000       .00000      ADDITIONAL DOFS=  UY     ROTY  ROTZ

SPECIFIED DISP UX    FROM NODE     68 TO NODE     84 IN STEPS OF    18
 VALUES=  .00000       .00000      ADDITIONAL DOFS=  ROTY  ROTZ

SPECIFIED DISP UZ    FROM NODE     69 TO NODE     84 IN STEPS OF     1
 VALUES=  .00000       .00000      ADDITIONAL DOFS=

SPECIFIED DISP UX    FROM NODE     49 TO NODE     50 IN STEPS OF     1
 VALUES=  .00000       .00000      ADDITIONAL DOFS=  ROTY  ROTZ

SPECIFIED DISP UX    FROM NODE     67 TO NODE     68 IN STEPS OF     1
 VALUES=  .00000       .00000      ADDITIONAL DOFS=  ROTY  ROTZ

C*** DEFINE THERMAL LOADING

STEP BOUNDARY CONDITION KEY=  1

UNIFORM TEMPERATURE=   150.000   [TREF=    70.000]

XTEMP=     -1      0

READ IN TEMPERATURES IN ELEMENT OR NODAL FORMAT

SET NODE     13   TO TEMP=   231.39       FLUEN=   .00000

GENERATE     4 TOTAL SETS OF TEMPERATURES WITH NODE INCREMENT     1
   SET IS FROM    13 TO    13 BY     1
   TEMP. INC=   .00000       FLUEN. INC=   .00000

SET NODE      1   TO TEMP=   1300.0       FLUEN=   .00000

GENERATE     7 TOTAL SETS OF TEMPERATURES WITH NODE INCREMENT     1
   SET IS FROM     1 TO     1 BY     1
   TEMP. INC=   .00000       FLUEN. INC=   .00000
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SARGENT & LUNDY

3308

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SET NODE     10  TO TEMP=  230.87       FLUEN=   .00000

SET NODE     11  TO TEMP=  231.14       FLUEN=   .00000

SET NODE     12  TO TEMP=  237.36       FLUEN=   .00000

SET NODE      8  TO TEMP=  534.09       FLUEN=   .00000

SET NODE      9  TO TEMP=  280.59       FLUEN=   .00000

NITTER=       1  NPRINT=      1  NPOST=       1

ALL PRINT CONTROLS RESET TO      1
 ALL POST DATA FILE CONTROLS RESET TO      1

*** NOTE ***   KRF KEY NOT SET - NO NODAL OR REACTION FORCES
               WILL BE AVAILABLE FOR POSTPROCESSING

DATA CHECKED - NO FATAL ERRORS FOUND
CHECK OUTPUT FOR POSSIBLE WARNING MESSAGES.

*** WARNING ***   NON-LINEAR PROPERTIES WERE INPUT BUT NOT USED   KNL=  0

ANALYSIS DATA WRITTEN ON FILE27 (  1065 LINES)

*** PREPT GLOBAL STATUS ***

TITLE=  HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE
ANALYSIS TYPE=       0
NUMBER OF ELEMENT TYPES=       4
NUMBER OF ELEMENTS=     191
MAXIMUM NODE NUMBER=      84
MAXIMUM LINEAR PROPERTY NUMBER=       2
NUMBER OF NON-LINEAR PROPERTIES=       1
MAXIMUM REAL CONSTANT SET NUMBER=       7
ACTIVE COORDINATE SYSTEM=       0  (CARTESIAN)
NUMBER OF IMPOSED DISPLACEMENTS=      63
NODAL TEMPERATURES STORED

ALL CURRENT PREPT DATA WRITTEN TO FILE16
 FOR POSSIBLE RESUME FROM THIS POINT


***** ROUTINE COMPLETED *****  CP =         11.813

***** INPUT FILE SWITCHED FROM FILE18 TO FILE27
```



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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN 1, 1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-6855

 HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE                    11.8484   1/18/85 CP=      11.868

          *****  NOTICE  *****  THIS IS THE ANSYS GENERAL PURPOSE
          FINITE ELEMENT COMPUTER PROGRAM.  NEITHER SWANSON ANALYSIS
          SYSTEMS, INC. NOR THE CORPORATION SUPPLYING THE COMPUTER
          FACILITIES FOR THIS ANALYSIS ASSUME ANY RESPONSIBILITY FOR
          THE VALIDITY, ACCURACY, OR APPLICABILITY OF ANY RESULTS
          OBTAINED FROM THE ANSYS SYSTEM.  THE USER MUST VERIFY HIS
          OWN RESULTS.

          SWANSON ANALYSIS SYSTEMS,INC. IS ENDEAVORING TO MAKE THE
          ANSYS PROGRAM AS COMPLETE, ACCURATE, AND EASY TO USE AS
          POSSIBLE.  SUGGESTIONS AND COMMENTS ARE WELCOMED.  ANY
          ERRORS ENCOUNTERED IN EITHER THE DOCUMENTATION OR THE
          RESULTS SHOULD BE IMMEDIATELY BROUGHT TO OUR ATTENTION.

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          ***** ANALYSIS OPTIONS *****

                                VALUE

 ANALYSIS TYPE . . . . . .        0
 REFERENCE TEMPERATURE . . .    70.00


          ***** ELEMENT TYPES *****

 TYPE  STIF       DESCRIPTION                    KEY OPTIONS                    NJ   INOTPR
                                              1  2  3    4  5  6    7  8  9


NUMBER OF ELEMENT TYPES=   4


          ***** TABLE OF ELEMENT REAL CONSTANTS *****
  NO.

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NUMBER OF REAL CONSTANT SETS=   7


          ***** ELEMENT DEFINITIONS *****

ELEMENT    NODES                                MAT  TYPE  CLASS          ELEMENT REAL CONSTANTS
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24

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SWITCHED TO FIXED FORMAT INPUT

 INTEGER STORAGE REQUIREMENTS FOR ELEMENT INPUT                    CP=     14.786  TIME= 11.94722
 MEMORY REQUIRED=     2065  MEMORY AVAILABLE= 4002000
 MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE=     2000050

 NUMBER OF ELEMENTS =     191      MAXIMUM NODE NUMBER USED =      84


            ***** NODE DEFINITIONS *****

                          LOCATION                                ROTATION (DEGREES)

  NODE          X              Y              Z            THXY           THYZ           THXZ
              (OR R)       (OR THETA)     (OR PHI)      (OR RT)      (TZ OR TP)     (RZ OR RP)


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SWITCHED TO FIXED FORMAT INPUT

 XMIN=    0000       XMAX=   29.50       YMIN= -8.000       YMAX=   8.000       ZMIN= -5.440       ZMAX=   5.440

 INTEGER STORAGE REQUIREMENTS FOR NODE INPUT                       CP=     15.857  TIME= 11.94750
 MEMORY REQUIRED=     1008  MEMORY AVAILABLE= 4002000
 MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE= 667000


            ***** MATERIAL PROPERTIES *****

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MAXIMUM MATERIAL NUMBER=    2


            ***** MASTER DEGREES OF FREEDOM *****

  NODE        DEGREES OF FREEDOM LIST

NUMBER OF SPECIFIED MASTER D.O.F.=      0
TOTAL NUMBER OF MASTER D.O.F.    =      0

 INTEGER STORAGE REQUIREMENTS FOR MATERIALS, ETC. INPUT            CP=     17.481  TIME= 11.94805
 MEMORY REQUIRED=      596  MEMORY AVAILABLE= 4002000

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25

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1      C      SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-6855

 HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE                  11.9481   1/18/86 CP=      18.202


LOAD STEP NUMBER=     1

         *** LOAD OPTIONS SUMMARY ***

TIME   =    .00000      (TIME AT END OF LOAD STEP)
NITTER=          1      (NUMBER OF ITERATIONS)
TUNIF  =  150.0000      (UNIFORM TEMPERATURE)    (TREF=   70.0000)
KTEMP  =   -1           (USE SPECIFIED NODAL OR ELEMENT TEMPERATURES)

NPRINT=      1          (OVERALL PRINT FREQUENCY)
NPOST  =     1          (OVERALL POST FREQUENCY)

 DISPLACEMENT PRINT FREQUENCIES
  FREQ    NSTRT   NSTOP    NINC
     1        1   88800       1

 ELEMENT PRINT AND POST FREQUENCIES
  TYPE   STIFF   STRESS   FORCE       STRESS   STRESS   FORCE
          NO.    PRINT   PRINT        POST     LEVEL    POST
     1     24       1       1           1        3        1
     2     48       1       1           1        3        1
     3     24       1       1           1        3        1
     4     83       1       1           1        3        1


***** LOAD SUMMARY -      63 DISPLACEMENTS        0 FORCES        0 PRESSURES      *****


 INTEGER STORAGE REQUIREMENTS FOR LOAD DATA INPUT                  CP=     28.215  TIME= 11.95083
 MEMORY REQUIRED=     1210  MEMORY AVAILABLE= 4002000

 RANGE OF ELEMENT MAXIMUM STIFFNESS IN GLOBAL COORDINATES


MAXIMUM=  .957585+007  AT ELEMENT     127.
MINIMUM=  .290878+006  AT ELEMENT     145.

 INTEGER STORAGE REQUIREMENTS FOR ELEMENT FORMULATION              CP=     82.183  TIME= 11.96583
 MEMORY REQUIRED=     1208  MEMORY AVAILABLE= 4002000

  *** ELEMENT STIFFNESS FORMULATION TIMES
 TYPE   NUMBER  STIF  TOTAL CP    AVE CP

    1       30    24      3.777      .126
    2       60    48     18.201      .303
    3       35    24      4.631      .132
    4       66    63     23.276      .353

TIME AT END OF ELEMENT STIFFNESS FORMULATION  CP=      82.193
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3308

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MAXIMUM IN-CORE WAVE FRONT ALLOWED FOR REQUESTED MEMORY SIZE= 1998.

 INTEGER STORAGE REQUIREMENTS FOR WAVE FRONT MATRIX SOLUTION       CP=    120.320  TIME= 11.97667
 MEMORY REQUIRED=    13528  MEMORY AVAILABLE= 4002000

MAXIMUM IN-CORE WAVE FRONT=     108

     MATRIX SOLUTION TIMES
 READ IN ELEMENT STIFFNESSES   CP=           7.150

 NODAL COORD. TRANSFORMATION   CP=            .000
 MATRIX TRIANGULARIZATION      CP=          30.529

TIME AT END OF MATRIX TRIANGULARIZATION  CP=         120.338

 TIME AT START OF BACK SUBSTITUTION   CP=    .0 407      LOAD STEP=    1  ITERATION=     1  CUM. ITER.=     1
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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN 1, 1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304   TWX 510-690-8655

 HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE                    11.8772   1/18/86 CP=     122.559

 ***** DISPLACEMENT SOLUTION *****  TIME =    .00000      LOAD STEP=     1  ITERATION=     1  CUM. ITER. =     1
   NODE        UX              UY              UZ            ROTX            ROTY            ROTZ

     1     .000000         .000000         .212146-001   -.803408-00     .000000         .000000
     2     .182798-001     -.101785-001    .127504-001    .810842-00      -.262448-003    -.478451-003
     3     .315834-001     -.513588-002    .215157-001    -.595402-0      -.285316-003    -.336557-003
     4     .500688-001     -.116608-001    .155853-001     .773000-0       .813857-004     .395749-003
     5     .732584-001      .337632-002    .238519-001    -.138829-001     .105403-002     .168410-002
     6     .103254          .142857-001    .128838-001    -.101380-001     .275398-002     .352912-002
     7     .146380          .314415-001    -.988289-002    .218615-002     .371213-002     .601284-002
     8     .102311          .881883-001    .885998-002     .129690-002    -.887088-002     .775878-002
     9     .821855-001      .818329-001    .450075-002     .193809-003    -.838885-002     .782840-002
    10     .244877-001      .875476-001    .527833-002    -.251083-003     .132181-003     .703110-002
    11     .195444-001      .844983-001    .748582-002     .308502-002     .770131-004     .575961-002
    12     .150480-001      .282209-001    .756760-002     .311870-002    -.279804-004     .452471-002
    13     .109538-001      .940781-002    .781291-002     .417869-002    -.856007-004     .333311-002
    14     .715574-002     -.410716-002    .730937-002     .410575-002    -.819690-004     .218468-002
    15     .356789-002     -.127525-001    .758112-002     .544419-002    -.818835-004     .107648-002
    16     .000000         -.151483-001    .715775-002     .494553-002     .000000         .000000
    17     .000000          .000000        .312783-002     .131183-002     .000000         .000000
    18     .143498-001     -.212519-002    .413817-002     .937420-003    -.851932-004     -.238769-002
    19     .291945-001     -.112682-001    .405105-002    -.678873-003     .883418-004     -.526707-003
    20     .458026-001     -.917989-002    .705201-002    -.838238-003     .725906-003     -.499038-003
    21     .634149-001     -.696228-002    .722998-002     .476755-003     .224314-002     .268362-002
    22     .842784-001      .150194-001    .374428-002     .659244-002     .883658-002     .928830-002
    23     .103837          .520584-001    -.188490-001    .701686-002     .182895-001     .412768-002
    24     .932555-001      .893089-001    .280829-002     .215578-002     .124989-001     .192829-002
    25     .800439-001      .794991-001    .559075-002     .259481-004     .452018-002     .889860-002
    26     .220338-001      .846341-001    .397297-002    -.117185-002     .133634-002     .704803-002
    27     .141478-001      .880390-001    .569717-002     .122685-002     .375500-003     .483417-002
    28     .142776-001      .357071-001    .802377-002     .337782-002     .135200-003     .421225-002
    29     .108422-001      .175868-001    .587859-002     .396068-003     .242167-004     .321335-002
    30     .703857-002      .455507-002    .580027-002     .436810-002    -.155225-004     .195028-002
    31     .350118-002     -.139396-002    .562387-002     .494452-002    -.288545-004     .423370-003
    32     .000000         -.889785-003    .584395-002     .724842-002     .000000         .000000
    33     .000000          .000000        .337290-002     .318015-003     .000000         .000000
    34     .132811-001     -.316483-002    .400699-002    -.210182-003    -.728748-004     -.124148-002
    35     .268571-001     -.101811-001    .405042-002     .182857-002    -.181600-003     -.636188-003
    36     .408088-001     -.970041-002    .710859-002     .240470-002     .487583-003     .127438-002
    37     .543183-001      .721385-003    .622511-002     .594612-002     .154670-002     .457105-002
    38     .657344-001      .317111-001    .435711-002     .854068-002     .403902-002     .657323-002
    39     .778185-001      .633987-001    -.160233-001    .860287-002     .130243-001     .824153-002
    40     .839214-001      .730291-001    .290814-002     .293733-003     .111910-001     .189928-002
    41     .887188-001      .788202-001    .448723-002    -.869489-003     .632154-002     .398289-002
    42     .200041-001      .826515-001    .351252-002    -.136785-002     .826427-003     .462723-002
    43     .170152-001      .807533-001    .481253-002     .187361-002     .351973-003     .356422-002
    44     .136830-001      .423782-001    .502851-002     .338478-002     .188728-003     .342175-002
    45     .102732-001      .258485-001    .484286-002     .421548-002     .751361-004     .300174-002
    46     .685404-002      .131064-001    .480338-002     .391777-002     .343248-004     .202120-002
    47     .342238-002      .711736-002    .483128-002     .309745-002    -.960823-004     .857244-003
    48     .000000          .889810-002    .483548-002     .156811-003     .000000         .000000
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49	.000000	.580354-002	.426783-002	.873632-004	.000000	.000000
50	.000000	.318848-002	.402961-002	-.118985-003	.000000	.000000
51	.000000	.000000	.209560-002	-.135631-003	.000000	.000000

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ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8855

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 11.8772 1/18/86 CP= 122.749

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 1 ITERATION= 1 CUM. ITER.= 1

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	.115797-001	-.358712-004	.234283-002	.152253-002	-.549405-003	-.854208-004
53	.229506-001	.269696-002	.359811-002	.359009-002	-.120812-002	.116453-002
54	.328657-001	.118335-001	.388657-002	.528157-002	-.128123-002	.291881-002
55	.413314-001	.285108-001	.491117-002	.520255-002	-.111444-002	.486838-002
56	.478378-001	.540058-001	.114538-002	.359231-002	-.830893-003	.611155-003
57	.505613-001	.780577-001	-.858782-002	.168952-002	.662625-003	.421458-002
58	.329781-001	.779507-001	.261532-003	.773378-003	.354117-002	.171278-002
59	.264079-001	.807224-001	.239387-002	.180898-003	.214520-002	.158076-002
60	.185630-001	.837113-001	.185023-002	.607740-004	-.137302-003	.218243-002
61	.166022-001	.722467-001	.214847-002	.221764-002	-.718097-005	.279791-002
62	.127676-001	.594360-001	.229028-002	.348091-002	-.109323-003	.287644-002
63	.873532-002	.472886-001	.232951-002	.467389-002	-.107403-003	.256115-002
64	.653495-002	.348152-001	.220959-002	.553181-002	-.121732-003	.270519-002
65	.328905-002	.210252-001	.218037-002	.537428-002	-.310572-003	.271150-002
66	.000000	.803905-002	.208548-002	.158895-002	.000000	.000000
67	.000000	.607591-002	.159383-002	.187739-003	.000000	.000000
68	.000000	.301069-002	.154038-002	-.456504-004	.000000	.000000
69	.000000	.000000	.000000	-.311288-002	.000000	.000000
70	.886010-002	.425007-002	.000000	-.188538-002	-.176838-003	.144582-002
71	.191827-001	.150222-001	.000000	-.145508-003	-.169273-003	.250526-002
72	.273958-001	.297831-001	.000000	.119075-002	-.877273-004	.315885-002
73	.328753-001	.462245-001	.000000	.154305-002	.895469-005	.338897-002
74	.383579-001	.622942-001	.000000	.108782-002	.621777-004	.317308-002
75	.430286-001	.755383-001	.000000	.218174-004	.123578-003	.261270-002
76	.318781-001	.789012-001	.000000	-.120038-004	.138858-003	.172182-002
77	.241208-001	.820738-001	.000000	-.195585-004	-.454653-004	.128036-002
78	.177523-001	.848720-001	.000000	-.101067-004	-.231185-003	.120325-002
79	.150721-001	.785847-001	.000000	.324274-002	-.218851-003	.125284-002
80	.122488-001	.746774-001	.000000	.445157-002	-.219884-003	.120183-002
81	.832575-002	.701831-001	.000000	.670049-002	-.221843-003	.104749-002
82	.629192-002	.666816-001	.000000	.887416-002	-.200053-003	.787735-003
83	.316285-002	.644938-001	.000000	.106009-001	-.130706-003	.430282-003
84	.000000	.637642-001	.000000	.113200-001	.000000	.000000

MAXIMUMS

NODE	7	10	5	5	23	22
VALUE	.146380	.875476-001	.238519-001	-.138629-001	.182895-001	.929830-002

INTEGER STORAGE REQUIREMENTS FOR BACK SUBSTITUTION CP= 122.914 TIME= 11.97722
MEMORY REQUIRED= 2230 MEMORY AVAILABLE= 4002000

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3308

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          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304   TWX 510-690-8655

 HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE                    11.9775   1/18/85 CP=     123.397

  ***** ELEMENT STRESSES *****  TIME =    .000000        LOAD STEP=     1   ITERATION=     1   CUM. ITER. =     1

EL=     1  NODES=     1     2  MAT=  2  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP=1300.00          3-D THIN-WALL BEAM  24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER= -.4844      ,    .4844      AREA=   .4844      J=   .2523-002  IW=   5700-036
 PRINCIPLE M OF I:        IYP=   .1894      IZP=   .1894      THETAP=   .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   1300.00    -.15459+006
        2   1300.00    -.15551+006
        3   1300.00    -.16060+006
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   1300.00    -.15973+006
        2   1300.00    -.15508+006
        3   1300.00    -.15653+006
FORCES ON MEMBER AT NODE     1   75855.3       -76.3749       -110.710       -64.4474       80.1739       -517.442
                             2  -75855.3        76.3749        110.710        64.4474       454.149        141.932

EL=     2  NODES=     2     3  MAT=  2  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP=1300.00          3-D THIN-WALL BEAM  24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER= -.4844      ,    .4844      AREA=   .4844      J=   .2523-002  IW=   5700-036
 PRINCIPLE M OF I:        IYP=   .1894      IZP=   .1894      THETAP=   .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   1300.00    -.15603+006
        2   1300.00    -.15138+006
        3   1300.00    -.15263+006
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   1300.00    -.15041+006
        2   1300.00    -.15474+006
        3   1300.00    -.15154+006
FORCES ON MEMBER AT NODE     2   74039.7       -88.4042       178.322        53.5417       -454.232       -122.402
                             3  -74039.7        88.4042       -178.322       -53.5417       -422.517       -312.252

EL=     3  NODES=     3     4  MAT=  2  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP=1300.00          3-D THIN-WALL BEAM  24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER= -.4844      ,    .4844      AREA=   .4844      J=   .2523-002  IW=   5700-036
 PRINCIPLE M OF I:        IYP=   .1894      IZP=   .1894      THETAP=   .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   1300.00    -.14243+006
        2   1300.00    -.14676+006
        3   1300.00    -.14355+006
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   1300.00    -.14602+006
        2   1300.00    -.14890+006
        3   1300.00    -.13968+006
FORCES ON MEMBER AT NODE     3   70174.7       -80.0949       -68.4173       -48.6452       422.472        312.282
                             4  -70174.7        80.0949        68.4173        48.6452       -86.0867       -706.082

EL=     4  NODES=     4     5  MAT=  2  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP=1300.00          3-D THIN-WALL BEAM  24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER= -.4844      ,    .4844      AREA=   .4844      J=   .2523-002  IW=   5700-036
 PRINCIPLE M OF I:        IYP=   .1894      IZP=   .1894      THETAP=   .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   1300.00    -.12875+006
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SARGENT & LUNDY

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        2   1300.00    -.12982+006
        3   1300.00    -.12255+006
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   1300.00    -.12074+006
        2   1300.00    -.13368+006
        3   1300.00    -.12247+006
FORCES ON MEMBER AT NODE     4   61823.1       -61.8436       239.451        75.9940       85.6029        891.925
                             5  -61823.1        61.8436       -239.451       -75.9940       -1263.10       -1094.81

EL=     5  NODES=     5     6  MAT=  2  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP=1300.00          3-D THIN-WALL BEAM  24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER= -.4844      ,    .4844      AREA=   .4844      J=   .2523-002  IW=   5700-036
 PRINCIPLE M OF I:        IYP=   .1894      IZP=   .1894      THETAP=   .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   1300.00    -95842.
        2   1300.00    -.10878+006
        3   1300.00    -97570.
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   1300.00    -88062.
        2   1300.00    -.10928+006
        3   1300.00    -94296.
FORCES ON MEMBER AT NODE     5   48781.5       -75.3914       -34.2482       -12.5218       1262.88        1084.03
                             6  -48781.6        75.3914        34.2482        12.5218       -1094.58       -1484.70

EL=     6  NODES=     6     7  MAT=  2  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP=1300.00          3-D THIN-WALL BEAM  24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER= -.4844      ,    .4844      AREA=   .4844      J=   .2523-002  IW=   5700-036
 PRINCIPLE M OF I:        IYP=   .1894      IZP=   .1894      THETAP=   .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   1300.00    -50016.
        2   1300.00    -61195.
        3   1300.00    -46234.
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   1300.00    -57914.
        2   1300.00    -60331.
        3   1300.00    -40060.
FORCES ON MEMBER AT NODE     6   26475.9       -105.580       -174.288       -43.8144       1092.85        1482.82
                             7  -26475.9        105.560        174.288        43.8144       -235.835       -1981.63

EL=     7  NODES=     7     8  MAT=  2  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP=  867.05          3-D THIN-WALL BEAM  24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER= -.4844      ,    .4844      AREA=   .4844      J=   .2523-002  IW=   5700-036
 PRINCIPLE M OF I:        IYP=   .1894      IZP=   .1894      THETAP=   .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1    867.05    -38001.
        2    867.05    -40237.
        3    867.05    -19848.
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1    867.05    -26939.
        2    867.05    -39769.
        3    867.05    -32846.
FORCES ON MEMBER AT NODE     7   18871.1       246.804        212.503        53.1878       120.815        1893.08
                             8  -18871.1       -246.804       -212.503       -53.1878       -1254.18       -876.802

EL=     8  NODES=     8     9  MAT=  2  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP=  867.34          3-D THIN-WALL BEAM  24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER= -.4844      ,    .4844      AREA=   .4844      J=   .2523-002  IW=   5700-036
 PRINCIPLE M OF I:        IYP=   .1894      IZP=   .1894      THETAP=   .0000
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SARGENT & LUNDY

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	457.34	-6451.0								
	2	457.34	-19286.								
	3	457.34	-12118.								
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	457.34	-8446.1								
	2	457.34	-15624.								
	3	457.34	-18447.								
FORCES ON MEMBER AT NODE		8	6919.48	201.450	-67.0257	-22.3822	1264.71	700.661				
		9	-6919.48	-201.450	67.0287	22.3823	-807.223	373.740				

EL= 9 NODES= 9 10 MAT= 2 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 255.63 3-D THIN-WALL BEAM 24
CENTROID= .0000 , .0000 SHEAR CENTER= -.4844 , .4844 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	255.63	1744.5								
	2	255.63	-7433.7								
	3	255.63	-11276.								
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	255.63	-2421.5								
	2	255.63	-2436.7								
	3	255.63	-17106.								
FORCES ON MEMBER AT NODE		9	2954.57	198.419	-167.853	-28.5819	887.240	-375.631				
		10	-2954.57	-198.419	167.953	28.5819	-1.48880	1433.87				

EL= 10 NODES= 10 11 MAT= 2 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 230.90 3-D THIN-WALL BEAM 24
CENTROID= .0000 , .0000 SHEAR CENTER= -.4844 , .4844 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	230.90	-247.86								
	2	230.90	109.72								
	3	230.90	-14401.								
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	230.90	1114.8								
	2	230.90	-484.11								
	3	230.90	-14576.								
FORCES ON MEMBER AT NODE		10	1747.29	-8.33075	38.8981	18.8475	-34.9862	-1418.51				
		11	-1747.29	8.33075	-38.8981	-18.8475	-156.283	1377.55				

EL= 11 NODES= 11 12 MAT= 2 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 234.26 3-D THIN-WALL BEAM 24
CENTROID= .0000 , .0000 SHEAR CENTER= -.4844 , .4844 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	234.26	-2204.2								
	2	234.26	-3803.1								
	3	234.26	-17817.								
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	234.26	-2947.1								
	2	234.26	-3709.2								
	3	234.26	-17362.								
FORCES ON MEMBER AT NODE		11	3357.68	-9.16805	-16.6394	.138985	156.212	-1378.78				
		12	-3357.68	9.16805	16.6394	-.138985	-74.5014	1334.71				

EL= 12 NODES= 12 13 MAT= 2 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 234.38 3-D THIN-WALL BEAM 24

SARGENT & LUNDY

CENTROID= .0000 , .0000 SHEAR CENTER= -.4844 , .4844 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	234.38	-5312.3								
	2	234.38	-6075.1								
	3	234.38	-18712.								
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	234.38	-5806.9								
	2	234.38	-6139.5								
	3	234.38	-19289.								
FORCES ON MEMBER AT NODE		12	4501.86	-8.89430	-4.57715	5.86243	74.5891	-1333.15				
		13	-4501.86	8.89430	4.57715	-5.86243	-62.0848	1285.68				

EL= 13 NODES= 13 14 MAT= 2 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 231.39 3-D THIN-WALL BEAM 24
CENTROID= .0000 , .0000 SHEAR CENTER= -.4844 , .4844 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	231.39	-6805.6								
	2	231.39	-7438.4								
	3	231.39	-20590.								
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	231.39	-7712.8								
	2	231.39	-7323.8								
	3	231.39	-20012.								
FORCES ON MEMBER AT NODE		13	5131.00	-9.21813	-18.3275	-.388184	62.0780	-1285.68				
		14	-5131.00	9.21813	18.3276	.388184	38.0318	1240.33				

EL= 14 NODES= 14 15 MAT= 2 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 231.39 3-D THIN-WALL BEAM 24
CENTROID= .0000 , .0000 SHEAR CENTER= -.4844 , .4844 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	231.39	-8483.1								
	2	231.39	-8074.3								
	3	231.39	-20784.								
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	231.39	-8510.8								
	2	231.39	-8222.4								
	3	231.39	-20440.								
FORCES ON MEMBER AT NODE		14	5497.13	-9.78213	1.99444	7.51589	-38.0027	-1242.47				
		15	-5497.13	9.78213	-1.99444	-7.51589	28.1967	1194.38				

EL= 15 NODES= 15 16 MAT= 2 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 231.39 3-D THIN-WALL BEAM 24
CENTROID= .0000 , .0000 SHEAR CENTER= -.4844 , .4844 AREA= .4844 J= .2523-002 IW= .5700-038
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	231.39	-8855.6								
	2	231.39	-8567.2								
	3	231.39	-20798.								
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	231.39	-8528.1								
	2	231.39	-8425.5								
	3	231.39	-20408.								
FORCES ON MEMBER AT NODE		15	5865.74	-4.83581	-16.2089	-2.80862	-28.1818	-1195.58				
		16	-5865.74	4.83581	16.2089	2.80862	107.885	1171.38				

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EL=    16  NODES=     1     2    17      MAT=   2  AREA=   4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=   1.64      -8.00        5.77        TEMPS=  516.7  516.7  516.7  516.7  516.7
TOP SX,SY,SXY,SZ= -.11011+006  -12445.        13548.        .00000      SIG1,SIG2,SIG3=  -.47753-013  -10602.       -.11156+006
     S.I.=   .11156+006  SIGE=   .10705+006
MID SX,SY,SXY,SZ= -.10859+006  -6618.1        14788.        .00000      SIG1,SIG2,SIG3=  -.14128-012  -4517.0       -.11069+006
     S.I.=   .11069+006  SIGE=   .10850+006
BOT SX,SY,SXY,SZ= -.10707+006  -789.85        16027.        .00000      SIG1,SIG2,SIG3=   1574.8        .87219-006   -.10943+006
     S.I.=   .11101+006  SIGE=   .11023+006

EL=    17  NODES=    17     2    18      MAT=   2  AREA=   4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=   3.28      -8.00        5.11        TEMPS=  533.3  533.3  533.3  533.3  533.3
TOP SX,SY,SXY,SZ= -9412.1        3422.5       -15575.       .00000      SIG1,SIG2,SIG3=   13850.        .26471-006   -19840.
     S.I.=   33690.       SIGE=   29330.
MID SX,SY,SXY,SZ= -11207.        -262.09      -15073.       .00000      SIG1,SIG2,SIG3=   10288.        .25194-006   -21778.
     S.I.=   32066.       SIGE=   28358.
BOT SX,SY,SXY,SZ= -13003.        -3986.8      -14572.       .00000      SIG1,SIG2,SIG3=   6758.8        .23970-006   -23746.
     S.I.=   30507.       SIGE=   27752.

EL=    18  NODES=    18     2    19      MAT=   2  AREA=   4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=   6.56      -8.00        5.11        TEMPS=  533.3  533.3  533.3  533.3  533.3
TOP SX,SY,SXY,SZ=  12401.        -16485.       4155.8        .00000      SIG1,SIG2,SIG3=   12888.        .23602-006   -17052.
     S.I.=   30039.       SIGE=   26094.
MID SX,SY,SXY,SZ=  9587.4        -17183.       4853.1        .00000      SIG1,SIG2,SIG3=   10373.        .22289-006   -17869.
     S.I.=   28342.       SIGE=   24837.
BOT SX,SY,SXY,SZ=  6773.3        -17901.       5150.4        .00000      SIG1,SIG2,SIG3=   7805.3        .21005-006   -18933.
     S.I.=   28738.       SIGE=   23815.

EL=    19  NODES=     2     3    19      MAT=   2  AREA=   4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=   8.19      -8.00        5.77        TEMPS=  516.7  516.7  516.7  516.7  516.7
TOP SX,SY,SXY,SZ= -.10621+006  -10288.       -24974.       .00000      SIG1,SIG2,SIG3=  -.27377-012  -4118.2       -.11138+006
     S.I.=   .11138+006  SIGE=   .10938+006
MID SX,SY,SXY,SZ= -.10430+006  -7809.9        -26272.       .00000      SIG1,SIG2,SIG3=   .54277-012  -1120.1       -.11099+006
     S.I.=   .11099+006  SIGE=   .11043+006
BOT SX,SY,SXY,SZ= -.10238+006  -5332.1        -27570.       .00000      SIG1,SIG2,SIG3=   1888.8        .88384-006   -.11060+006
     S.I.=   .11249+006  SIGE=   .11156+006

EL=    20  NODES=     3     4    19      MAT=   2  AREA=   4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=   11.5      -8.00        5.77        TEMPS=  516.7  516.7  516.7  516.7  516.7
TOP SX,SY,SXY,SZ= -94443.        -7070.1       -340.00       .00000      SIG1,SIG2,SIG3=  -.16383-012  -7068.8       -84444.
     S.I.=   94444.       SIGE=   91115.
MID SX,SY,SXY,SZ= -93417.        -4545.1       799.87        .00000      SIG1,SIG2,SIG3=  -.20256-012  -4534.9       -93424.
     S.I.=   93424.       SIGE=   91239.
BOT SX,SY,SXY,SZ= -92391.        -2022.1       1939.7        .00000      SIG1,SIG2,SIG3=   .20034-012  -1860.5       -92432.
     S.I.=   92432.       SIGE=   91456.

EL=    21  NODES=    18     4    20      MAT=   2  AREA=   4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=   13.1      -8.00        5.11        TEMPS=  533.3  533.3  533.3  533.3  533.3
TOP SX,SY,SXY,SZ=  16572.        -9444.9       -28391.       .00000      SIG1,SIG2,SIG3=   34782.        .49074-006   -27885.
     S.I.=   62458.       SIGE=   54207.
MID SX,SY,SXY,SZ=  15314.        -12129.       -27830.       .00000      SIG1,SIG2,SIG3=   32711.        .48801-006   -29528.
     S.I.=   62237.       SIGE=   53923.
BOT SX,SY,SXY,SZ=  14057.        -14813.       -27470.       .00000      SIG1,SIG2,SIG3=   30653.        .48764-006   -31409.
     S.I.=   62063.       SIGE=   53749.

EL=    22  NODES=    20     4    21      MAT=   2  AREA=   4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=   16.4      -8.00        5.11        TEMPS=  533.3  533.3  533.3  533.3  533.3
TOP SX,SY,SXY,SZ=  15871.        829.23       -23594.       .00000      SIG1,SIG2,SIG3=   33179.        .38839-006   -16378.
     S.I.=   48558.       SIGE=   43733.
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SARGENT & LUNDY


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MID SX,SY,SXY,SZ=  13812.        413.11       -23603.       .00000      SIG1,SIG2,SIG3=   31648.        .38555-006   -17423.
     S.I.=   49070.       SIGE=   43087.
BOT SX,SY,SXY,SZ=  11852.        -3.0181      -23612.       .00000      SIG1,SIG2,SIG3=   30145.        .38217-006   -18498.
     S.I.=   48840.       SIGE=   42524.

EL=    23  NODES=     4     5    21      MAT=   2  AREA=   4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=   18.0      -8.00        5.77        TEMPS=  516.7  516.7  516.7  516.7  516.7
TOP SX,SY,SXY,SZ= -76837.        -19250.       -55185.       .00000      SIG1,SIG2,SIG3=   14184.        .87787-006   -.11027+006
     S.I.=   .12446+006  SIGE=   .11800+006
MID SX,SY,SXY,SZ= -74483.        -12744.       -58723.       .00000      SIG1,SIG2,SIG3=   20986.        .10108-005   -.10818+006
     S.I.=   .12916+006  SIGE=   .12006+006
BOT SX,SY,SXY,SZ= -72128.        -6237.6       -58281.       .00000      SIG1,SIG2,SIG3=   27785.        .10520-005   -.10813+006
     S.I.=   .13390+006  SIGE=   .12240+006

EL=    24  NODES=     5     6    21      MAT=   2  AREA=   4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=   21.3      -8.00        5.77        TEMPS=  516.7  516.7  516.7  516.7  516.7
TOP SX,SY,SXY,SZ= -42911.        -9939.5       -23115.       .00000      SIG1,SIG2,SIG3=   1886.8        .44918-006   -54817.
     S.I.=   56784.       SIGE=   55626.
MID SX,SY,SXY,SZ= -40531.        -2558.4       -22769.       .00000      SIG1,SIG2,SIG3=   8101.7        .46588-006   -51191.
     S.I.=   59293.       SIGE=   55886.
BOT SX,SY,SXY,SZ= -38152.        4822.7        -22423.       .00000      SIG1,SIG2,SIG3=   14392.        .48803-006   -47721.
     S.I.=   62112.       SIGE=   56313.

EL=    25  NODES=    21     6    22      MAT=   2  AREA=   4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=   23.8      -8.00        5.11        TEMPS=  533.3  533.3  533.3  533.3  533.3
TOP SX,SY,SXY,SZ=  81648.        -47303.       -68752.       .00000      SIG1,SIG2,SIG3=   .10998+006   .14584-005   -75634.
     S.I.=   .18561+006  SIGE=   .16186+006
MID SX,SY,SXY,SZ=  85108.        -39068.       -67068.       .00000      SIG1,SIG2,SIG3=   .11441+006   .14382-005   -68372.
     S.I.=   .18279+006  SIGE=   .15998+006
BOT SX,SY,SXY,SZ=  88569.        -30830.       -67380.       .00000      SIG1,SIG2,SIG3=   .11869+006   .14148-005   -61153.
     S.I.=   .18005+006  SIGE=   .15857+006

EL=    26  NODES=    22     6    23      MAT=   2  AREA=   4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=   26.2      -8.00        5.11        TEMPS=  533.3  533.3  533.3  533.3  533.3
TOP SX,SY,SXY,SZ=  18663.        11814.        52081.        .00000      SIG1,SIG2,SIG3=   67412.        .81988-006   -38936.
     S.I.=   .10435+006  SIGE=   81844.
MID SX,SY,SXY,SZ=  23018.        12756.        50822.        .00000      SIG1,SIG2,SIG3=   69065.        .80423-006   -33271.
     S.I.=   .10238+006  SIGE=   80433.
BOT SX,SY,SXY,SZ=  27375.        13776.        49783.        .00000      SIG1,SIG2,SIG3=   70820.        .78856-006   -29870.
     S.I.=   .10049+006  SIGE=   79426.

EL=    27  NODES=     6     7    23      MAT=   2  AREA=   4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=   27.9      -8.00        5.77        TEMPS=  516.7  516.7  516.7  516.7  516.7
TOP SX,SY,SXY,SZ= -3473.0        -79015.       -.14490+006   .00000      SIG1,SIG2,SIG3=   .10849+006   .23530-005   -.19088+006
     S.I.=   .29948+006  SIGE=   .26261+006
MID SX,SY,SXY,SZ= -2469.6        -74509.       -.14362+006   .00000      SIG1,SIG2,SIG3=   .10958+006   .23288-005   -.18858+006
     S.I.=   .29814+006  SIGE=   .25934+006
BOT SX,SY,SXY,SZ= -1466.6        -70003.       -.14235+006   .00000      SIG1,SIG2,SIG3=   .11068+006   .23008-005   -.18215+006
     S.I.=   .29263+006  SIGE=   .25611+006

EL=    28  NODES=     7     8    23      MAT=   2  AREA=   5.33       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=   29.6      -8.22        5.77        TEMPS=  594.7  594.7  594.7  594.7  594.7
TOP SX,SY,SXY,SZ=  33283.        -19881.       73263.        .00000      SIG1,SIG2,SIG3=   84710.        .12242-005   -71088.
     S.I.=   .15581+006  SIGE=   .13511+006
MID SX,SY,SXY,SZ=  35839.        -9744.1       70707.        .00000      SIG1,SIG2,SIG3=   87207.        .11685-005   -61311.
     S.I.=   .14852+006  SIGE=   .12927+006
BOT SX,SY,SXY,SZ=  37986.        192.85        68151.        .00000      SIG1,SIG2,SIG3=   89812.        .11114-005   -51833.
     S.I.=   .14148+006  SIGE=   .12387+006
```

SARGENT & LUNDY

EL= 29 NODES= 23 8 24 MAT= 2 AREA= 5.33 FBOT,FMID,FTOP= .000 .000 .000 PL TRI SHELL 48
P1,P2= .0000 .0000 XC,YC,ZC= 28.5 -4.44 5.11 TEMPS= 311.4 311.4 311.4 311.4 311.4
TOP SX,SY,SXY,SZ= 65088. -6932.2 -17669. .00000 SIG1,SIG2,SIG3= 69189. .63032-006 -11033.
S.I.= 80222. SIGE= 75314.
MID SX,SY,SXY,SZ= 69351. -853.62 -20559. .00000 SIG1,SIG2,SIG3= 74928. .63825-006 -6430.9
S.I.= 81359. SIGE= 78342.
BOT SX,SY,SXY,SZ= 73614. 5224.9 -23448. .00000 SIG1,SIG2,SIG3= 80882. .65155-006 -2042.4
S.I.= 82824. SIGE= 81922.

EL= 30 NODES= 24 8 25 MAT= 2 AREA= 5.33 FBOT,FMID,FTOP= .000 .000 .000 PL TRI SHELL 48
P1,P2= .0000 .0000 XC,YC,ZC= 29.5 -.889 5.11 TEMPS= 311.4 311.4 311.4 311.4 311.4
TOP SX,SY,SXY,SZ= -546.29 2041.2 -1486.3 .00000 SIG1,SIG2,SIG3= 3495.2 .35108-007 -1100.3
S.I.= 4595.5 SIGE= 4156.1
MID SX,SY,SXY,SZ= 9344.6 7261.2 127.67 .00000 SIG1,SIG2,SIG3= 9352.6 7253.4 -.82465-008
S.I.= 9352.6 SIGE= 8499.7
BOT SX,SY,SXY,SZ= 19236. 11581. 1751.7 .00000 SIG1,SIG2,SIG3= 19618. 11199. -.33072-007
S.I.= 19618. SIGE= 17048.

EL= 31 NODES= 8 9 25 MAT= 2 AREA= 5.33 FBOT,FMID,FTOP= .000 .000 .000 PL TRI SHELL 48
P1,P2= .0000 .0000 XC,YC,ZC= 29.5 .889 5.77 TEMPS= 354.9 354.9 354.9 354.9 354.9
TOP SX,SY,SXY,SZ= 3785.3 -24271. -15173. .00000 SIG1,SIG2,SIG3= 10422. .32473-006 -30907.
S.I.= 41329. SIGE= 37228.
MID SX,SY,SXY,SZ= 5613.2 -17346. -14807. .00000 SIG1,SIG2,SIG3= 12869. .29442-006 -24602.
S.I.= 37471. SIGE= 32977.
BOT SX,SY,SXY,SZ= 7441.2 -10421. -14440. .00000 SIG1,SIG2,SIG3= 15469. .26881-006 -18459.
S.I.= 33958. SIGE= 29445.

EL= 32 NODES= 9 10 25 MAT= 2 AREA= 5.33 FBOT,FMID,FTOP= .000 .000 .000 PL TRI SHELL 48
P1,P2= .0000 .0000 XC,YC,ZC= 29.5 4.44 5.77 TEMPS= 220.4 220.4 220.4 220.4 220.4
TOP SX,SY,SXY,SZ= 4090.0 7607.9 -5262.2 .00000 SIG1,SIG2,SIG3= 11397. 300.52 -.43595-007
S.I.= 11397. SIGE= 11250.
MID SX,SY,SXY,SZ= 5588.5 13195. -5088.1 .00000 SIG1,SIG2,SIG3= 15744. 3038.2 -.49911-007
S.I.= 15744. SIGE= 14465.
BOT SX,SY,SXY,SZ= 7087.1 18781. -4914.0 .00000 SIG1,SIG2,SIG3= 20572. 5296.4 -.60011-007
S.I.= 20572. SIGE= 18501.

EL= 33 NODES= 25 10 26 MAT= 2 AREA= 5.33 FBOT,FMID,FTOP= .000 .000 .000 PL TRI SHELL 48
P1,P2= .0000 .0000 XC,YC,ZC= 29.5 6.22 5.11 TEMPS= 176.9 176.9 176.9 176.9 176.9
TOP SX,SY,SXY,SZ= 13530. -8879.9 -6895.4 .00000 SIG1,SIG2,SIG3= 15475. 20742-006 -10924.
S.I.= 26399. SIGE= 22975.
MID SX,SY,SXY,SZ= 14175. -7742.4 -7353.2 .00000 SIG1,SIG2,SIG3= 16414. 20738-006 -9960.7
S.I.= 26394. SIGE= 23083.
BOT SX,SY,SXY,SZ= 14820. -6604.8 -7811.0 .00000 SIG1,SIG2,SIG3= 17375. 20770-006 -9059.8
S.I.= 26435. SIGE= 23268.

EL= 34 NODES= 26 10 27 MAT= 2 AREA= 4.92 FBOT,FMID,FTOP= .000 .000 .000 PL TRI SHELL 48
P1,P2= .0000 .0000 XC,YC,ZC= 27.8 8.00 5.11 TEMPS= 176.9 176.9 176.9 176.9 176.9
TOP SX,SY,SXY,SZ= -2504.6 1392.2 -10112. .00000 SIG1,SIG2,SIG3= 9741.7 .16182-006 -10854.
S.I.= 20596. SIGE= 17845.
MID SX,SY,SXY,SZ= -1839.0 1192.2 -9684.1 .00000 SIG1,SIG2,SIG3= 9478.6 .15403-006 -10125.
S.I.= 19604. SIGE= 16981.
BOT SX,SY,SXY,SZ= -1173.3 992.17 -9256.4 .00000 SIG1,SIG2,SIG3= 9226.9 .14645-006 -9410.0
S.I.= 18639. SIGE= 16142.

EL= 35 NODES= 10 11 27 MAT= 2 AREA= 4.92 FBOT,FMID,FTOP= .000 .000 .000 PL TRI SHELL 48
P1,P2= .0000 .0000 XC,YC,ZC= 26.2 8.00 5.77 TEMPS= 203.9 203.9 203.9 203.9 203.9
TOP SX,SY,SXY,SZ= 1976.9 -1898.6 3265.3 .00000 SIG1,SIG2,SIG3= 3838.3 .59878-007 -3757.1

SARGENT & LUNDY

S.I.= 7595.4 SIGE= 6578.0
MID SX,SY,SXY,SZ= 2109.0 -339.89 2748.0 .00000 SIG1,SIG2,SIG3= 3893.9 .47280-007 -2124.8
S.I.= 6018.7 SIGE= 5286.9
BOT SX,SY,SXY,SZ= 2238.2 1218.6 2232.7 .00000 SIG1,SIG2,SIG3= 4016.5 .35888-007 -561.74
S.I.= 4580.3 SIGE= 4326.8

EL= 36 NODES= 11 12 27 MAT= 2 AREA= 4.92 FBOT,FMID,FTOP= .000 .000 .000 PL TRI SHELL 48
P1,P2= .0000 .0000 XC,YC,ZC= 22.9 8.00 5.77 TEMPS= 206.2 206.2 206.2 206.2 206.2
TOP SX,SY,SXY,SZ= -1402.8 -2609.1 7696.5 .00000 SIG1,SIG2,SIG3= 5714.3 .12132-006 -8726.0
S.I.= 15440. SIGE= 13521.
MID SX,SY,SXY,SZ= -1432.1 -1878.1 7460.9 .00000 SIG1,SIG2,SIG3= 5908.6 .11729-006 -8119.8
S.I.= 14928. SIGE= 13034.
BOT SX,SY,SXY,SZ= -1461.5 -1149.2 7225.2 .00000 SIG1,SIG2,SIG3= 5921.6 .11367-006 -6537.2
S.I.= 14454. SIGE= 12585.

EL= 37 NODES= 27 12 28 MAT= 2 AREA= 4.92 FBOT,FMID,FTOP= .000 .000 .000 PL TRI SHELL 48
P1,P2= .0000 .0000 XC,YC,ZC= 21.3 8.00 5.11 TEMPS= 179.1 179.1 179.1 179.1 179.1
TOP SX,SY,SXY,SZ= -1072.9 3469.8 2266.6 .00000 SIG1,SIG2,SIG3= 4407.2 .50424-007 -2010.4
S.I.= 8417.5 SIGE= 7685.6
MID SX,SY,SXY,SZ= -1021.4 3362.9 2009.8 .00000 SIG1,SIG2,SIG3= 4144.8 .46734-007 -1803.2
S.I.= 5948.0 SIGE= 5282.5
BOT SX,SY,SXY,SZ= -969.82 3255.1 1753.0 .00000 SIG1,SIG2,SIG3= 3884.8 .43143-007 -1602.3
S.I.= 5490.9 SIGE= 4880.7

EL= 38 NODES= 28 12 29 MAT= 2 AREA= 4.92 FBOT,FMID,FTOP= .000 .000 .000 PL TRI SHELL 48
P1,P2= .0000 .0000 XC,YC,ZC= 18.0 8.00 5.11 TEMPS= 179.1 179.1 179.1 179.1 179.1
TOP SX,SY,SXY,SZ= 1309.1 1004.2 -4169.1 .00000 SIG1,SIG2,SIG3= 5328.8 .65559-007 -3015.3
S.I.= 8343.8 SIGE= 7318.0
MID SX,SY,SXY,SZ= 1270.5 780.47 -4033.9 .00000 SIG1,SIG2,SIG3= 5065.8 .63506-007 -3015.8
S.I.= 8082.6 SIGE= 7074.4
BOT SX,SY,SXY,SZ= 1231.9 556.70 -3898.6 .00000 SIG1,SIG2,SIG3= 4807.5 .61483-007 -3018.5
S.I.= 7826.4 SIGE= 6836.8

EL= 39 NODES= 12 13 29 MAT= 2 AREA= 4.92 FBOT,FMID,FTOP= .000 .000 .000 PL TRI SHELL 48
P1,P2= .0000 .0000 XC,YC,ZC= 16.4 8.00 5.77 TEMPS= 206.3 206.3 206.3 206.3 206.3
TOP SX,SY,SXY,SZ= -3103.4 -388.11 1333.5 .00000 SIG1,SIG2,SIG3= 157.23 .29904-007 -3648.7
S.I.= 3806.0 SIGE= 3729.8
MID SX,SY,SXY,SZ= -3333.8 -351.18 1211.0 .00000 SIG1,SIG2,SIG3= 78.545 .30188-007 -3783.6
S.I.= 3842.2 SIGE= 3403.5
BOT SX,SY,SXY,SZ= -3564.4 -314.25 1088.4 .00000 SIG1,SIG2,SIG3= 16.581 .30738-007 -3895.2
S.I.= 3911.8 SIGE= 3903.6

EL= 40 NODES= 13 14 28 MAT= 2 AREA= 4.92 FBOT,FMID,FTOP= .000 .000 .000 PL TRI SHELL 48
P1,P2= .0000 .0000 XC,YC,ZC= 13.1 8.00 5.77 TEMPS= 204.3 204.3 204.3 204.3 204.3
TOP SX,SY,SXY,SZ= -4642.4 -423.91 2837.3 .00000 SIG1,SIG2,SIG3= 1002.2 .55556-007 -6088.5
S.I.= 7070.8 SIGE= 6825.7
MID SX,SY,SXY,SZ= -4877.2 -387.95 2843.9 .00000 SIG1,SIG2,SIG3= 800.44 .55833-007 -6255.5
S.I.= 7246.0 SIGE= 6805.0
BOT SX,SY,SXY,SZ= -5111.8 -351.98 2850.5 .00000 SIG1,SIG2,SIG3= 881.53 .58355-007 -6445.4
S.I.= 7426.5 SIGE= 6888.1

EL= 41 NODES= 29 14 30 MAT= 2 AREA= 4.92 FBOT,FMID,FTOP= .000 .000 .000 PL TRI SHELL 48
P1,P2= .0000 .0000 XC,YC,ZC= 11.5 8.00 5.11 TEMPS= 177.1 177.1 177.1 177.1 177.1
TOP SX,SY,SXY,SZ= -100.45 1706.0 688.62 .00000 SIG1,SIG2,SIG3= 1937.3 .17828-007 -331.80
S.I.= 2269.1 SIGE= 2122.8
MID SX,SY,SXY,SZ= -391.09 1397.7 571.89 .00000 SIG1,SIG2,SIG3= 1584.8 .18883-007 -588.30
S.I.= 2123.2 SIGE= 1906.4
BOT SX,SY,SXY,SZ= -681.74 1089.5 457.15 .00000 SIG1,SIG2,SIG3= 1200.5 .15881-007 -782.77

SARGENT & LUNDY

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    S.I.=  1993.3        SIGE=  1736.2

EL=    42  NODES=    30    14    31      MAT=   2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=   .0000         .0000       XC,YC,ZC=  8.19        8.00        5.11       TEMPS=  177.1   177.1   177.1   177.1   177.1
TOP SX,SY,SXY,SZ=  905.86        278.42       -1338.3         .00000      SIG1,SIG2,SIG3=  1966.0         .21804-007  -783.60
    S.I.=  2749.6        SIGE=  2453.5
MID SX,SY,SXY,SZ=  621.16        -149.21      -1258.8         .00000      SIG1,SIG2,SIG3=  1552.3         .20686-007  -1080.4
    S.I.=  2632.8        SIGE=  2292.2
BOT SX,SY,SXY,SZ=  336.38        -574.85      -1179.3         .00000      SIG1,SIG2,SIG3=  1145.0         .19886-007  -1383.4
    S.I.=  2528.4        SIGE=  2192.9

EL=    43  NODES=    14    15    31      MAT=   2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=   .0000         .0000       XC,YC,ZC=  6.56        8.00        5.77       TEMPS=  204.3   204.3   204.3   204.3   204.3
TOP SX,SY,SXY,SZ= -5501.5        -642.28       93.716          .00000      SIG1,SIG2,SIG3=  -.85435-014  -640.47       -5503.3
    S.I.=  5503.3        SIGE=  5212.6
MID SX,SY,SXY,SZ= -5611.8        -306.89      -241.40          .00000      SIG1,SIG2,SIG3=   .12169-013  -297.72       -5622.7
    S.I.=  5622.7        SIGE=  5479.9
BOT SX,SY,SXY,SZ= -5722.1         24.907      -576.52          .00000      SIG1,SIG2,SIG3=   62.171         .46055-007  -5779.3
    S.I.=  5861.5        SIGE=  5820.9

EL=    44  NODES=    31    15    16      MAT=   2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=   .0000         .0000       XC,YC,ZC=  3.28        8.00        5.77       TEMPS=  204.3   204.3   204.3   204.3   204.3
TOP SX,SY,SXY,SZ= -173.16        -5756.1      -1340.2          .00000      SIG1,SIG2,SIG3=  129.84         .48957-007  -6101.1
    S.I.=  6230.9        SIGE=  6187.0
MID SX,SY,SXY,SZ= -423.82        -5895.6      -1315.7          .00000      SIG1,SIG2,SIG3=  -.26002-014  -128.78       -6290.8
    S.I.=  6290.6        SIGE=  6227.2
BOT SX,SY,SXY,SZ= -674.49        -6193.0      -1291.1          .00000      SIG1,SIG2,SIG3=   .10743-013  -387.35       -6480.2
    S.I.=  6480.2        SIGE=  6285.4

EL=    45  NODES=    16    32    31      MAT=   2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=   .0000         .0000       XC,YC,ZC=  1.64        8.00        5.11       TEMPS=  177.1   177.1   177.1   177.1   177.1
TOP SX,SY,SXY,SZ=  1808.1         225.88      -350.25          .00000      SIG1,SIG2,SIG3=  1882.2         151.91        -.67875-008
    S.I.=  1882.2        SIGE=  1811.0
MID SX,SY,SXY,SZ=  823.45        -386.48       45.137          .00000      SIG1,SIG2,SIG3=  825.51         .78103-008  -388.53
    S.I.=  994.04        SIGE=  870.60
BOT SX,SY,SXY,SZ= -561.21        -958.93       440.53          .00000      SIG1,SIG2,SIG3=  -.16635-014  -278.74       -1243.4
    S.I.=  1243.4        SIGE=  1130.7

EL=    46  NODES=    33    17    34      MAT=   2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=   .0000         .0000       XC,YC,ZC=  1.64       -8.00        3.11       TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  47.001         62814.       1470.5          .00000      SIG1,SIG2,SIG3=  62849.         12.459        -.24810-008
    S.I.=  62849.        SIGE=  62643.
MID SX,SY,SXY,SZ= -398.85         62125.       1428.8          .00000      SIG1,SIG2,SIG3=  62158.         .48176-006  -429.34
    S.I.=  62587.        SIGE=  62373.
BOT SX,SY,SXY,SZ= -840.31         61636.       1389.1          .00000      SIG1,SIG2,SIG3=  61866.         .48137-006  -871.18
    S.I.=  62536.        SIGE=  62107.

EL=    47  NODES=    17    18    34      MAT=   2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=   .0000         .0000       XC,YC,ZC=  3.28       -8.00        3.77       TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  71460.         8013.4       -8209.3          .00000      SIG1,SIG2,SIG3=  72505.         6868.6        -.25748-006
    S.I.=  72505.        SIGE=  69284.
MID SX,SY,SXY,SZ=  70930.         7682.0       -8314.4          .00000      SIG1,SIG2,SIG3=  72005.         6807.2        -.25892-006
    S.I.=  72005.        SIGE=  68939.
BOT SX,SY,SXY,SZ=  70401.         7350.5       -8419.4          .00000      SIG1,SIG2,SIG3=  71506.         6245.8        -.25638-006
    S.I.=  71506.        SIGE=  68597.

EL=    48  NODES=    34    18    19      MAT=   2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=   .0000         .0000       XC,YC,ZC=  6.56       -8.00        3.77       TEMPS=  150.0   150.0   150.0   150.0   150.0
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TOP SX,SY,SXY,SZ=  7887.6         73581.       8145.4          .00000      SIG1,SIG2,SIG3=  74151.         7327.6        -.26252-006
    S.I.=  74151.        SIGE=  70772.
MID SX,SY,SXY,SZ=  8639.3         74121.       8235.2          .00000      SIG1,SIG2,SIG3=  74837.         8123.3        -.26130-006
    S.I.=  74837.        SIGE=  70925.
BOT SX,SY,SXY,SZ=  9380.9         74661.       8325.1          .00000      SIG1,SIG2,SIG3=  75126.         8918.6        -.26011-006
    S.I.=  75126.        SIGE=  71088.

EL=    49  NODES=    34    19    35      MAT=   2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=   .0000         .0000       XC,YC,ZC=  8.19       -8.00        3.11       TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  85563.         3523.4       11983.          .00000      SIG1,SIG2,SIG3=  87801.         1256.6        -.28131-006
    S.I.=  87801.        SIGE=  87167.
MID SX,SY,SXY,SZ=  85859.         3733.3       12050.          .00000      SIG1,SIG2,SIG3=  88114.         1477.8        -.28179-006
    S.I.=  88114.        SIGE=  87387.
BOT SX,SY,SXY,SZ=  86155.         3943.2       12107.          .00000      SIG1,SIG2,SIG3=  88428.         1670.0        -.28226-006
    S.I.=  88428.        SIGE=  87808.

EL=    50  NODES=    35    19    36      MAT=   2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=   .0000         .0000       XC,YC,ZC=  11.5       -8.00        3.11       TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  2820.2         68721.       19821.          .00000      SIG1,SIG2,SIG3=  72355.         .59218-006  -3013.7
    S.I.=  75369.        SIGE=  73908.
MID SX,SY,SXY,SZ=  4829.3         67741.       19853.          .00000      SIG1,SIG2,SIG3=  73482.         .58452-006  -811.88
    S.I.=  74384.        SIGE=  73942.
BOT SX,SY,SXY,SZ=  7038.4         66761.       19884.          .00000      SIG1,SIG2,SIG3=  74812.         1187.1        -.28845-006
    S.I.=  74812.        SIGE=  74026.

EL=    51  NODES=    19    20    36      MAT=   2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=   .0000         .0000       XC,YC,ZC=  13.1       -8.00        3.77       TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  82410.         6137.0       -33315.         .00000      SIG1,SIG2,SIG3=  84813.         .78578-006  -6385.2
    S.I.=  .10128+006  SIGE=  88250.
MID SX,SY,SXY,SZ=  83295.         8670.9       -33340.         .00000      SIG1,SIG2,SIG3=  86020.         .78831-006  -4054.7
    S.I.=  .10008+006  SIGE=  88111.
BOT SX,SY,SXY,SZ=  84179.         11205.       -33365.         .00000      SIG1,SIG2,SIG3=  87135.         .77698-006  -1760.5
    S.I.=  98685.        SIGE=  88022.

EL=    52  NODES=    36    20    21      MAT=   2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=   .0000         .0000       XC,YC,ZC=  18.4       -8.00        3.77       TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  7788.2         80634.       27747.          .00000      SIG1,SIG2,SIG3=  88068.         .78347-006  -645.08
    S.I.=  88714.        SIGE=  88393.
MID SX,SY,SXY,SZ=  11285.         82342.       28875.          .00000      SIG1,SIG2,SIG3=  .10051+006  3220.5        -.38220-006
    S.I.=  .10051+006  SIGE=  88938.
BOT SX,SY,SXY,SZ=  14881.         84050.       26203.          .00000      SIG1,SIG2,SIG3=  .10194+006  7085.7        -.37265-006
    S.I.=  .10194+006  SIGE=  88583.

EL=    53  NODES=    36    21    37      MAT=   2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=   .0000         .0000       XC,YC,ZC=  18.0       -8.00        3.11       TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  95282.         -9003.8      -17618.          .00000      SIG1,SIG2,SIG3=  98158.         .85474-006  -11800.
    S.I.=  .11008+006  SIGE=  .10462+006
MID SX,SY,SXY,SZ=  98405.         -6650.3      -17304.          .00000      SIG1,SIG2,SIG3=  98227.         .85572-006  -9682.6
    S.I.=  .10891+006  SIGE=  .10441+006
BOT SX,SY,SXY,SZ=  97547.         -4716.7      -16991.          .00000      SIG1,SIG2,SIG3=  .10030+006  .84871-006  -7485.8
    S.I.=  .10776+006  SIGE=  .10423+006

EL=    54  NODES=    37    21    38      MAT=   2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=   .0000         .0000       XC,YC,ZC=  21.3       -8.00        3.11       TEMPS=  150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,SZ=  14548.         60708.       46548.          .00000      SIG1,SIG2,SIG3=  89566.         .81847-006  -14328.
    S.I.=  .10391+006  SIGE=  87543.
MID SX,SY,SXY,SZ=  17786.         62820.       46212.          .00000      SIG1,SIG2,SIG3=  91560.         .80718-006  -11174.
    S.I.=  .10273+006  SIGE=  87627.
```

```
BOT SX,SY,SXY,SZ=  20885.        64530.        45876.        .00000      SIG1,SIG2,SIG3=  83538.        .79797-006 -8022.5
    S.I.=  .10158+006  SIGE=  97796.

EL=   56  NODES=   21   22   38      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  22.9       -8.00        3.77        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  10818+006  8703.8        -90353.       .00000      SIG1,SIG2,SIG3=  .16158+006  .15208-005 -44697.
    S.I.=  .20628+006  SIGE=  .18796+006
MID SX,SY,SXY,SZ=  10934+006  8468.1        -89380.       .00000      SIG1,SIG2,SIG3=  .16153+006  .15127-005 -43723.
    S.I.=  .20528+006  SIGE=  .18728+006
BOT SX,SY,SXY,SZ=  11051+006  8232.5        -88406.       .00000      SIG1,SIG2,SIG3=  .16150+006  .15049-005 -42761.
    S.I.=  .20426+006  SIGE=  .18658+006

EL=   56  NODES=   38   22   23      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  25.2       -8.00        3.77        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  7638.5        10262+006  45761.        .00000      SIG1,SIG2,SIG3=  .12108+006  .10363-005 -10821.
    S.I.=  .13150+006  SIGE=  .12683+006
MID SX,SY,SXY,SZ=  5953.5        10096+006  46295.        .00000      SIG1,SIG2,SIG3=  .11979+006  .10423-005 -12874.
    S.I.=  .13268+006  SIGE=  .12872+006
BOT SX,SY,SXY,SZ=  4268.4        99305.        46828.        .00000      SIG1,SIG2,SIG3=  .11850+006  .10484-005 -14928.
    S.I.=  .13343+006  SIGE=  .12663+006

EL=   57  NODES=   38   23   39      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  27.9       -8.00        3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  93431.       -.10296+006 -40813.       .00000      SIG1,SIG2,SIG3=  .10157+006  .16711-005 -.11111+006
    S.I.=  .21268+006  SIGE=  .18425+006
MID SX,SY,SXY,SZ=  93084.       -.10189+006 -41431.       .00000      SIG1,SIG2,SIG3=  .10152+006  .16645-005 -.11032+006
    S.I.=  .21185+006  SIGE=  .18352+006
BOT SX,SY,SXY,SZ=  92738.       -.10081+006 -42049.       .00000      SIG1,SIG2,SIG3=  .10148+006  .16581-005 -.10955+006
    S.I.=  .21103+006  SIGE=  .18280+006

EL=   58  NODES=   39   23   40      MAT=  2  APEA=  5.33       FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  29.5       -6.22        3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -48208.       23075.        -23371.       .00000      SIG1,SIG2,SIG3=  30054.        .669.1-006 -65188.
    S.I.=  85242.        SIGE=  74884.
MID SX,SY,SXY,SZ=  -48737.       21637.        -23502.       .00000      SIG1,SIG2,SIG3=  28681.        .67148-006 -65780.
    S.I.=  85461.        SIGE=  75333.
BOT SX,SY,SXY,SZ=  -51265.       20199.        -23633.       .00000      SIG1,SIG2,SIG3=  27307.        .67321-006 -66373.
    S.I.=  85681.        SIGE=  75810.

EL=   59  NODES=   23   24   40      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  29.5       -4.44        3.77        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  80625.        9815.3        -23932.       .00000      SIG1,SIG2,SIG3=  87963.        2578.8       -.33545-006
    S.I.=  87963.        SIGE=  86704.
MID SX,SY,SXY,SZ=  79254.        8878.4        -23845.       .00000      SIG1,SIG2,SIG3=  86404.        .68102-006 -271.32
    S.I.=  86676.        SIGE=  86540.
BOT SX,SY,SXY,SZ=  77883.        3841.5        -23758.       .00000      SIG1,SIG2,SIG3=  84851.        .69125-006 -3126.0
    S.I.=  87977.        SIGE=  86458.

EL=   60  NODES=   40   24   25      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  29.5       -.889        3.77        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,-  -3578.4        38263.        -18855.       .00000      SIG1,SIG2,SIG3=  44209.        .42218-006 -9523.6
    S.I.=  537.1         SIGE=  49680.
MID SX,SY,SXY,SZ=  -5344.8        28510.        -18385.       .00000      SIG1,SIG2,SIG3=  43375.        .42102-006 -10208.
    S.I.=  53584.        SIGE=  49279.
BOT SX,SY,SXY,SZ=  -7111.3        18757.        -17934.       .00000      SIG1,SIG2,SIG3=  42656.        .42170-006 -11013.
    S.I.=  53670.        SIGE=  49099.

EL=   61  NODES=   40   25   41      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL   48
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SARGENT & LUNDY


```
P1,P2=   .0000        .0000        XC,YC,ZC=  29.5       .889         3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  18348.        2287.1        -865.90       .00000      SIG1,SIG2,SIG3=  19382.        2243.3       -.67370-007
    S.I.=  19382.        SIGE=  18373.
MID SX,SY,SXY,SZ=  20783.        2791.4        -1459.6       .00000      SIG1,SIG2,SIG3=  20880.        2673.8       -.71527-007
    S.I.=  20880.        SIGE=  19680.
BOT SX,SY,SXY,SZ=  22177.        3295.7        -2053.3       .00000      SIG1,SIG2,SIG3=  22396.        3075.0       -.75912-007
    S.I.=  22396.        SIGE=  21030.

EL=   62  NODES=   41   26   42      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  29.5       4.44         3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  3184.8        6951.0        1022.2        .00000      SIG1,SIG2,SIG3=  7210.5        2925.3       -.15835-007
    S.I.=  7210.5        SIGE=  6281.4
MID SX,SY,SXY,SZ=  2831.2        7135.5        1986.3        .00000      SIG1,SIG2,SIG3=  7812.0        2054.7       -.23011-007
    S.I.=  7812.0        SIGE=  7110.9
BOT SX,SY,SXY,SZ=  2477.6        7319.9        2950.3        .00000      SIG1,SIG2,SIG3=  8715.4        1082.2       -.29988-007
    S.I.=  8715.4        SIGE=  8227.9

EL=   63  NODES=   25   26   42      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  29.5       6.22         3.77        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  8948.3        -7905.8        -5720.6       .00000      SIG1,SIG2,SIG3=  11622.        .16880-006 -9581.8
    S.I.=  21204.        SIGE=  18381.
MID SX,SY,SXY,SZ=  10085.        -7287.6        -6518.0       .00000      SIG1,SIG2,SIG3=  12240.        .17053-006 -9463.1
    S.I.=  21704.        SIGE=  18847.
BOT SX,SY,SXY,SZ=  10183.        -6669.3        -7315.5       .00000      SIG1,SIG2,SIG3=  12916.        .17535-006 -9401.8
    S.I.=  22316.        SIGE=  19407.

EL=   64  NODES=   42   26   27      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  27.9       8.00         3.77        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -9087.5        4964.5        -7875.9       .00000      SIG1,SIG2,SIG3=  8492.8        .16585-006 -12616.
    S.I.=  21109.        SIGE=  18397.
MID SX,SY,SXY,SZ=  -8826.7        4601.2        -7362.2       .00000      SIG1,SIG2,SIG3=  7834.9        .15711-006 -12180.
    S.I.=  18995.        SIGE=  17451.
BOT SX,SY,SXY,SZ=  -8786.8        4237.9        -8848.5       .00000      SIG1,SIG2,SIG3=  7178.4        .14839-006 -11707.
    S.I.=  18887.        SIGE=  16512.

EL=   65  NODES=   42   27   43      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  25.2       8.00         3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -800.08        3917.5        3835.1        .00000      SIG1,SIG2,SIG3=  6037.6        .71188-007 -3020.1
    S.I.=  8057.7        SIGE=  7888.0
MID SX,SY,SXY,SZ=  -781.49        3823.6        3387.9        .00000      SIG1,SIG2,SIG3=  5624.0        .64236-007 -2651.8
    S.I.=  8175.8        SIGE=  7245.1
BOT SX,SY,SXY,SZ=  -802.89        3729.7        2940.7        .00000      SIG1,SIG2,SIG3=  5215.9        .57398-007 -2088.1
    S.I.=  7304.8        SIGE=  6516.8

EL=   66  NODES=   43   27   44      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  22.9       8.00         3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  2076.8        4617.4        -5583.0       .00000      SIG1,SIG2,SIG3=  9170.3        .91509-007 -2476.2
    S.I.=  11647.        SIGE=  10227.
MID SX,SY,SXY,SZ=  1453.8        4411.9        -5339.7       .00000      SIG1,SIG2,SIG3=  8473.8        .87088-007 -2807.9
    S.I.=  11081.        SIGE=  10035.
BOT SX,SY,SXY,SZ=  831.00        4206.3        -4996.4       .00000      SIG1,SIG2,SIG3=  7792.3        .82872-007 -2795.1
    S.I.=  10547.        SIGE=  9475.1

EL=   67  NODES=   27   28   44      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  21.3       8.00         3.77        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  7018.0        931.27        3404.5        .00000      SIG1,SIG2,SIG3=  8541.1        .71758-007 -581.81
    S.I.=  9132.8        SIGE=  8851.6
MID SX,SY,SXY,SZ=  6872.6        903.66        3058.5        .00000      SIG1,SIG2,SIG3=  8181.8        .87152-007 -385.07
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SARGENT & LUNDY

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    S.I.=  8546.6        SIGE=  8360.7
BOT SX,SY,SXY,SZ=  6727.3        878.45        2712.6        .00000      SIG1,SIG2,SIG3=  7791.4        .62693-007 -187.86
    S.I.=  7979.1        SIGE=  7886.9

EL=   68  NODES=   44   28   29      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000        PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  18.0        8.00        3.77      TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  989.50        6866.2        -4322.4        .00000      SIG1,SIG2,SIG3=  9154.5        .82132-007 -1298.7
    S.I.=  10453.        SIGE=  9868.1
MID SX,SY,SXY,SZ=  836.56        6646.3        -4126.9        .00000      SIG1,SIG2,SIG3=  8789.7        .79314-007 -1304.9
    S.I.=  10095.        SIGE=  9509.5
BOT SX,SY,SXY,SZ=  683.61        6430.3        -3931.3        .00000      SIG1,SIG2,SIG3=  8426.4        .78520-007 -1312.5
    S.I.=  8738.9        SIGE=  8153.5

EL=   69  NODES=   44   28   45      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000        PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  16.4        8.00        3.11      TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  2490.7        3031.4        3285.2        .00000      SIG1,SIG2,SIG3=  6057.3        .51798-007 -635.21
    S.I.=  6592.6        SIGE=  6341.9
MID SX,SY,SXY,SZ=  2515.2        3118.6        3146.9        .00000      SIG1,SIG2,SIG3=  5978.2        .49678-007 -344.45
    S.I.=  6322.7        SIGE=  6157.7
BOT SX,SY,SXY,SZ=  2539.8        3205.7        3008.7        .00000      SIG1,SIG2,SIG3=  5899.8        .47568-007 -154.31
    S.I.=  6054.1        SIGE=  5978.4

EL=   70  NODES=   45   29   46      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000        PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  13.1        8.00        3.11      TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  952.28        5063.1        -2175.5        .00000      SIG1,SIG2,SIG3=  6000.9        14.455        -.23516-007
    S.I.=  6000.9        SIGE=  5993.7
MID SX,SY,SXY,SZ=  835.18        4794.2        -2141.0        .00000      SIG1,SIG2,SIG3=  5730.6        .45821-007 -101.16
    S.I.=  5831.7        SIGE=  5781.8
BOT SX,SY,SXY,SZ=  718.09        4525.4        -2106.0        .00000      SIG1,SIG2,SIG3=  5460.8        .44611-007 -217.13
    S.I.=  5677.7        SIGE=  5572.3

EL=   71  NODES=   29   30   46      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000        PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  11.5        8.00        3.77      TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  6065.6        594.34        1241.3        .00000      SIG1,SIG2,SIG3=  6334.0        325.89        - .23604-007
    S.I.=  6334.0        SIGE=  6177.6
MID SX,SY,SXY,SZ=  5814.5        653.11        1201.1        .00000      SIG1,SIG2,SIG3=  6080.3        387.31        - .22365-007
    S.I.=  6080.3        SIGE=  5886.2
BOT SX,SY,SXY,SZ=  5563.3        711.88        1160.8        .00000      SIG1,SIG2,SIG3=  5826.8        448.44        - .21129-007
    S.I.=  5826.8        SIGE=  5616.0

EL=   72  NODES=   46   30   31      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000        PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  8.19        8.00        3.77      TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  311.73        5874.6        -1451.5        .00000      SIG1,SIG2,SIG3=  6042.3        .47915-007 -55.923
    S.I.=  6098.2        SIGE=  6070.4
MID SX,SY,SXY,SZ=  529.31        5401.8        -1428.7        .00000      SIG1,SIG2,SIG3=  5788.8        142.29        - .22183-007
    S.I.=  5788.5        SIGE=  5719.0
BOT SX,SY,SXY,SZ=  746.89        5129.0        -1401.9        .00000      SIG1,SIG2,SIG3=  5539.1        736.76        - .20437-007
    S.I.=  5539.1        SIGE=  5378.6

EL=   73  NODES=   46   31   47      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000        PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  8.56        8.00        3.11      TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  3449.0        883.82        2429.2        .00000      SIG1,SIG2,SIG3=  4856.5        .44002-007 -743.87
    S.I.=  5600.2        SIGE=  5287.9
MID SX,SY,SXY,SZ=  3473.0        1413.3        2146.6        .00000      SIG1,SIG2,SIG3=  4824.0        82.319        - .18707-007
    S.I.=  4824.0        SIGE=  4793.1
BOT SX,SY,SXY,SZ=  3497.0        2182.8        1863.8        .00000      SIG1,SIG2,SIG3=  4809.8        850.19        - .15555-007
    S.I.=  4809.8        SIGE=  4445.9
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SARGENT & LUNDY


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EL=   74  NODES=   47   31   48      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000        PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  3.28        8.00        3.11      TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -2571.0        4106.1        -290.41        .00000      SIG1,SIG2,SIG3=  4118.7        .52661-007 -2583.8
    S.I.=  6702.3        SIGE=  5854.9
MID SX,SY,SXY,SZ=  189.36        4618.1        -428.44        .00000      SIG1,SIG2,SIG3=  4659.8        148.68        - .17722-007
    S.I.=  4659.8        SIGE=  4587.3
BOT SX,SY,SXY,SZ=  2949.7        5132.2        -562.47        .00000      SIG1,SIG2,SIG3=  5266.6        2813.3        - .98480-008
    S.I.=  5266.6        SIGE=  4586.2

EL=   75  NODES=   31   32   48      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000        .000        .000        PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  1.84        8.00        3.77      TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  4223.A        -2184.2        184.62        .00000      SIG1,SIG2,SIG3=  4229.2        .50275-007 -2188.5
    S.I.=  6398.7        SIGE=  5826.3
MID SX,SY,SXY,SZ=  5200.3        586.67        -48.286        .00000      SIG1,SIG2,SIG3=  5200.8        586.23        - .18128-007
    S.I.=  5200.8        SIGE=  4933.8
BOT SX,SY,SXY,SZ=  6176.8        3337.5        -275.20        .00000      SIG1,SIG2,SIG3=  6203.3        3311.1        - .11382-007
    S.I.=  6203.3        SIGE=  5276.3

EL=   76  NODES=   33   34  MAT=  1  PRESSURES(I,Y)=   .00000        .00000      AVE. TEMP=  150.00        3-D THIN-WALL BEAM   24
 CENTROID=  -.1875        .5625        SHEAR CENTER=  .8874-018,   .7500        AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:        IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT    TEMP        SIGX        PT    TEMP        SIGX        PT    TEMP        SIGX        PT    TEMP        SIGX
        1   150.00    59728.
        2   150.00    62492.
        3   150.00    70682.
END J  PT    TEMP        SIGX        PT    TEMP        SIGX        PT    TEMP        SIGX        PT    TEMP        SIGX
        1   150.00    84760.
        2   150.00    62635.
        3   150.00    65363.

EL=   77  NODES=   34   35  MAT=  1  PRESSURES(I,Y)=   .00000        .00000      AVE. TEMP=  150.00        3-D THIN-WALL BEAM   24
 CENTROID=  -.1875        .5625        SHEAR CENTER=  .8874-018,   .7500        AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:        IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT    TEMP        SIGX        PT    TEMP        SIGX        PT    TEMP        SIGX        PT    TEMP        SIGX
        1   150.00    65278.
        2   150.00    62737.
        3   150.00    64751.
END J  PT    TEMP        SIGX        PT    TEMP        SIGX        PT    TEMP        SIGX        PT    TEMP        SIGX
        1   150.00    63035.
        2   150.00    66836.
        3   150.00    59299.

EL=   78  NODES=   35   36  MAT=  1  PRESSURES(I,Y)=   .00000        .00000      AVE. TEMP=  150.00        3-D THIN-WALL BEAM   24
 CENTROID=  -.1875        .5625        SHEAR CENTER=  .8874-018,   .7500        AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:        IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT    TEMP        SIGX        PT    TEMP        SIGX        PT    TEMP        SIGX        PT    TEMP        SIGX
        1   150.00    49879.
        2   150.00    67570.
        3   150.00    62690.
END J  PT    TEMP        SIGX        PT    TEMP        SIGX        PT    TEMP        SIGX        PT    TEMP        SIGX
        1   150.00    82606.
        2   150.00    58042.
        3   150.00    47120.
```


SARGENT & LUNDY

EL= 79 NODES= 36 37 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 .5625 SHEAR CENTER= .8674-018 .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= 0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	43981.									
	2	150.00	61594.									
	3	150.00	57541.									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	83420.									
	2	150.00	86582.									
	3	150.00	28125.									

EL= 80 NODES= 37 38 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 .5625 SHEAR CENTER= .8674-018 .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= 0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	7148.4									
	2	150.00	59848.									
	3	150.00	53589.									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	.10743+006									
	2	150.00	32814.									
	3	150.00	7384.7									

EL= 81 NODES= 38 39 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 .5625 SHEAR CENTER= .8674-018 .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= 0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-36800.									
	2	150.00	39417.									
	3	150.00	54357.									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	13693+006									
	2	150.00	-18300.									
	3	150.00	-3941.0									

EL= 82 NODES= 39 40 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 .5625 SHEAR CENTER= .8674-018 .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= 0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	55387.									
	2	150.00	-16394.									
	3	150.00	24809.									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	17750.									
	2	150.00	14041.									
	3	150.00	1555.0									

EL= 83 NODES= 40 41 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 .5625 SHEAR CENTER= .8674-018 .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= 0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	3168.7									
	2	150.00	12736.									

SARGENT & LUNDY

	3	150.00	10863.									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	28426.									
	2	150.00	9266.0									
	3	150.00	-7453.9									

EL= 84 NODES= 41 42 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 .5625 SHEAR CENTER= .8674-018 .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= 0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-11828.									
	2	150.00	8788.8									
	3	150.00	8008.1									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	24400.									
	2	150.00	-1083.5									
	3	150.00	-5458.0									

EL= 85 NODES= 42 43 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 .5625 SHEAR CENTER= .8674-018 .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= 0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	8056.3									
	2	150.00	-3208.3									
	3	150.00	3900.9									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-5015.8									
	2	150.00	3078.5									
	3	150.00	5403.4									

EL= 86 NODES= 43 44 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 .5625 SHEAR CENTER= .8674-018 .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= 0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	7600.0									
	2	150.00	2157.7									
	3	150.00	2152.7									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	351.46									
	2	150.00	4182.2									
	3	150.00	5352.2									

EL= 87 NODES= 44 45 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 .5625 SHEAR CENTER= .8674-018 .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= 0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	8107.2									
	2	150.00	3482.6									
	3	150.00	3726.8									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	986.26									
	2	150.00	4787.9									
	3	150.00	6237.2									

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EL=   88  NODES=   45   46  MAT=  1  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.1875          .5625       SHEAR CENTER=   .8674-018,    .7500       AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:          IYP=   .3155-002   IZP=   .3155-002   THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     6357.3
        2   150.00     4508.1
        3   150.00     8578.4
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     2730.1
        2   150.00     4222.3
        3   150.00     10773.

EL=   89  NODES=   46   47  MAT=  1  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.1875          .5625       SHEAR CENTER=   .8674-018,    .7500       AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:          IYP=   .3155-002   IZP=   .3155-002   THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     5042.6
        2   150.00     4376.5
        3   150.00     9388.5
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     4191.0
        2   150.00     3710.3
        3   150.00     11572.

EL=   90  NODES=   47   48  MAT=  1  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.1875          .5625       SHEAR CENTER=   .8674-018,    .7500       AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:          IYP=   .3155-002   IZP=   .3155-002   THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     2892.5
        2   150.00     4307.2
        3   150.00     10760.
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     8532.1
        2   150.00     5662.4
        3   150.00     4110.1

EL=   91  NODES=   48   49  MAT=  1  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.1875          .5625       SHEAR CENTER=   .8674-018,    .7500       AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:          IYP=   .3155-002   IZP=   .3155-002   THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00    -1346.0
        2   150.00     218.90
        3   150.00     218.50
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     581.04
        2   150.00    -424.51
        3   150.00    -424.51

EL=   92  NODES=   49   50  MAT=  1  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.1875          .5625       SHEAR CENTER=   .8674-018,    .7500       AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:          IYP=   .3155-002   IZP=   .3155-002   THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     223.87
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        2   150.00    -380.58
        3   150.00    -380.58
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00    -1928.6
        2   150.00     340.19
        3   150.00     340.19

EL=   93  NODES=   50   33  MAT=  1  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.1875          .5625       SHEAR CENTER=   .8674-018,    .7500       AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:          IYP=   .3155-002   IZP=   .3155-002   THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     2157.5
        2   150.00     -160.14
        3   150.00     -160.14
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     1327.5
        2   150.00     116.48
        3   150.00     116.48

EL=   94  NODES=   33   34   51   51       MAT=  1  AREA=  12.0       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   1.228      -8.000       .8674-018  PRESS=   .00000          .00000
MX,MY,MXY=    1.0185          .51069          .95531-001
TOP SX,SY,SXY,SZ=   66277.       12028.       -1382.8          .00000       SIG1,SIG2,SIG3=   66312.       11981.       -.21340-006
     S.I.=   66312.          SIGE=   61204.
MID SX,SY,SXY,SZ=   65777.       11778.       -1429.8          .00000       SIG1,SIG2,SIG3=   65814.       11738.       -.21244-006
     S.I.=   65814.          SIGE=   60801.
BOT SX,SY,SXY,SZ=   65278.       11525.       -1476.7          .00000       SIG1,SIG2,SIG3=   65317.       11485.       -.21149-006
     S.I.=   65317.          SIGE=   60399.

EL=   95  NODES=   51   34   52   52       MAT=  1  AREA=  12.0       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   3.688      -8.000      -1.220       PRESS=   .00000          .00000
MX,MY,MXY=   -.61800-001   -1.5173          .40224
TOP SX,SY,SXY,SZ=   37881.       28078.       22494.          .00000       SIG1,SIG2,SIG3=   58001.       9857.1       -.18049-006
     S.I.=   58001.          SIGE=   51746.
MID SX,SY,SXY,SZ=   37911.       28827.       22297.          .00000       SIG1,SIG2,SIG3=   58122.       10611.       -.17879-006
     S.I.=   58122.          SIGE=   51641.
BOT SX,SY,SXY,SZ=   37942.       29556.       22100.          .00000       SIG1,SIG2,SIG3=   58247.       11281.       -.17873-006
     S.I.=   58247.          SIGE=   51647.

EL=   96  NODES=   34   53   52   52       MAT=  1  AREA=  12.0       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   5.146      -8.000      -1.220       PRESS=   .00000          .00000
MX,MY,MXY=   -2.2388          -.57632          -.28452
TOP SX,SY,SXY,SZ=   24909.       38697.       -22048.          .00000       SIG1,SIG2,SIG3=   54804.       8701.7       -.18151-006
     S.I.=   54804.          SIGE=   51112.
MID SX,SY,SXY,SZ=   25006.       38878.       -21809.          .00000       SIG1,SIG2,SIG3=   55342.       9643.7       -.17853-006
     S.I.=   55342.          SIGE=   51205.
BOT SX,SY,SXY,SZ=   27103.       39252.       -21769.          .00000       SIG1,SIG2,SIG3=   55785.       10580.       -.17758-006
     S.I.=   55785.          SIGE=   51320.

EL=   97  NODES=   34   35   53   53       MAT=  1  AREA=  12.0       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   6.504      -8.000       .8674-018  PRESS=   .00000          .00000
MX,MY,MXY=   -.83852          -1.0365          -1.1224
TOP SX,SY,SXY,SZ=   65867.       6559.6       -8523.3          .00000       SIG1,SIG2,SIG3=   67358.       5087.8       -.24472-006
     S.I.=   67358.          SIGE=   64974.
MID SX,SY,SXY,SZ=   66328.       7058.0       -8972.8          .00000       SIG1,SIG2,SIG3=   67857.       5739.2       -.24328-006
     S.I.=   67857.          SIGE=   64977.
BOT SX,SY,SXY,SZ=   66788.       7578.4       -8422.3          .00000       SIG1,SIG2,SIG3=   67863.       6401.7       -.24185-006
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S.I.= 67983. SIGE= 64999.

EL= 98 NODES= 35 36 53 53 MAT= 1 AREA= 12.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 11.06 -8.000 .8674-018 PRESS= .00000 .00000
MX,MY,MXY= -1.5830 -2.0895 -.70712
TOP SX,SY,SXY,S2= 67842. 6730.4 -18118. .00000 SIG1,SIG2,SIG3= 71833. 2740.1 -.27144-006
S.I.= 71833. SIGE= 70503.
MID SX,SY,SXY,S2= 68619. 7755.3 -15771. .00000 SIG1,SIG2,SIG3= 72463. 3911.6 -.28831-006
S.I.= 72463. SIGE= 70588.
BOT SX,SY,SXY,S2= 69385. 8780.2 -15424. .00000 SIG1,SIG2,SIG3= 73094. 5081.3 -.28719-006
S.I.= 73094. SIGE= 70891.

EL= 99 NODES= 53 36 54 54 MAT= 1 AREA= 12.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 13.52 -8.000 -1.220 PRESS= .00000 .00000
MX,MY,MXY= -1.3258 -3.3118 -.11224
TOP SX,SY,SXY,S2= 51185. 12686. 14887. .00000 SIG1,SIG2,SIG3= 56250. 7580.4 -.18120-006
S.I.= 56250. SIGE= 52865.
MID SX,SY,SXY,S2= 51815. 14290. 14943. .00000 SIG1,SIG2,SIG3= 57039. 9067.0 -.18848-006
S.I.= 57039. SIGE= 53089.
BOT SX,SY,SXY,S2= 52466. 15815. 14998. .00000 SIG1,SIG2,SIG3= 57832. 10549. -.18578-006
S.I.= 57832. SIGE= 53345.

EL= 100 NODES= 36 55 54 54 MAT= 1 AREA= 12.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 15.98 -8.000 -1.220 PRESS= .00000 .00000
MX,MY,MXY= -2.6587 -2.4676 .19472
TOP SX,SY,SXY,S2= 5280.0 45827. -11780. .00000 SIG1,SIG2,SIG3= 49002. 2115.2 -.18420-006
S.I.= 49002. SIGE= 47960.
MID SX,SY,SXY,S2= 6594.1 47038. -11876. .00000 SIG1,SIG2,SIG3= 50267. 3364.7 -.18426-006
S.I.= 50267. SIGE= 48672.
BOT SX,SY,SXY,S2= 7898.2 48248. -11971. .00000 SIG1,SIG2,SIG3= 51533. 4613.8 -.18433-006
S.I.= 51533. SIGE= 49388.

EL= 101 NODES= 36 37 55 55 MAT= 1 AREA= 12.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 18.44 -8.000 .8674-018 PRESS= .00000 .00000
MX,MY,MXY= -1.8276 -.11092 -1.3288
TOP SX,SY,SXY,S2= 66547. 12439. -28163. .00000 SIG1,SIG2,SIG3= 76545. 441.31 -.30684-006
S.I.= 76545. SIGE= 74326.
MID SX,SY,SXY,S2= 67449. 12494. -27512. .00000 SIG1,SIG2,SIG3= 76855. 1067.8 -.30551-006
S.I.= 76855. SIGE= 74316.
BOT SX,SY,SXY,S2= 68350. 12548. -26861. .00000 SIG1,SIG2,SIG3= 77179. 1718.5 -.30431-006
S.I.= 77179. SIGE= 74333.

EL= 102 NODES= 37 38 55 55 MAT= 1 AREA= 12.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 20.80 -8.000 .8674-018 PRESS= .00000 .00000
MX,MY,MXY= -2.2328 -.58025 -.20012
TOP SX,SY,SXY,S2= 69309. 10105. -25390. .00000 SIG1,SIG2,SIG3= 70061. .55556-006 -646.89
S.I.= 70706. SIGE= 70386.
MID SX,SY,SXY,S2= 69404. 10380. -25292. .00000 SIG1,SIG2,SIG3= 70963. .55897-006 -178.68
S.I.= 71141. SIGE= 71052.
BOT SX,SY,SXY,S2= 69499. 10655. -25194. .00000 SIG1,SIG2,SIG3= 71868. 285.86 -.28122-006
S.I.= 71868. SIGE= 71726.

EL= 103 NODES= 55 38 56 56 MAT= 1 AREA= 12.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 23.35 -8.000 -1.220 PRESS= .00000 .00000
MX,MY,MXY= -.20974 2.6056 -1.2187
TOP SX,SY,SXY,S2= 53033. -14589. 8529.0 .00000 SIG1,SIG2,SIG3= 53658. .54114-006 -15214.
S.I.= 56872. SIGE= 52866.
MID SX,SY,SXY,S2= 53138. -15867. 7178.8 .00000 SIG1,SIG2,SIG3= 53864. .55361-006 -16595.

S.I.= 70480. SIGE= 63802.
BOT SX,SY,SXY,S2= 53239. -17145. 7722.6 .00000 SIG1,SIG2,SIG3= 54077. .56618-006 -17882.
S.I.= 72059. SIGE= 64962.

EL= 104 NODES= 36 57 56 56 MAT= 1 AREA= 12.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 25.81 -8.000 -1.220 PRESS= .00000 .00000
MX,MY,MXY= 2.4563 1.1288 -.41868
TOP SX,SY,SXY,S2= -18539. 24373. 784.71 .00000 SIG1,SIG2,SIG3= 24388. .32158-006 -18554.
S.I.= 40842. SIGE= 35672.
MID SX,SY,SXY,S2= -18234. 23818. 988.09 .00000 SIG1,SIG2,SIG3= 23842. .33078-006 -18257.
S.I.= 42100. SIGE= 36586.
BOT SX,SY,SXY,S2= -19829. 23265. 1193.5 .00000 SIG1,SIG2,SIG3= 23298. .33891-006 -19862.
S.I.= 43261. SIGE= 37502.

EL= 105 NODES= 38 39 57 57 MAT= 1 AREA= 12.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 28.27 -8.000 .8674-018 PRESS= .00000 .00000
MX,MY,MXY= 2.2508 6.8267 .28833
TOP SX,SY,SXY,S2= 36494. -45574. -16006. .00000 SIG1,SIG2,SIG3= 38506. .89214-006 -48585.
S.I.= 88091. SIGE= 76424.
MID SX,SY,SXY,S2= 35390. -44823. -16186. .00000 SIG1,SIG2,SIG3= 38394. .70967-006 -51827.
S.I.= 90321. SIGE= 78512.
BOT SX,SY,SXY,S2= 34286. -62271. -16385. .00000 SIG1,SIG2,SIG3= 37284. .72720-006 -55269.
S.I.= 92553. SIGE= 80656.

EL= 106 NODES= 39 40 57 57 MAT= 1 AREA= 13.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 29.50 -6.667 .8674-018 PRESS= .00000 .00000
MX,MY,MXY= 4.4560 8.1385 .17063-001
TOP SX,SY,SXY,S2= 22731. -48883. -10577. .00000 SIG1,SIG2,SIG3= 24260. .58678-006 -50422.
S.I.= 74683. SIGE= 65827.
MID SX,SY,SXY,S2= 20545. -53376. -10585. .00000 SIG1,SIG2,SIG3= 22031. .60416-006 -54882.
S.I.= 76893. SIGE= 66585.
BOT SX,SY,SXY,S2= 18360. -57859. -10594. .00000 SIG1,SIG2,SIG3= 19805. .62157-006 -59304.
S.I.= 79109. SIGE= 71300.

EL= 107 NODES= 57 40 58 58 MAT= 1 AREA= 13.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 29.50 -4.000 -1.220 PRESS= .00000 .00000
MX,MY,MXY= 5.2518 4.5214 -1.2147
TOP SX,SY,SXY,S2= 5856.8 -8423.4 -3295.3 .00000 SIG1,SIG2,SIG3= 6581.1 .12358-006 -8147.5
S.I.= 15729. SIGE= 13682.
MID SX,SY,SXY,S2= 3280.8 -10641. -2700.5 .00000 SIG1,SIG2,SIG3= 3786.3 .11733-006 -11147.
S.I.= 14833. SIGE= 13446.
BOT SX,SY,SXY,S2= 704.83 -12859. -2104.6 .00000 SIG1,SIG2,SIG3= 1023.8 .11189-006 -13178.
S.I.= 14202. SIGE= 13719.

EL= 108 NODES= 40 59 58 58 MAT= 1 AREA= 13.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 29.50 -1.333 -1.220 PRESS= .00000 .00000
MX,MY,MXY= 3.7997 3.7896 1.4688
TOP SX,SY,SXY,S2= 8275.8 -5138.4 1563.8 .00000 SIG1,SIG2,SIG3= 8465.7 .10823-006 -5318.3
S.I.= 13774. SIGE= 12031.
MID SX,SY,SXY,S2= 8412.1 -6987.5 843.35 .00000 SIG1,SIG2,SIG3= 8454.8 .10811-006 -7040.4
S.I.= 13505. SIGE= 11700.
BOT SX,SY,SXY,S2= 4548.3 -8836.6 122.83 .00000 SIG1,SIG2,SIG3= 4549.4 .10519-006 -8837.8
S.I.= 13387. SIGE= 11790.

EL= 109 NODES= 40 41 59 59 MAT= 1 AREA= 13.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 29.50 1.333 .8674-018 PRESS= .00000 .00000
MX,MY,MXY= -.81131 2.8588 1.9108
TOP SX,SY,SXY,S2= 15838. 2936.2 2013.5 .00000 SIG1,SIG2,SIG3= 16148. 2831.2 -.83095-007

```
     S.I.=    18146.          SIGE=   15005.
MID SX,SY,SXY,SZ=   16288.          1630.0          1076.2          .00000      SIG1,SIG2,SIG3=   16365.          1551.4          -.58156-007
     S.I.=    16365.          SIGE=   15847.
BOT SX,SY,SXY,SZ=   16733.          321.88          138.93          .00000      SIG1,SIG2,SIG3=   16734.          320.71          -.64483-007
     S.I.=    16734.          SIGE=   16576.

EL=  110  NODES=   41   42   59   58      MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   29.50          4.000          .8674-018  PRESS=   .00000          .00000
MX,MY,MXY=      .73041          3.0756          2.1220
TOP SX,SY,SXY,SZ=   6192.7          3.0808          7136.9          .00000      SIG1,SIG2,SIG3=   10879.          .12227-006  -4842.9
     S.I.=    15582.          SIGE=   13823.
MID SX,SY,SXY,SZ=   5334.4          -1505.5          6098.0          .00000      SIG1,SIG2,SIG3=   8281.7          .11184-006  -4952.7
     S.I.=    14234.          SIGE=   12516.
BOT SX,SY,SXY,SZ=   5476.2          -3014.1          5057.2          .00000      SIG1,SIG2,SIG3=   7833.8          .10376-006  -5371.7
     S.I.=    13206.          SIGE=   11502.

EL=  111  NODES=   59   42   60   60      MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   29.50          6.667          -1.220          PRESS=   .00000          .00000
MX,MY,MXY=     -.98805          1.7481          -.52801
TOP SX,SY,SXY,SZ=  -6142.6          1859.1          1799.2          .00000      SIG1,SIG2,SIG3=   2245.1          .68936-007  -8528.5
     S.I.=    8773.8          SIGE=   7896.2
MID SX,SY,SXY,SZ=  -5857.9          1001.7          2058.2          .00000      SIG1,SIG2,SIG3=   1588.5          .51515-007  -6242.7
     S.I.=    7829.2          SIGE=   7168.8
BOT SX,SY,SXY,SZ=  -5173.3          144.30          2317.2          .00000      SIG1,SIG2,SIG3=   1012.3          .55422-007  -6041.3
     S.I.=    7063.7          SIGE=   6505.9

EL=  112  NODES=   42   61   60   60      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   28.27          8.000          -1.220          PRESS=   .00000          .00000
MX,MY,MXY=      1.5421          -.35136          -.28004-001
TOP SX,SY,SXY,SZ=   1455.1          -3807.5          -2215.7          .00000      SIG1,SIG2,SIG3=   2263.7          .54057-007  -4816.2
     S.I.=    6879.9          SIGE=   6073.2
MID SX,SY,SXY,SZ=   695.75          -3635.2          -2201.9          .00000      SIG1,SIG2,SIG3=   1621.1          .48548-007  -4557.5
     S.I.=    6178.8          SIGE=   5548.8
BOT SX,SY,SXY,SZ=  -57.856          -3482.9          -2188.2          .00000      SIG1,SIG2,SIG3=   1012.3          .42569-007  -4532.8
     S.I.=    5565.1          SIGE=   5114.7

EL=  113  NODES=   42   43   61   61      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   25.81          8.000          .8674-018  PRESS=   .00000          .00000
MX,MY,MXY=      .26482          .63508          1.2808
TOP SX,SY,SXY,SZ=   2037.5          -63.643          1573.6          .00000      SIG1,SIG2,SIG3=   2879.0          .29733-007  -805.14
     S.I.=    3784.2          SIGE=   3422.6
MID SX,SY,SXY,SZ=   1907.7          -375.16          955.27          .00000      SIG1,SIG2,SIG3=   2254.7          .23390-007  -722.15
     S.I.=    2976.9          SIGE=   2689.5
BOT SX,SY,SXY,SZ=   1777.9          -686.67          336.93          .00000      SIG1,SIG2,SIG3=   1623.1          .20075-007  -731.90
     S.I.=    2555.0          SIGE=   2279.0

EL=  114  NODES=   43   44   61   61      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   23.35          8.000          .8674-018  PRESS=   .00000          .00000
MX,MY,MXY=     -.58304-002          .42631          .55315
TOP SX,SY,SXY,SZ=   4053.7          476.81          2543.6          .00000      SIG1,SIG2,SIG3=   5375.0          .48853-007  -842.68
     S.I.=    6217.7          SIGE=   5842.1
MID SX,SY,SXY,SZ=   4055.6          269.50          2272.2          .00000      SIG1,SIG2,SIG3=   5120.6          .45479-007  -784.73
     S.I.=    5915.6          SIGE=   5560.9
BOT SX,SY,SXY,SZ=   4059.5          60.397          2000.9          .00000      SIG1,SIG2,SIG3=   4888.7          .44452-007  -768.79
     S.I.=    5857.6          SIGE=   5314.9

EL=  115  NODES=   61   44   62   62      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   20.90          8.000          -1.220          PRESS=   .00000          .00000
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SARGENT & LUNDY

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MX,MY,MXY=     -.40245          .76188          .58371-001
TOP SX,SY,SXY,SZ=   -701.69          3430.2          212.23          .00000      SIG1,SIG2,SIG3=   3441.1          .32836-007  -712.58
     S.I.=    4153.6          SIGE=   3847.2
MID SX,SY,SXY,SZ=   -504.29          3058.5          183.59          .00000      SIG1,SIG2,SIG3=   3085.9          .28126-007  -513.73
     S.I.=    3579.7          SIGE=   3352.5
BOT SX,SY,SXY,SZ=   -306.88          2682.8          154.86          .00000      SIG1,SIG2,SIG3=   2690.8          .23616-007  -314.89
     S.I.=    3006.7          SIGE=   2861.3

EL=  116  NODES=   44   63   62   62      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   18.44          8.000          -1.220          PRESS=   .00000          .00000
MX,MY,MXY=      .60782          -.43246          -.31478-001
TOP SX,SY,SXY,SZ=   4422.4          -123.17          -617.80          .00000      SIG1,SIG2,SIG3=   4504.8          .37011-007  -205.84
     S.I.=    4710.5          SIGE=   4611.1
MID SX,SY,SXY,SZ=   4124.2          88.852          -602.36          .00000      SIG1,SIG2,SIG3=   4212.2          .95919          -.18544-007
     S.I.=    4212.2          SIGE=   4211.7
BOT SX,SY,SXY,SZ=   3826.1          301.07          -586.92          .00000      SIG1,SIG2,SIG3=   3921.2          205.92          -.14586-007
     S.I.=    3921.2          SIGE=   3822.4

EL=  117  NODES=   44   45   63   63      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   15.98          8.000          .8674-018  PRESS=   .00000          .00000
MX,MY,MXY=      .38051          .33571          .39139
TOP SX,SY,SXY,SZ=   4988.7          342.23          1832.7          .00000      SIG1,SIG2,SIG3=   5676.2          232.70          -.21385-007
     S.I.=    5876.2          SIGE=   5563.5
MID SX,SY,SXY,SZ=   4780.0          777.57          1640.9          .00000      SIG1,SIG2,SIG3=   5366.6          190.94          -.20333-007
     S.I.=    5366.6          SIGE=   5273.8
BOT SX,SY,SXY,SZ=   4593.4          812.90          1448.8          .00000      SIG1,SIG2,SIG3=   5064.8          141.43          -.18342-007
     S.I.=    5064.8          SIGE=   4995.6

EL=  118  NODES=   45   46   63   63      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   13.52          8.000          .8674-018  PRESS=   .00000          .00000
MX,MY,MXY=      .68818          .70808          .53430-001
TOP SX,SY,SXY,SZ=   5114.2          1123.9          1344.0          .00000      SIG1,SIG2,SIG3=   5524.7          713.40          -.18801-007
     S.I.=    5524.7          SIGE=   5204.8
MID SX,SY,SXY,SZ=   4776.6          776.58          1317.8          .00000      SIG1,SIG2,SIG3=   5171.6          361.44          -.18819-007
     S.I.=    5171.6          SIGE=   4892.0
BOT SX,SY,SXY,SZ=   4439.1          429.25          1291.6          .00000      SIG1,SIG2,SIG3=   4819.1          49.238          -.18738-007
     S.I.=    4819.1          SIGE=   4794.7

EL=  119  NODES=   63   46   64   64      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   11.06          8.000          -1.220          PRESS=   .00000          .00000
MX,MY,MXY=      .85742          .82587          -.37644
TOP SX,SY,SXY,SZ=   1524.2          3478.4          1153.4          .00000      SIG1,SIG2,SIG3=   4013.8          988.81          -.11880-007
     S.I.=    4013.8          SIGE=   3621.7
MID SX,SY,SXY,SZ=   1201.7          3172.4          1338.0          .00000      SIG1,SIG2,SIG3=   3848.8          525.35          -.13058-007
     S.I.=    3848.8          SIGE=   3614.8
BOT SX,SY,SXY,SZ=   879.25          2865.4          1522.7          .00000      SIG1,SIG2,SIG3=   3890.2          54.418          -.14284-007
     S.I.=    3890.2          SIGE=   3663.3

EL=  120  NODES=   46   65   64   64      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=    8.604          8.000          -1.220          PRESS=   .00000          .00000
MX,MY,MXY=      .65256          .87201          .89356
TOP SX,SY,SXY,SZ=   3450.3          2003.9          -1087.1          .00000      SIG1,SIG2,SIG3=   4032.8          1421.4          -.10259-007
     S.I.=    4032.8          SIGE=   3542.8
MID SX,SY,SXY,SZ=   3178.3          1576.2          -1427.3          .00000      SIG1,SIG2,SIG3=   4014.7          740.72          -.12882-007
     S.I.=    4014.7          SIGE=   3700.4
BOT SX,SY,SXY,SZ=   2908.2          1148.5          -1767.8          .00000      SIG1,SIG2,SIG3=   4002.8          53.818          -.15513-007
     S.I.=    4002.8          SIGE=   3876.1
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3308

SARGENT & LUNDY

52

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EL= 121 NODES= 46 47 65 65 MAT= 1 AREA= 12.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 6.146 8.000 8674-018 PRESS= .00000 .00000
MX,MY,MXY= 2.4534 2.0003 -1.2544
TOP SX,SY,SXY,SZ= 5938.8 1376.5 68.945 .00000 SIG1,SIG2,SIG3= 5939.9 1375.6 -.17931-007
S.I.= 5939.9 SIGE= 5265.5
MID SX,SY,SXY,SZ= 4735.4 395.50 684.21 .00000 SIG1,SIG2,SIG3= 4840.8 290.16 -.17877-007
S.I.= 4840.8 SIGE= 4702.4
BOT SX,SY,SXY,SZ= 3532.0 -585.65 1299.5 .00000 SIG1,SIG2,SIG3= 3907.8 .36259-007 -861.45
S.I.= 4869.3 SIGE= 4486.8

EL= 122 NODES= 47 48 65 65 MAT= 1 AREA= 12.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 3.688 8.000 8674-018 PRESS= .00000 .00000
MX,MY,MXY= 2.0188 1.1408 -1.0347
TOP SX,SY,SXY,SZ= 5865.6 937.00 -215.01 .00000 SIG1,SIG2,SIG3= 5875.6 927.24 -.18854-007
S.I.= 5875.6 SIGE= 5273.5
MID SX,SY,SXY,SZ= 4675.6 377.54 282.50 .00000 SIG1,SIG2,SIG3= 4895.4 357.73 -.17041-007
S.I.= 4655.4 SIGE= 4527.2
BOT SX,SY,SXY,SZ= 3585.4 -181.91 600.00 .00000 SIG1,SIG2,SIG3= 3844.3 .32884-007 -340.87
S.I.= 4185.2 SIGE= 4025.8

EL= 123 NODES= 65 48 66 66 MAT= 1 AREA= 12.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 1.229 8.000 -1.220 PRESS= .00000 .00000
MX,MY,MXY= 2.9752 -.23024 -.18272
TOP SX,SY,SXY,SZ= 3645.5 2476.9 1534.3 .00000 SIG1,SIG2,SIG3= 4703.0 1419.5 -.12900-007
S.I.= 4703.0 SIGE= 4178.2
MID SX,SY,SX. SZ= 2186.2 2589.8 1623.9 .00000 SIG1,SIG2,SIG3= 4024.4 751.65 -.12857-007
S.I.= 4024.4 SIGE= 3706.2
BOT SX,SY,SXY,SZ= 726.87 2702.8 1713.5 .00000 SIG1,SIG2,SIG3= 3692.7 .31082-007 -263.10
S.I.= 3855.8 SIGE= 3831.1

EL= 124 NODES= 48 67 66 66 MAT= 1 AREA= 13.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= .0000 6.667 -1.220 PRESS= .00000 .00000
MX,MY,MXY= .00000 .00000 .00000
TOP SX,SY,SXY,SZ= 342.83 -220.89 -345.84 .00000 SIG1,SIG2,SIG3= 507.13 .70110-008 -385.18
S.I.= 892.31 SIGE= 775.16
MID SX,SY,SXY,SZ= 342.83 -220.89 -345.84 .00000 SIG1,SIG2,SIG3= 507.13 .70110-008 -385.18
S.I.= 892.31 SIGE= 775.16
BOT SX,SY,SXY,SZ= 342.83 -220.89 -345.84 .00000 SIG1,SIG2,SIG3= 507.13 .70110-008 -385.18
S.I.= 892.31 SIGE= 775.16

EL= 125 NODES= 48 48 67 67 MAT= 1 AREA= 13.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= .0000 4.002 8674-018 PRESS= .00000 .00000
MX,MY,MXY= .00000 .00000 .00000
TOP SX,SY,SXY,SZ= -325.33 193.79 374.40 .00000 SIG1,SIG2,SIG3= 389.80 .71590-008 -521.34
S.I.= 911.14 SIGE= 791.81
MID SX,SY,SXY,SZ= -325.33 193.79 374.40 .00000 SIG1,SIG2,SIG3= 389.80 .71590-008 -521.34
S.I.= 911.14 SIGE= 791.81
BOT SX,SY,SXY,SZ= -325.33 193.79 374.40 .00000 SIG1,SIG2,SIG3= 389.80 .71590-008 -521.34
S.I.= 911.14 SIGE= 791.81

EL= 126 NODES= 49 50 67 67 MAT= 1 AREA= 13.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= .0000 1.335 8674-018 PRESS= .00000 .00000
MX,MY,MXY= .00000 .00000 .00000
TOP SX,SY,SXY,SZ= -835.25 40.820 102.12 .00000 SIG1,SIG2,SIG3= 52.567 .70880-008 -846.99
S.I.= 899.56 SIGE= 874.46
MID SX,SY,SXY,SZ= -835.25 40.820 102.12 .00000 SIG1,SIG2,SIG3= 52.567 .70880-008 -846.99
S.I.= 899.56 SIGE= 874.46
BOT SX,SY,SXY,SZ= -835.25 40.820 102.12 .00000 SIG1,SIG2,SIG3= 52.567 .70880-008 -846.99
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SARGENT & LUNDY

53

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S.I.= 899.56 SIGE= 874.46

EL= 127 NODES= 50 68 67 67 MAT= 1 AREA= 13.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= .0000 .0000 -1.220 PRESS= .00000 .00000
MX,MY,MXY= .00000 .00000 .00000
TOP SX,SY,SXY,SZ= -532.41 884.07 -515.33 .00000 SIG1,SIG2,SIG3= 1051.7 .13764-007 -700.05
S.I.= 1751.8 SIGE= 1527.2
MID SX,SY,SXY,SZ= -532.41 884.07 -515.33 .00000 SIG1,SIG2,SIG3= 1051.7 .13764-007 -700.05
S.I.= 1751.8 SIGE= 1527.2
BOT SX,SY,SXY,SZ= -532.41 884.07 -515.33 .00000 SIG1,SIG2,SIG3= 1051.7 .13764-007 -700.05
S.I.= 1751.8 SIGE= 1527.2

EL= 128 NODES= 50 51 68 68 MAT= 1 AREA= 13.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= .0000 -4.002 -1.220 PRESS= .00000 .00000
MX,MY,MXY= .00000 .00000 .00000
TOP SX,SY,SXY,SZ= -708.82 681.58 -670.44 .00000 SIG1,SIG2,SIG3= 952.46 .15166-007 -877.71
S.I.= 1830.2 SIGE= 1671.6
MID SX,SY,SXY,SZ= -708.82 681.58 -670.44 .00000 SIG1,SIG2,SIG3= 952.46 .15166-007 -877.71
S.I.= 1830.2 SIGE= 1671.6
BOT SX,SY,SXY,SZ= -708.82 681.58 -670.44 .00000 SIG1,SIG2,SIG3= 952.46 .15166-007 -877.71
S.I.= 1830.2 SIGE= 1671.6

EL= 129 NODES= 50 33 51 51 MAT= 1 AREA= 13.0 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= .0000 -6.667 8674-018 PRESS= .00000 .00000
MX,MY,MXY= .00000 .00000 .00000
TOP SX,SY,SXY,SZ= -708.42 -8169.9 1366.4 .00000 SIG1,SIG2,SIG3= -.21259-013 -466.07 -8412.3
S.I.= 8412.3 SIGE= 8189.2
MID SX,SY,SXY,SZ= -708.42 -8169.9 1746.4 .00000 SIG1,SIG2,SIG3= -.21259-013 -466.07 -8412.3
S.I.= 8412.3 SIGE= 8189.2
BOT SX,SY,SXY,SZ= -708.42 -8169.9 1386.4 .00000 SIG1,SIG2,SIG3= -.21259-013 -466.07 -8412.3
S.I.= 8412.3 SIGE= 8189.2

EL= 130 NODES= 51 52 MAT= 1 PRESSURES(Z,Y)= .00000 .00000 AVE TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000
END I PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 48511.
2 150.00 50016.
3 150.00 56130.
END J PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 58261.
2 150.00 49925.
3 150.00 44582.

EL= 131 NODES= 52 53 MAT= 1 PRESSURES(Z,Y)= .00000 .00000 AVE TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000
END I PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 36873.
2 150.00 50408.
3 150.00 52803.
END J PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX PT TEMP SIGX
1 150.00 65452.
2 150.00 46142.
3 150.00 32755.
```

SARGENT & LUNDY

1308

EL= 132 NODES= 53 54 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	16540									
	2	150.00	47473									
	3	150.00	50787									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	68949									
	2	150.00	37355									
	3	150.00	18613									

EL= 133 NODES= 54 55 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	12393									
	2	150.00	39230									
	3	150.00	38825									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	55632									
	2	150.00	30262									
	3	150.00	13523									

EL= 134 NODES= 55 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	166									
	2	150.00	127.									
	3	150.00	060.									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	4753.									
	2	150.00	4153.									
	3	150.00	1787.5									

EL= 135 NODES= 56 57 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-42885									
	2	150.00	18080									
	3	150.00	38648									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	43795.									
	2	150.00	-3995.1									
	3	150.00	-5902.5									

EL= 136 NODES= 57 58 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	2028.8									

SARGENT & LUNDY

	2	150.00	-4571.2									
	3	150.00	7311.2									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-12571.									
	2	150.00	1456.2									
	3	150.00	8856.0									

EL= 137 NODES= 58 59 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-3252.8									
	2	150.00	1010.7									
	3	150.00	6881.5									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	2309.4									
	2	150.00	2687.1									
	3	150.00	-2113.4									

EL= 138 NODES= 59 60 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-4763.7									
	2	150.00	2217.5									
	3	150.00	2040.8									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	6067.6									
	2	150.00	142.18									
	3	150.00	-4640.0									

EL= 139 NODES= 60 61 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	6382.8									
	2	150.00	1231.1									
	3	150.00	-5800.7									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-2671.3									
	2	150.00	1336.2									
	3	150.00	3043.3									

EL= 140 NODES= 61 62 MAT= 1 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	3251.1									
	2	150.00	1402.2									
	3	150.00	284.23									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-1021.8									
	2	150.00	1726.2									
	3	150.00	3811.3									

SARGENT & LUNDY

3308

EL= 141 NODES= 62 63 MAT= 1 PRESSURES[Z,Y]= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
END I	1	150.00	4779.1									
	2	150.00	1701.3									
	3	150.00	1409.0									
END J	1	150.00	-224.48									
	2	150.00	2836.4									
	3	150.00	4142.8									

EL= 142 NODES= 63 64 MAT= 1 PRESSURES[Z,Y]= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
END I	1	150.00	5287.0									
	2	150.00	2570.8									
	3	150.00	1370.0									
END J	1	150.00	1234.5									
	2	150.00	3676.6									
	3	150.00	4010.9									

EL= 143 NODES= 64 65 MAT= 1 PRESSURES[Z,Y]= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
END I	1	150.00	8164.4									
	2	150.00	3449.0									
	3	150.00	1511.5									
END J	1	150.00	-1105.1									
	2	150.00	5267.0									
	3	150.00	7148.9									

EL= 144 NODES= 65 66 MAT= 1 PRESSURES[Z,Y]= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
END I	1	150.00	8800.0									
	2	150.00	4846.8									
	3	150.00	3454.8									
END J	1	150.00	-2238.7									
	2	150.00	-16.678									
	3	150.00	25220.									

EL= 145 NODES= 67 66 MAT= 1 PRESSURES[Z,Y]= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX

SARGENT & LUNDY

57

	1	150.00	2155.7									
	2	150.00	-271.73									
	3	150.00	-271.73									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-88.157									
	2	150.00	488.57									
	3	150.00	488.57									

EL= 146 NODES= 68 51 MAT= 1 PRESSURES[Z,Y]= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , -.5625 SHEAR CENTER= .8674-018, -.7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
END I	1	150.00	1028.9									
	2	150.00	332.69									
	3	150.00	332.69									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	533.05									
	2	150.00	487.29									
	3	150.00	487.29									

EL= 147 NODES= 61 70 68 69 MAT= 1 AREA= 8.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 1.229 -8.000 -5.440 PRESS= .00000 .00000
MX,MY,MXY= .20255 .32645 .81243

TOP	SX,SY,SXY,S2=	33856.	27314.	-15841.	.00000	SIG1,SIG2,SIG3=	46827.	14642.	-.12586-006
	S.I.=	46827.	SIGE=	41201.					
MID	SX,SY,SXY,S2=	33738.	26863.	-16302.	.00000	SIG1,SIG2,SIG3=	47001.	13700.	-.13063-006
	S.I.=	47001.	SIGE=	41867.					
BOT	SX,SY,SXY,S2=	33520.	26612.	-16861.	.00000	SIG1,SIG2,SIG3=	47375.	12757.	-.13600-006
	S.I.=	47375.	SIGE=	42459.					

EL= 148 NODES= 51 52 70 70 MAT= 1 AREA= 8.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 3.686 -8.000 -4.440 PRESS= .00000 .00000
MX,MY,MXY= .54802 .83091 -.40935

TOP	SX,SY,SXY,S2=	58612.	19682.	-5486.7	.00000	SIG1,SIG2,SIG3=	59370.	18923.	-.15890-006
	S.I.=	59370.	SIGE=	52530.					
MID	SX,SY,SXY,S2=	58023.	18788.	-5046.5	.00000	SIG1,SIG2,SIG3=	58861.	18150.	-.15915-006
	S.I.=	58861.	SIGE=	52018.					
BOT	SX,SY,SXY,S2=	57433.	17885.	-4605.4	.00000	SIG1,SIG2,SIG3=	57863.	17455.	-.15949-006
	S.I.=	57863.	SIGE=	51524.					

EL= 149 NODES= 52 53 70 70 MAT= 1 AREA= 8.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 6.146 -8.000 -4.440 PRESS= .00000 .00000
MX,MY,MXY= .24875 .75939 -.17069

TOP	SX,SY,SXY,S2=	56847.	19202.	-7502.7	.00000	SIG1,SIG2,SIG3=	58383.	17765.	-.15957-006
	S.I.=	58383.	SIGE=	51837.					
MID	SX,SY,SXY,S2=	56678.	18385.	-7319.1	.00000	SIG1,SIG2,SIG3=	58030.	17034.	-.18105-006
	S.I.=	58030.	SIGE=	51663.					
BOT	SX,SY,SXY,S2=	56410.	17569.	-7135.6	.00000	SIG1,SIG2,SIG3=	57879.	16299.	-.16256-006
	S.I.=	57879.	SIGE=	51502.					

EL= 150 NODES= 53 71 70 70 MAT= 1 AREA= 8.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 7.375 -8.000 -5.440 PRESS= .00000 .00000
MX,MY,MXY= 1.0341 -.18763 .44354

TOP	SX,SY,SXY,S2=	25285.	45817.	10820.	.00000	SIG1,SIG2,SIG3=	50371.	20531.	-.11723-006
	S.I.=	50371.	SIGE=	43870.					
MID	SX,SY,SXY,S2=	24173.	45819.	10443.	.00000	SIG1,SIG2,SIG3=	50036.	19956.	-.11817-006
	S.I.=	50036.	SIGE=	43827.					

SARGENT & LUNDY

3308

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BOT SX,SY,SXY,S2=  23061.        46021.        9966.4        .00000        SIG1,SIG2,SIG3=  49744.        19338.        -.11945-006
    S.I.=  49744.        SIGE=  43433.

EL=  151  NODES=  53   72   71   71        MAT=  1  AREA=  9.83        TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  11.08        -8.000        -5.440        PRESS=  .00000        .00000
MX,MY,MXY=  .31317        .80534        .62612
TOP SX,SY,SXY,S2=  22823.        40123.        -5819.3        .00000        SIG1,SIG2,SIG3=  44525.        18221.        -.10334-006
    S.I.=  44525.        SIGE=  38771.
MID SX,SY,SXY,S2=  22288.        39257.        -10495.        .00000        SIG1,SIG2,SIG3=  44268.        17276.        -.10804-006
    S.I.=  44268.        SIGE=  38643.
BOT SX,SY,SXY,S2=  21848.        38391.        -11170.        .00000        SIG1,SIG2,SIG3=  44039.        16301.        -.10897-006
    S.I.=  44039.        SIGE=  38566.

EL=  152  NODES=  53   54   72   72        MAT=  1  AREA=  9.83        TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  13.52        -8.000        -4.440        PRESS=  .00000        .00000
MX,MY,MXY=  .21789        .83094        -.30355
TOP SX,SY,SXY,S2=  51329.        28727.        -16181.        .00000        SIG1,SIG2,SIG3=  59772.        20284.        -.15514-006
    S.I.=  59772.        SIGE=  52648.
MID SX,SY,SXY,S2=  51094.        27834.        -15884.        .00000        SIG1,SIG2,SIG3=  59135.        19793.        -.15456-006
    S.I.=  59135.        SIGE=  52137.
BOT SX,SY,SXY,S2=  50860.        26940.        -15538.        .00000        SIG1,SIG2,SIG3=  58508.        19292.        -.15406-006
    S.I.=  58508.        SIGE=  51639.

EL=  153  NODES=  54   55   72   72        MAT=  1  AREA=  9.83        TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  15.96        -8.000        -4.440        PRESS=  .00000        .00000
MX,MY,MXY=  .14658        .85739        -.69205-001
TOP SX,SY,SXY,S2=  41857.        25705.        -17450.        .00000        SIG1,SIG2,SIG3=  52868.        14495.        -.15075-006
    S.I.=  52868.        SIGE=  47316.
MID SX,SY,SXY,S2=  41499.        24955.        -17524.        .00000        SIG1,SIG2,SIG3=  52608.        13849.        -.15226-006
    S.I.=  52608.        SIGE=  47229.
BOT SX,SY,SXY,S2=  41341.        24205.        -17599.        .00000        SIG1,SIG2,SIG3=  52347.        13200.        -.15379-006
    S.I.=  52347.        SIGE=  47194.

EL=  154  NODES=  55   73   72   72        MAT=  1  AREA=  9.83        TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  17.21        -8.000        -5.440        PRESS=  .00000        .00000
MX,MY,MXY=  1.1993        .27756-001        -.20200-001
TOP SX,SY,SXY,S2=  30557.        31291.        -20644.        .00000        SIG1,SIG2,SIG3=  51571.        10277.        -.16223-006
    S.I.=  51571.        SIGE=  47278.
MID SX,SY,SXY,S2=  29267.        31261.        -20686.        .00000        SIG1,SIG2,SIG3=  50954.        9574.5        -.16258-006
    S.I.=  50954.        SIGE=  46805.
BOT SX,SY,SXY,S2=  27978.        31231.        -20687.        .00000        SIG1,SIG2,SIG3=  50356.        8853.3        -.16305-006
    S.I.=  50356.        SIGE=  46565.

EL=  155  NODES=  55   74   73   73        MAT=  1  AREA=  9.83        TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  20.80        -8.000        -5.440        PRESS=  .00000        .00000
MX,MY,MXY=  .80191        .43600        .42178
TOP SX,SY,SXY,S2=  1820.8        43320.        -320.08        .00000        SIG1,SIG2,SIG3=  43323.        1818.4        -.16305-006
    S.I.=  43323.        SIGE=  42443.
MID SX,SY,SXY,S2=  858.59        42851.        -773.58        .00000        SIG1,SIG2,SIG3=  42866.        844.31        -.16469-006
    S.I.=  42866.        SIGE=  41401.
BOT SX,SY,SXY,S2=  86.338        42382.        -1227.1        .00000        SIG1,SIG2,SIG3=  42416.        80.757        -.16640-006
    S.I.=  42416.        SIGE=  42388.

EL=  156  NODES=  55   56   74   74        MAT=  1  AREA=  9.83        TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  23.35        -8.000        -4.440        PRESS=  .00000        .00000
MX,MY,MXY=  -.62681-001        .68401        .37201
TOP SX,SY,SXY,S2=  22435.        277.68        -17383.        .00000        SIG1,SIG2,SIG3=  31978.        .32405-006  -9264.9
    S.I.=  41243.        SIGE=  37479.
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MID SX,SY,SXY,S2=  22803.        -466.56        -17793.        .00000        SIG1,SIG2,SIG3=  32195.        33279-006  -10181.
    S.I.=  42355.        SIGE=  38300.
BOT SX,SY,SXY,S2=  22570.        -1214.8        -18193.        .00000        SIG1,SIG2,SIG3=  32412.        .34155-006  -11057.
    S.I.=  43470.        SIGE=  39131.

EL=  157  NODES=  56   57   74   74        MAT=  1  AREA=  9.83        TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  25.81        -8.000        -4.440        PRESS=  .00000        .00000
MX,MY,MXY=  .53345        .99598        .31873
TOP SX,SY,SXY,S2=  -1298.0        -7031.8        -4023.3        .00000        SIG1,SIG2,SIG3=  776.84        .77841-007  -9104.8
    S.I.=  9881.6        SIGE=  8517.0
MID SX,SY,SXY,S2=  -1869.6        -7780.2        -4363.8        .00000        SIG1,SIG2,SIG3=  445.42        .83820-007  -10095.
    S.I.=  10541.        SIGE=  10325.
BOT SX,SY,SXY,S2=  -2443.2        -8528.6        -4704.4        .00000        SIG1,SIG2,SIG3=  118.88        .88041-007  -11089.
    S.I.=  11205.        SIGE=  11147.

EL=  158  NODES=  57   75   74   74        MAT=  1  AREA=  9.83        TTOP,TBOT=  150.0  150.0        *                     QUAD SHELL  63
XC,YC,ZC=  27.04        -8.000        -5.440        PRESS=  .00000        .00000
MX,MY,MXY=  .50808        .41657        -.34854
TOP SX,SY,SXY,S2=  -80420.        -11561.        20503.        .00000        SIG1,SIG2,SIG3=  -.10483-012  -8290.3        -88091.
    S.I.=  88091.        SIGE=  83125.
MID SX,SY,SXY,S2=  -80957.        -12405.        20878.        .00000        SIG1,SIG2,SIG3=  -.70227-013  -8851.7        -88824.
    S.I.=  88824.        SIGE=  83741.
BOT SX,SY,SXY,S2=  -81513.        -12857.        21253.        .00000        SIG1,SIG2,SIG3=  -.35351-013  -8810.8        -87559.
    S.I.=  87559.        SIGE=  84380.

EL=  159  NODES=  57   76   75   75        MAT=  1  AREA=  10.7        TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  28.50        -8.667        -5.440        PRESS=  .00000        .00000
MX,MY,MXY=  .39013        -.16084        .18125
TOP SX,SY,SXY,S2=  -43191.        -59759.        -30625.        .00000        SIG1,SIG2,SIG3=  .00000        -18926.        -82726.
    S.I.=  82726.        SIGE=  76075.
MID SX,SY,SXY,S2=  -42310.        -59586.        -30788.        .00000        SIG1,SIG2,SIG3=  .10337-012  -18862.        -82835.
    S.I.=  82835.        SIGE=  76267.
BOT SX,SY,SXY,S2=  -42730.        -59413.        -30971.        .00000        SIG1,SIG2,SIG3=  .00000        -18886.        -83147.
    S.I.=  83147.        SIGE=  76464.

EL=  160  NODES=  57   58   76   76        MAT=  1  AREA=  10.7        TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  28.50        -4.000        -4.440        PRESS=  .00000        .00000
MX,MY,MXY=  .62608        .91326        -.15274-001
TOP SX,SY,SXY,S2=  -8608.5        -15720.        -12984.        .00000        SIG1,SIG2,SIG3=  854.96        .20930-006  -25863.
    S.I.=  28838.        SIGE=  26317.
MID SX,SY,SXY,S2=  -10282.        -16702.        -12948.        .00000        SIG1,SIG2,SIG3=  -.78778-012  -152.30        -28831.
    S.I.=  28831.        SIGE=  28756.
BOT SX,SY,SXY,S2=  -10855.        -17684.        -12931.        .00000        SIG1,SIG2,SIG3=  -.15338-013  -857.80        -27881.
    S.I.=  27881.        SIGE=  27215.

EL=  161  NODES=  58   59   76   76        MAT=  1  AREA=  10.7        TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  28.50        -1.333        -4.440        PRESS=  .00000        .00000
MX,MY,MXY=  .10135        .84116        -.10399
TOP SX,SY,SXY,S2=  -4953.7        -14232.        881.72        .00000        SIG1,SIG2,SIG3=  -.81720-014  -4874.3        -14311.
    S.I.=  14311.        SIGE=  12602.
MID SX,SY,SXY,S2=  -5082.6        -15136.        873.53        .00000        SIG1,SIG2,SIG3=  .13128-013  -4869.4        -15229.
    S.I.=  15229.        SIGE=  13452.
BOT SX,SY,SXY,S2=  -5171.8        -16041.        1065.3        .00000        SIG1,SIG2,SIG3=  .00000        -5084.3        -.8148.
    S.I.=  16148.        SIGE=  14305.

EL=  162  NODES=  58   77   76   76        MAT=  1  AREA=  10.7        TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  29.50        .8674-016        -5.440        PRESS=  .00000        .00000
MX,MY,MXY=  .80818        .33940        -.84228-001
```

TOP SX,SY,SXY,SZ= 1337.8 -3190.4 -3846.8 .00000 SIG1,SIG2,SIG3= 3637.5 .70144-007 -5390.0
S.I.= 6827.4 SIGE= 7786.7
MID SX,SY,SXY,SZ= 682.88 -3555.4 -3745.5 .00000 SIG1,SIG2,SIG3= 2887.2 .67626-007 -5739.7
S.I.= 8606.9 SIGE= 7590.9
BOT SX,SY,SXY,SZ= 27.843 -3820.3 -3844.2 .00000 SIG1,SIG2,SIG3= 2198.3 .65129-007 -6090.8
S.I.= 8289.1 SIGE= 7437.7

EL= 183 NODES= 59 76 77 77 MAT= 1 AREA= 10.7 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 29.50 4.000 -5.440 PRESS= .00000 .00000
MX,MY,MXY= .36186 .42361 .11482
TOP SX,SY,SXY,SZ= 3846.3 -3567.4 2357.0 .00000 SIG1,SIG2,SIG3= 4617.4 .62668-007 -3358.5
S.I.= 7975.9 SIGE= 6936.0
MID SX,SY,SXY,SZ= 3457.4 -3042.9 2233.6 .00000 SIG1,SIG2,SIG3= 4150.9 .61972-007 -3736.4
S.I.= 7887.3 SIGE= 6833.7
BOT SX,SY,SXY,SZ= 3068.5 -3488.4 2110.1 .00000 SIG1,SIG2,SIG3= 3688.1 .61333-007 -4118.0
S.I.= 7806.0 SIGE= 6783.8

EL= 184 NODES= 59 60 76 76 MAT= 1 AREA= 10.7 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 29.50 5.667 -4.440 PRESS= .00000 .00000
MX,MY,MXY= -.79290-001 .20052 .16944
TOP SX,SY,SXY,SZ= -558.98 -3536.7 4391.1 .00000 SIG1,SIG2,SIG3= 2588.8 .72881-007 -8584.4
S.I.= 8273.2 SIGE= 8267.8
MID SX,SY,SXY,SZ= -473.73 -3752.3 4208.8 .00000 SIG1,SIG2,SIG3= 2403.8 .70875-007 -8829.8
S.I.= 9033.7 SIGE= 8103.7
BOT SX,SY,SXY,SZ= -388.47 -3967.9 4026.7 .00000 SIG1,SIG2,SIG3= 2228.3 .69245-007 -8584.7
S.I.= 8413.0 SIGE= 7937.0

EL= 185 NODES= 60 61 76 76 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 26.27 8.000 -4.440 PRESS= .00000 .00000
MX,MY,MXY= -.11818 -.17169 .23076
TOP SX,SY,SXY,SZ= 889.78 -3540.2 1360.8 .00000 SIG1,SIG2,SIG3= 1069.8 .39521-007 -3940.2
S.I.= 5030.0 SIGE= 4583.3
MID SX,SY,SXY,SZ= 849.12 -3355.4 1123.5 .00000 SIG1,SIG2,SIG3= 1130.5 .37457-007 -3636.8
S.I.= 4787.3 SIGE= 4314.6
BOT SX,SY,SXY,SZ= 1008.5 -3170.6 886.10 .00000 SIG1,SIG2,SIG3= 1188.6 .35666-007 -3350.7
S.I.= 4638.3 SIGE= 4077.1

EL= 186 NODES= 61 76 76 76 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 27.04 8.000 -5.440 PRESS= .00000 .00000
MX,MY,MXY= .10533 -.89883-001 -.31392
TOP SX,SY,SXY,SZ= 181.28 150.33 -1807.0 .00000 SIG1,SIG2,SIG3= 1952.8 .28396-007 -1651.2
S.I.= 3614.0 SIGE= 3133.7
MID SX,SY,SXY,SZ= 47.998 225.47 -1469.4 .00000 SIG1,SIG2,SIG3= 1608.9 .23103-007 -1335.4
S.I.= 2944.2 SIGE= 2553.4
BOT SX,SY,SXY,SZ= -65.262 300.61 -1131.8 .00000 SIG1,SIG2,SIG3= 1264.3 .18018-007 -1028.8
S.I.= 2293.2 SIGE= 1989.4

EL= 187 NODES= 61 80 76 76 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 23.36 8.000 -5.440 PRESS= .00000 .00000
MX,MY,MXY= .33672 -.41093 .10459
TOP SX,SY,SXY,SZ= 2615.1 -1432.8 11.185 .00000 SIG1,SIG2,SIG3= 2615.1 .30232-007 -1232.8
S.I.= 3847.7 SIGE= 3403.2
MID SX,SY,SXY,SZ= 2253.0 -790.75 -101.27 .00000 SIG1,SIG2,SIG3= 2256.4 .23968-007 -784.12
S.I.= 3050.5 SIGE= 2741.1
BOT SX,SY,SXY,SZ= 1890.9 -348.90 -213.73 .00000 SIG1,SIG2,SIG3= 1911.2 .17916-007 -388.11
S.I.= 2280.3 SIGE= 2118.9

EL= 188 NODES= 61 62 80 80 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63

SARGENT & LUNDY ENGINEERS

XC,YC,ZC= 20.90 8.000 -4.440 PRESS= .00000 .00000
MX,MY,MXY= .15272 .28843 .20800
TOP SX,SY,SXY,SZ= 1719.5 1757.5 1335.6 .00000 SIG1,SIG2,SIG3= 3078.2 396.82 -.10526-007
S.I.= 3078.2 SIGE= 2889.5
MID SX,SY,SXY,SZ= 1555.3 1468.9 1116.9 .00000 SIG1,SIG2,SIG3= 2628.8 395.36 -.87744-008
S.I.= 2626.6 SIGE= 2455.2
BOT SX,SY,SXY,SZ= 1391.1 1180.3 892.25 .00000 SIG1,SIG2,SIG3= 2184.1 387.22 -.70583-008
S.I.= 2184.1 SIGE= 2018.6

EL= 189 NODES= 62 63 80 80 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 18.44 8.000 -4.440 PRESS= .00000 .00000
MX,MY,MXY= .11848 .23948 .23216
TOP SX,SY,SXY,SZ= 2958.2 2108.7 1596.8 .00000 SIG1,SIG2,SIG3= 4186.2 881.67 -.12982-007
S.I.= 4186.2 SIGE= 3822.4
MID SX,SY,SXY,SZ= 2833.0 1852.2 1347.3 .00000 SIG1,SIG2,SIG3= 3776.3 908.85 -.11285-007
S.I.= 3776.3 SIGE= 3413.9
BOT SX,SY,SXY,SZ= 2707.7 1594.7 1097.8 .00000 SIG1,SIG2,SIG3= 3381.8 920.58 -.95893-008
S.I.= 3381.8 SIGE= 3028.4

EL= 170 NODES= 63 81 80 80 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 17.21 8.000 -5.440 PRESS= .00000 .00000
MX,MY,MXY= .62155 .21852 -.35297
TOP SX,SY,SXY,SZ= 2621.5 2462.5 -1514.7 .00000 SIG1,SIG2,SIG3= 4058.8 1025.2 -.11817-007
S.I.= 4058.8 SIGE= 3655.6
MID SX,SY,SXY,SZ= 1953.2 2227.5 -1135.2 .00000 SIG1,SIG2,SIG3= 3233.8 946.95 -.89840-008
S.I.= 3233.8 SIGE= 2879.6
BOT SX,SY,SXY,SZ= 1284.8 1992.6 -755.83 .00000 SIG1,SIG2,SIG3= 2473.1 804.33 -.65559-008
S.I.= 2473.1 SIGE= 2184.9

EL= 171 NODES= 63 82 81 81 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 13.52 8.000 -5.440 PRESS= .00000 .00000
MX,MY,MXY= .66896 -.85148-001 .20878
TOP SX,SY,SXY,SZ= 5459.5 1430.0 79.059 .00000 SIG1,SIG2,SIG3= 4461.6 1427.9 -.11918-007
S.I.= 4461.6 SIGE= 3948.4
MID SX,SY,SXY,SZ= 3739.2 1359.9 -145.43 .00000 SIG1,SIG2,SIG3= 3748.0 1351.1 -.94167-008
S.I.= 3748.0 SIGE= 3287.7
BOT SX,SY,SXY,SZ= 3018.8 1288.9 -359.92 .00000 SIG1,SIG2,SIG3= 3084.6 1214.0 -.73680-008
S.I.= 3094.6 SIGE= 2700.7

EL= 172 NODES= 63 64 82 82 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 11.06 8.000 -4.440 PRESS= .00000 .00000
MX,MY,MXY= .14818 .82250 .31971
TOP SX,SY,SXY,SZ= 3881.3 2529.3 1287.8 .00000 SIG1,SIG2,SIG3= 4659.7 1750.9 -.11428-007
S.I.= 4659.7 SIGE= 4076.7
MID SX,SY,SXY,SZ= 3722.0 1537.4 843.99 .00000 SIG1,SIG2,SIG3= 4073.4 1186.0 -.11343-007
S.I.= 4073.4 SIGE= 3628.8
BOT SX,SY,SXY,SZ= 3562.6 545.44 400.22 .00000 SIG1,SIG2,SIG3= 3877.7 430.43 -.12757-007
S.I.= 3677.7 SIGE= 3482.4

EL= 173 NODES= 64 65 82 82 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 63
XC,YC,ZC= 8.604 8.000 -4.440 PRESS= .00000 .00000
MX,MY,MXY= .45801-001 1.2276 .10463
TOP SX,SY,SXY,SZ= 4084.5 2945.3 851.99 .00000 SIG1,SIG2,SIG3= 4524.3 2485.6 -.80091-008
S.I.= 4524.3 SIGE= 3924.5
MID SX,SY,SXY,SZ= 4015.3 1625.4 738.48 .00000 SIG1,SIG2,SIG3= 4225.6 1415.1 -.11041-007
S.I.= 4225.6 SIGE= 3726.4
BOT SX,SY,SXY,SZ= 3986.0 305.40 626.87 .00000 SIG1,SIG2,SIG3= 4070.4 201.00 -.15201-007
S.I.= 4070.4 SIGE= 3973.6

SARGENT & LUNDY ENGINEERS

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EL= 174  NODES= 65   83   82   82        MAT= 1  AREA= 9.83        TTOP,TBOT= 150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=  7.375       8.000      -5.440       PRESS=  .00000          .00000
MX,MY,MXY=    1.2882          1.0139        - .67640
TOP SX,SY,SXY,SZ=  2553.4        4283.4       -1077.1          .00000       SIG1,SIG2,SIG3=  4799.6       2037.0      - .10854-007
    S.I.=  4799.6        SIGE=  4172.6
MID SX,SY,SXY,SZ=  1168.1        3193.2        -349.77         .00000       SIG1,SIG2,SIG3=  3251.9       1109.4      - .84162-008
    S.I.=  3251.9        SIGE=  2863.2
BOT SX,SY,SXY,SZ= -217.09        2103.0         377.53         .00000       SIG1,SIG2,SIG3=  2182.6       .19170-007  -276.97
    S.I.=  2439.8        SIGE=  2313.8

EL= 175  NODES= 65   84   83   83        MAT= 1  AREA= 9.83        TTOP,TBOT= 150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=  3.688       8.000      -5.440       PRESS=  .00000          .00000
MX,MY,MXY=    1.0546          1.0517        - .66716-001
TOP SX,SY,SXY,SZ=  4020.0        2869.0       -1088.0          .00000       SIG1,SIG2,SIG3=  4680.7       2228.3      - .96345-008
    S.I.=  4680.7        SIGE=  4055.2
MID SX,SY,SXY,SZ=  2886.1        1758.2        -994.76         .00000       SIG1,SIG2,SIG3=  3465.6       1178.8      - .85847-008
    S.I.=  3465.6        SIGE=  3052.1
BOT SX,SY,SXY,SZ=  1752.2         627.38       -901.52         .00000       SIG1,SIG2,SIG3=  2252.3        127.22     - .83486-008
    S.I.=  2252.3        SIGE=  2181.5

EL= 176  NODES= 65   66   84   84        MAT= 1  AREA= 9.83        TTOP,TBOT= 150.0  150.0                          QUAD SHELL  62
XC,YC,ZC=  1.229       8.000      -4.440       PRESS=  .00000          .00000
MX,MY,MXY=    .19376          2.9402          .59715
TOP SX,SY,SXY,SZ=  4206.8        3867.4         856.04         .00000       SIG1,SIG2,SIG3=  4917.9       3176.3      - .88421-008
    S.I.=  4917.9        SIGE=  4319.0
MID SX,SY,SXY,SZ=  3996.4         725.96        213.98         .00000       SIG1,SIG2,SIG3=  4012.4        712.03     - .12988-007
    S.I.=  4012.4        SIGE=  3708.0
BOT SX,SY,SXY,SZ=  3790.1       -2435.5        -428.13         .00000       SIG1,SIG2,SIG3=  3819.6       .49376-007  -2464.8
    S.I.=  6284.2        SIGE=  5484.3


EL= 177  NODES=  69   70  MAT= 1  PRESSURES(Z,Y)=    .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID=   .0000        .0000       SHEAR CENTER=   .4844        .4844        AREA=  .4844       J=  .2523-002  IW=  .5700-038
 PRINCIPLE M OF I:        IYP=  .1894          IZP=  .1894        THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      40862.
         2   150.00      37280.
         3   150.00      55943.
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      39723.
         2   150.00      39186.
         3   150.00      53471.
FORCES ON MEMBER AT NODE    69  -20775.4        -85.0652       -54.5493        -6.35586        340.412        -1814.72
                            70   20775.4         85.0652        54.5493         6.35586       -52.5449         1396.48


EL= 178  NODES=  70   71  MAT= 1  PRESSURES(Z,Y)=    .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID=   .0000        .0000       SHEAR CENTER=   .4844        .4844        AREA=  .4844       J=  .2523-002  IW=  .5700-038
 PRINCIPLE M OF I:        IYP=  .1894          IZP=  .1894        THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      35396.
         2   150.00      34861.
         3   150.00      49151.
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      35592.
         2   150.00      35301.
         3   150.00      46077.
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SARGENT & LUNDY

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FORCES ON MEMBER AT NODE    70  -18681.1        -89.7500       -24.7392        -10.5226        52.3051        -1388.96
                            71   18681.1         89.7500        24.7392         10.5226        69.3290         955.688


EL= 179  NODES=  71   72  MAT= 1  PRESSURES(Z,Y)=    .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID=   .0000        .0000       SHEAR CENTER=   .4844        .4844        AREA=  .4844       J=  .2523-002  IW=  .5700-038
 PRINCIPLE M OF I:        IYP=  .1894          IZP=  .1894        THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      29677.
         2   150.00      30388.
         3   150.00      40180.
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      30528.
         2   150.00      31670.
         3   150.00      36748.
FORCES ON MEMBER AT NODE    71  -15816.5        -83.3442       -8.54672        -7.80201       -69.5408        -955.241
                            72   15816.5         83.3442        8.54672         7.80201        111.582         498.298


EL= 180  NODES=  72   73  MAT= 1  PRESSURES(Z,Y)=    .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID=   .0000        .0000       SHEAR CENTER=   .4844        .4844        AREA=  .4844       J=  .2523-002  IW=  .5700-038
 PRINCIPLE M OF I:        IYP=  .1894          IZP=  .1894        THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      20348.
         2   150.00      21498.
         3   150.00      26878.
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      21668.
         2   150.00      22717.
         3   150.00      22818.
FORCES ON MEMBER AT NODE    72  -10885.2        -98.9878        1.99490        -2.23184       -112.267        -496.655
                            73   10885.2         98.9878       -1.99490         2.23184        102.458         8.86801


EL= 181  NODES=  73   74  MAT= 1  PRESSURES(Z,Y)=    .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID=   .0000        .0000       SHEAR CENTER=   .4844        .4844        AREA=  .4844       J=  .2523-002  IW=  .5700-038
 PRINCIPLE M OF I:        IYP=  .1894          IZP=  .1894        THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      8964.2
         2   150.00      11015.
         3   150.00      11116.
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      11559.
         2   150.00      12172.
         3   150.00      7208.5
FORCES ON MEMBER AT NODE    73  -5220.55        -100.715        8.70294        2.81884        -102.700        -10.0831
                            74   5220.55         100.715       -8.70294       -2.81884         58.8101        -445.090


EL= 182  NODES=  74   75  MAT= 1  PRESSURES(Z,Y)=    .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID=   .0000        .0000       SHEAR CENTER=   .4844        .4844        AREA=  .4844       J=  .2523-002  IW=  .5700-038
 PRINCIPLE M OF I:        IYP=  .1894          IZP=  .1894        THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      12661.
         2   150.00      13277.
         3   150.00      8309.4
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      14148.
```

SARGENT & LUNDY

3308

```
        2   150.00     14471.
        3   150.00     4435.3
FORCES ON MEMBER AT NODE   74  -5754.78       -100.769        5.80263        6.08404       -60.2372        485.600
                           75   5754.78        100.769       -5.80263       -6.08404        31.7076       -981.049


EL=  183  NODES=    75    76  MAT=   1  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM   24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER=    .4844      ,    .4844      AREA=    .4844      J=   .2523-002  IW=   .5700-038
 PRINCIPLE M OF I:        IYP=    .1894        IZP=    .1894        THETAP=    .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     7889.9
        2   150.00     8570.5
        3   150.00     -1485.0
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     7451.2
        2   150.00     7581.0
        3   150.00     1053.0
FORCES ON MEMBER AT NODE   75  -2865.81        84.2914        8.26292       -.750695-001   -55.7590        981.051
                           76   2865.81       -84.2914       -8.26292        .750695-001    12.6900       -638.163


EL=  184  NODES=    76    77  MAT=   1  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM   24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER=    .4844      ,    .4844      AREA=    .4844      J=   .2523-002  IW=   .5700-038
 PRINCIPLE M OF I:        IYP=    .1894        IZP=    .1894        THETAP=    .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     -2237.4
        2   150.00     -2101.2
        3   150.00     -8601.2
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     -3051.9
        2   150.00     -3067.8
        3   150.00     -5813.4
FORCES ON MEMBER AT NODE   76   1821.36        88.8155        2.05381        .965563       -13.3109        835.425
                           77  -1821.36       -88.8155       -2.05381       -.965563        2.35723       -288.409


EL=  185  NODES=    77    78  MAT=   1  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM   24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER=    .4844      ,    .4844      AREA=    .4844      J=   .2523-002  IW=   .5700-038
 PRINCIPLE M OF I:        IYP=    .1894        IZP=    .1894        THETAP=    .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     -791.70
        2   150.00     -767.07
        3   150.00     -3511.6
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     -1573.4
        2   150.00     -1786.0
        3   150.00     -868.17
FORCES ON MEMBER AT NODE   77   706.884        71.0160        4.56886        .973844       -2.40758        268.304
                           78  -706.884       -71.0160       -4.56886       -.973844       -21.9597        110.448


EL=  186  NODES=    78    79  MAT=   1  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM   24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER=    .4844      ,    .4844      AREA=    .4844      J=   .2523-002  IW=   .5700-038
 PRINCIPLE M OF I:        IYP=    .1894        IZP=    .1894        THETAP=    .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     158.88
        2   150.00     -146.56
        3   150.00     878.42
```



```
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     223.17
        2   150.00     205.78
        3   150.00     209.53
FORCES ON MEMBER AT NODE   78  -102.237       -22.2937       -5.72962        12.8156        29.8693       -109.878
                           79   102.237        22.2937        5.72962       -12.8156       -1.69870        .365359


EL=  187  NODES=    79    80  MAT=   1  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM   24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER=    .4844      ,    .4844      AREA=    .4844      J=   .2523-002  IW=   .5700-038
 PRINCIPLE M OF I:        IYP=    .1894        IZP=    .1894        THETAP=    .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     1053.6
        2   150.00     1038.6
        3   150.00     1048.0
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     1276.8
        2   150.00     1355.5
        3   150.00     184.96
FORCES ON MEMBER AT NODE   79  -505.308       -23.4806       -1.89802        12.5851        1.65608       -.918391
                           80   505.308        23.4806        1.89802       -12.5851        7.68079       -114.428


EL=  188  NODES=    80    81  MAT=   1  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM   24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER=    .4844      ,    .4844      AREA=    .4844      J=   .2523-002  IW=   .5700-038
 PRINCIPLE M OF I:        IYP=    .1894        IZP=    .1894        THETAP=    .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     1867.6
        2   150.00     1947.1
        3   150.00     804.58
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     2255.0
        2   150.00     2225.0
        3   150.00     -138.64
FORCES ON MEMBER AT NODE   80  -795.146       -24.2787        2.17757        12.7932       -7.77287        111.690
                           81   795.146        24.2787       -2.17757       -12.7932       -2.93342       -231.065


EL=  189  NODES=    81    82  MAT=   1  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM   24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER=    .4844      ,    .4844      AREA=    .4844      J=   .2523-002  IW=   .5700-038
 PRINCIPLE M OF I:        IYP=    .1894        IZP=    .1894        THETAP=    .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     2896.2
        2   150.00     2856.5
        3   150.00     508.48
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     3519.2
        2   150.00     3053.9
        3   150.00     -489.25
FORCES ON MEMBER AT NODE   81  -1106.52       -23.5633        8.65893        12.3851        2.80686        230.518
                           82   1106.52        23.5633       -8.65893       -12.3851       -45.4847       -348.371


EL=  190  NODES=    82    83  MAT=   1  PRESSURES(Z,Y)=     .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM   24
 CENTROID=    .0000      ,    .0000      SHEAR CENTER=    .4844      ,    .4844      AREA=    .4844      J=   .2523-002  IW=   .5700-038
 PRINCIPLE M OF I:        IYP=    .1894        IZP=    .1894        THETAP=    .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00     4068.4
```

```
        2   150.00     3603.3
        3   150.00     95.881
END J  PT     TEMP       SIGX          PT     TEMP       SIGX          PT     TEMP       SIGX          PT     TEMP       SIGX
        1   150.00     4828.8
        2   150.00     3718.4
        3   150.00    -894.77
FORCES ON MEMBER AT NODE   82   -1376.94      -21.9865      12.8296      9.82274      45.4688      342.877
                           83    1376.94       21.9865     -12.8296     -9.82274     -108.545     -450.977


EL=  191  NODES=   83   84  MAT=  1  PRESSURES(I,J)=    .00000        .00000     AVE  TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=    .0000        .0000      SHEAR CENTER=    .4844        .4844      AREA=  .4844      J=  .2523-002  IW=  .5700-038
 PRINCIPLE M OF I:        IYP=  .1884     IZP=  .1884     THETAP=  .0000
END I  PT     TEMP       SIGX          PT     TEMP       SIGX          PT     TEMP       SIGX          PT     TEMP       SIGX
        1   150.00     5026.0
        2   150.00     3915.3
        3   150.00    -893.37
END J  PT     TEMP       SIGX          PT     TEMP       SIGX          PT     TEMP       SIGX          PT     TEMP       SIGX
        1   150.00     5726.4
        2   150.00     3867.7
        3   150.00    -1298.7
FORCES ON MEMBER AT NODE   83   -1472.89      -11.0909      14.8730      4.09050      108.577      450.534
                           84    1472.89       11.0909     -14.8730     -4.09050     -181.702     -505.065

  *** ELEM  STRESS CALC.  TIMES
 TYPE  NUMBER  STIF  TOTAL CP   AVE CP

  1       30    24      4.384      .145
  2       80    48      8.601      .143
  3       35    24      4.810      .137
  4       64    63     12.305      .186

*** LOAD STEP     1   ITER     1  COMPLETED.   TIME=    .000000      TIME INC=    .000000     NEW TRIANG MATRIX  CUM. ITER =     1

 INTEGER STORAGE REQUIREMENTS FOR STRESS & D FORCE CALCULATIONS   CP=   153.654  TIME= 11.9853
 MEMORY REQUIRED=     2216  MEMORY AVAILABLE= 4002000


 *** STORAGE REQUIREMENT SUMMARY
MAXIMUM MEMORY USED          =    13529
MAXIMUM MEMORY AVAILABLE     = 4002000


  *** PROBLEM STATISTICS
 NO. OF ACTIVE DEGREES OF FREEDOM =     441
 R.M.S. WAVEFRONT SIZE =     87.9


 *** ANSYS BINARY FILE STATISTICS
BUFFER SIZE USED= 1232
PORT DATA WRITTEN ON FILE12
RESTART DATA WRITTEN ON FILE 3   (  309199 WORDS)
TRIANGULARIZED MATRIX WRITTEN ON FILE11   (   81078 WORDS)

END OF INPUT ENCOUNTERED ON FILE27

***** INPUT FILE SWITCHED FROM FILE27 TO FILE18
```

SARGENT & LUNDY

```
          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C      SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE                    11.9856   1/18/86 CP=     153.980

          ***** ANSYS RUN TIME ESTIMATOR *****


***** ANSYS RUN TIME ESTIMATOR *****

COMPUTER = UNIVAC 1100              NUMBER OF MASTER DOF =    0
ANALYSIS TYPE =  0                  RMS WAVE FRONT =   88
NUMBER OF NODES =      74           TOTAL NO. OF ITERATIONS =      1
MAX. DOF PER NODE =  6              STIFF. MATRIX SAVE KEY = 0
NUMBER OF MATRICES = 1              ELEM. MATRIX SAVE KEY = 0
NUMBER OF STRESS SOLUTIONS=     1   ROTATED NODE FRACTION=  .000

  STIF  NUMBER    FORM. TIME  STRESS TIME     NAME
    24      85          .312          .995   PLASTIC THIN-WALL BEAM, 3-D
    48      40          .523          .536   PLASTIC TRIANGULAR SHELL
    63      86         1.084          .627   QUAD. FLAT SHELL


  ANALYSIS PHASE          FIRST      SUBSEQUENT
                        ITERATION    ITERATIONS       TOTAL

ELEMENT FORMULATION         22.48         22.48       22.48
WAVE FRONT SOLUTION          9.34          9.34        9.34
BACK SUBSTITUTION             .71           .71         .71
ELEMENT STRESSES            25.08         25.08       25.08

    TOTAL TIME (SEC)        57.60         57.60       57.60


***** ROUTINE COMPLETED *****  CP =       154.097

END OF INPUT ENCOUNTERED ON FILE18


***** RUN COMPLETED *****  CP=      154.2420   TIME=   11.9856

$PMD,LEAP
PMD NOT ALLOWED
```

3308

SARGENT & LUNDY

```
@SLXOT  DPSS*095ABSOLUTES ANS095185410/PLOT33
SLXOT 2.2 SL7SR1 01/18/86 11:59:10

                PROGRAM ID ANS095185410                          PROGRAM FILE DATE FEBRUARY 1, 1984 21:41:38
                RUN ID     SJH03                                 DIVISION STATION ID  CL1453800
                     *****    PROGRAM USED IS VALIDATED ACCORDING TO GDP 4-1    *****
                                AND EXECUTED FROM CSD CONTROLLED FILES
```

SARGENT & LUNDY

```
@XOT    DPSS*095ABSOLUTES.ANS095185410/PLOT33
***** NO PLOT GENERATED *****
***** END OF PLOT33 *****

@PMD,LEAP
PMD NOT ALLOWED

@FIN
```

SARGENT & LUNDY

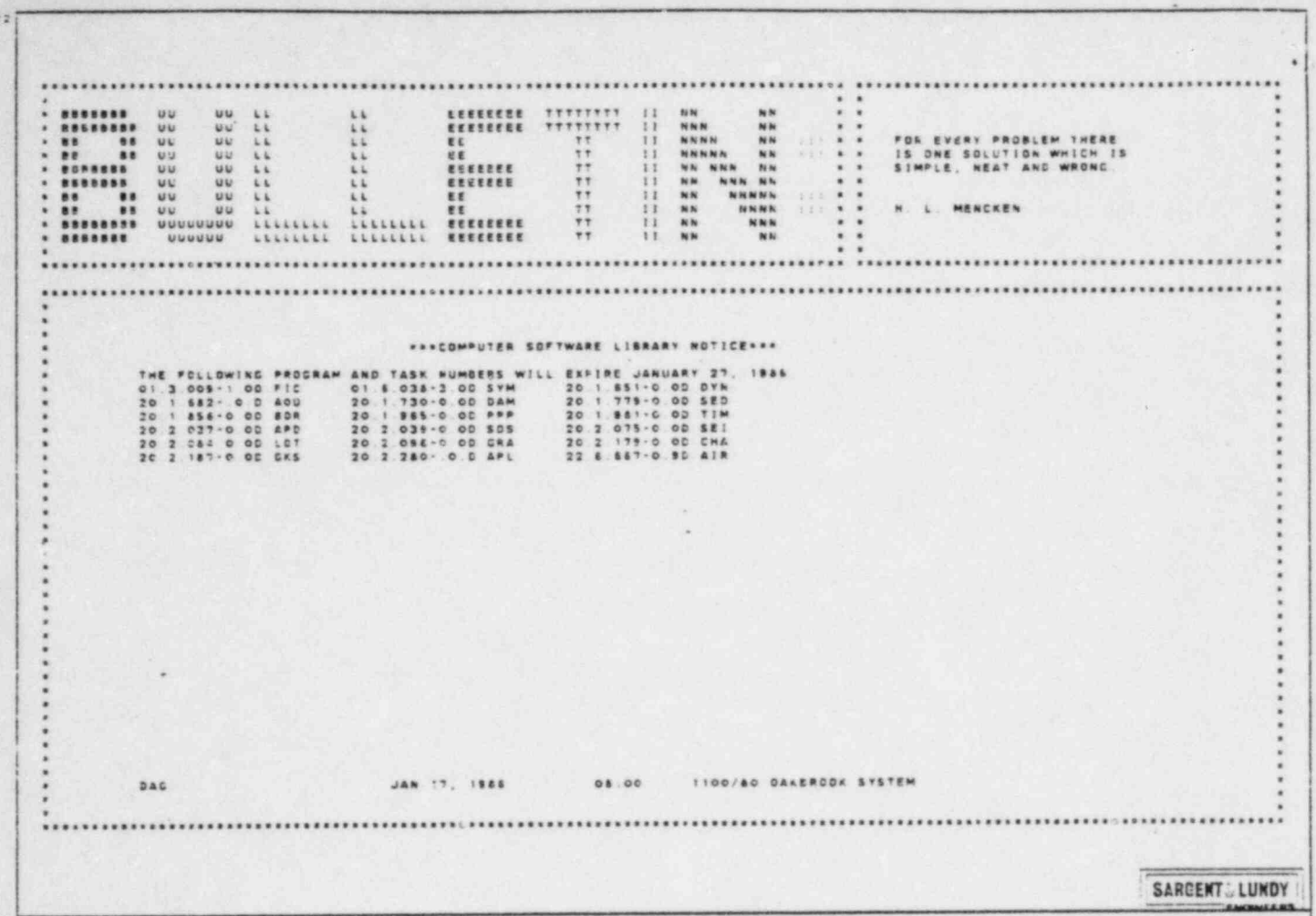
3308

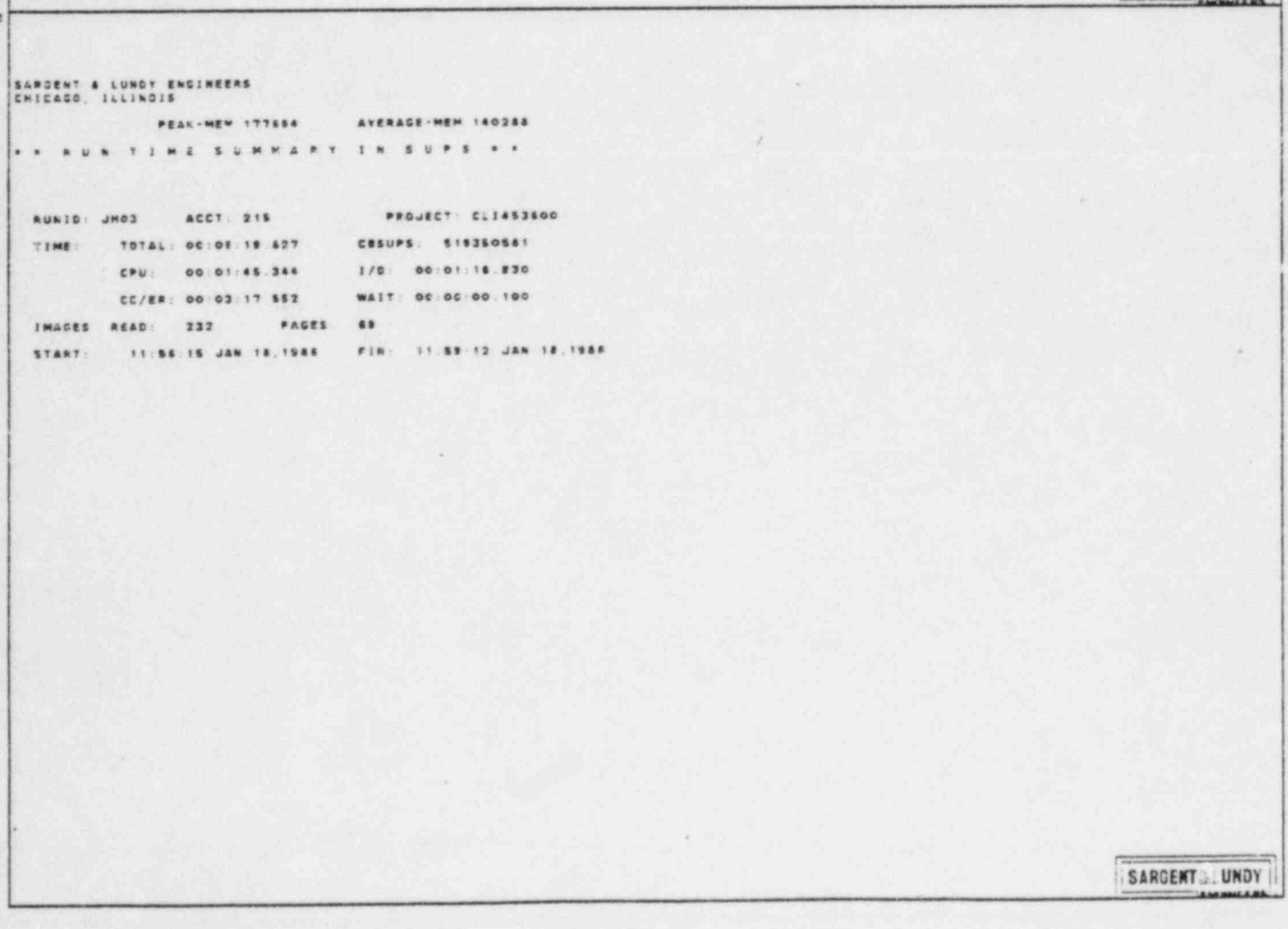
SARGENT & LUNDY

```
      CONSOLE MESSAGES :
SITE IDENTIFIER: S&L-B      SYSTEM TYPE: 1100/60A
S & L  PROGRAM NUMBER:  ANS0951854IO
*** PROGRAM ANS0951854IO IS VALIDATED ACCORDING TO GDF 4-1 ***
XQT - SYS$          * OPS$          - ANS0951854IO /              HAD       0 OVRFLW,      0 UNDFLW,      0 DIVFLT,      0 O/O FLT
*** PROGRAM ANS0951854IO/PLOT33 IS VALIDATED ACCORDING TO GDF 4-1 ***
XQT - OPS$          * OSSABSOLUTES - ANS0951854IO / PLOT33       HAD       0 OVRFLW,      0 UNDFLW,      0 DIVFLT,      0 O/O FLT
      SJH03  FIN
```

SARGENT & LUNDY

3308

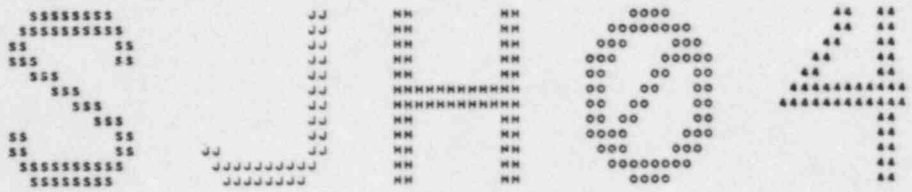

FOR EVERY PROBLEM THERE
IS ONE SOLUTION WHICH IS
SIMPLE, NEAT AND WRONG.
H. L. MENCKEN
COMPUTER SOFTWARE LIBRARY NOTICE
THE FOLLOWING PROGRAM AND TASK NUMBERS WILL EXPIRE JANUARY 27, 1986
01.3.009-1.00 FIC 01.6.038-3.00 SYM 20.1.851-0.00 DYN
20.1.682-0.00 AOU 20.1.730-0.00 DAM 20.1.779-0.00 SED
20.1.856-0.00 BDR 20.1.865-0.00 PRP 20.1.881-0.00 TIM
20.2.027-0.00 APD 20.2.039-0.00 SDS 20.2.075-0.00 SEI
20.2.084-0.00 LDT 20.2.096-0.00 CRA 20.2.179-0.00 CHA
20.2.187-0.00 GKS 20.2.280-0.0 APL 22.6.667-0.90 AIR
DAG
JAN 17, 1986
08.00
1100/60 OAKBROOK SYSTEM
SARGENT & LUNDY


SARGENT & LUNDY ENGINEERS
CHICAGO, ILLINOIS
PEAK-MEM 177664
AVERAGE-MEM 140288
** RUN TIME SUMMARY IN SUPS **
RUNID: JH03
ACCT: 215
PROJECT: CL1453600
TIME: TOTAL: 00:01:19.627
CBSUPS: 519350581
CPU: 00:01:45.344
I/O: 00:01:16.830
CC/ER: 00:03:17.552
WAIT: 00:00:00.100
IMAGES READ: 232
PAGES 69
START: 11:56:15 JAN 18,1986
FIN: 11:59:12 JAN 18,1986
SARGENT & LUNDY

2

55

```
1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890**SEQ NO: 00
```



```
* * * * * * UNIVAC 1100 TIME/SHARING EXEC --- MULTI-PROCESSOR SYSTEM --- LEV. 39R3A        SITE *     ES&L-8* * * * * *

   RUNID * SJH04          USER ID * OE8181          PART NUMBER *          INPUT DEVICE * ######          OUTPUT DEVICE * XEROX1
     FILE NAME * RSIS-SJH04  011886142116 CREATED AT:   13:48:38 JAN 18,1986              PRINTED AT:   14:54:14 JAN 18,1986

1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890**SEQ NO: 00
```

SARGENT & LUNDY

3

```
@RUN,G/N      JH04,215/OE8181,CL1453600,55,400          HAMPTON      CALLX8810
```

3308

SARGENT & LUNDY

```
@PROG ANS095185410
PROG 2R2A     $8L-8   1100/80A      (851126 0859:33) 1986 Jan 18 Sat 1348:37

@ASG,A SJH-CLINTON*EQUIPMENT
W 120133 File is already assigned.

@DELETE,C SJH-CLINTON*POSTFILE40.
FURPUR 28R3A S74711 01/18/86 13:48:38

SJH-CLINTON*POSTFILE40    IS NOT CATALOGUED OR ASSIGNED
FAC STATUS: 4000100000000

@ASG,UP SJH-CLINTON*POSTFILE40.

@USE 12,,SJH-CLINTON*POSTFILE40.
```

SARGENT & LUNDY

```
@Q
QUEUE Processor Level 7.7     (851125 1501:06) 1986 Jan 18 Sat 1348:39


PRINTS file is to be synmed to device   XEROX1
    $qqq
$ACNT*ANS095185410,$PRO*215CL1453600,$RND*SJH04  ,$USR*GE8181,$DAT*011886134838,
FICHE*3,ORIGINAL*2,LOC*30V12,LABEL*NONLINEAR THERMAL SIMULATION OF HVAC PENETRATION,XEROX*2,JDL*TWOUP,COLOR*BUFF,RTO1*1-
HAMPTON 30V12,LINEPRNT*PR,
    $qqq
END Q:
```

SARGENT & LUNDY

3108

```
@ASG,T,IL TPFS.DATA
ELT,BR2 75R20S 01/15/88 13:48:40 (->0)
      1.            00      /PREP7
      2.            00      /TITLE, HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE
      3.            00      C*** DEFINE ANALYSIS PARAMETERS
      4.            00      KAN,0
      5.            00      KAY,3,0
      6.            00      KAY,6,1
      7.            00      KAY,8,0
      8.            00      KNL,1
      9.            00      TREF,70.0
     10.            00      C*** DEFINE ELEMENTS AND PROPERTIES
     11.            00      ET,1,24,,,,,1
     12.            00      R,1,0.0,0.0,,0.0,1.9375,.125
     13.            00      RMORE,1.9375,1.9375,.125
     14.            00      ET,2,48
     15.            00      R,2,.0747
     16.            00      ET,3,24
     17.            00      R,3,0.0,0.0,,0.0,.75,.0359
     18.            00      RMORE,-.75,.75,.0359
     19.            00      ET,4,63
     20.            00      R,4,.1106
     21.            00      R,5,.0747
     22.            00      R,6,0.0,0.0,0.0,,0.0,-.75,.0359
     23.            00      RMORE,-.75,-.75,.0359
     24.            00      R,7,0.0,0.0,,0.0,1.9375,.125
     25.            00      RMORE,-1.9375,1.9375,.125
     26.            00      C*** DEFINE MATERIAL PROPERTIES
     27.            00      MPTEMP,1,100,300,600,800,1000,1300
     28.            00      MPDATA,EX,1,1,29E6,26.3E6,25.7E6,24.2E6,21.0E6,18.0E6
     29.            00      MPDATA,ALPX,1,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.6E-6,9.6E-6
     30.            00      NUXY,1,.3
     31.            00      C*** DEFINE NONLINEAR MATERIAL PROPERTIES
     32.            00      MPTEMP,1,100,300,600,800,1000,1300
     33.            00      MPDATA,EX,2,1,29E6,26.3E6,25.7E6,24.2E6,21.0E6,18.0E6
     34.            00      NUXY,2,.3
     35.            00      MPDATA,ALPX,2,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.6E-6,9.6E-6
     36.            00      NL,2,13,2
     37.            00      NL,2,19,100,300,600,800,1000,1300
     38.            00      NL,2,25,36E3,33E3,27E3,23E3,18E3,8E3
     39.            00      NL,2,31,.2,.2,.2,.2,.2,.2
     40.            00      C*** DEFINE NODES
     41.            00      N,1,0.0,-8.0,6.44  $,7,29.5,-8.0,6.44  $FILL
     42.            00      N,10,29.5,8.0,6.44  $FILL $N,16,0.0,8.0,6.44  $FILL
     43.            00      NGEN,3,16,1,16,1,0.0,0.0,-2.0  $N,49,0.0,2.67,2.44  $,50,0.0,-2.67,2.44
     44.            00      NGEN,2,16,33,50,1,0.0,0.0,-4.88
     45.            00      NGEN,2,16,51,66,1,0.0,0.0,-4.0
     46.            00      C*** DEFINE ELEMENTS
     47.            00      MAT,2
     48.            00      E,1,2,17  $EGEN,15,1,1
     49.            00      TYPE,2  $REAL,2  $MAT,2
     50.            00      E,1,2,17  $,17,2,16  $,16,2,18  $,2,3,19  $EGEN,7,2,16,18,1
     51.            00      E,31,15,16  $,16,32,31
     52.            00      E,33,17,34  $,17,18,34  $,34,18,19  $,34,19,35  $EGEN,7,2,46,49,1
     53.            00      E,47,31,48  $,31,32,48
     54.            00      TYPE,3 $REAL,3 $MAT,1
     55.            00      E,33,34,51  $EGEN,17,1,76  92,50,33,51
     56.            00      TYPE,4  $REAL,4
```

SARGENT & LUNDY

```
     57.            00      E,33,34,51,51,  $,51,34,52,52  $,34,53,52,52  $,34,35,53,53
     58.            00      EGEN,8,2,94,97,1
     59.            00      E,48,50,67,67  $,50,68,67,67  $,50,51,68,68  $,50,33,51,51
     60.            00      TYPE,3  $REAL,6
     61.            00      E,51,52,70  $EGEN,15,1,130  $E,67,68,69  $E,68,51,09
     62.            00      TYPE,4  $REAL,5
     63.            00      E,51,70,69,69  $,51,52,70,70  $,52,53,70,70  $,53,71,70,70
     64.            00      EGEN,7,2,147,150,1
     65.            00      E,65,84,83,83  $,65,66,84,84
     66.            00      TYPE,1  $REAL,7
     67.            00      E,69,70,52  $EGEN,15,1,177
     68.            00      C*** DEFINE CONSTRAINTS
     69.            00      D,1,UX,0.0,0.0,1,0,UY,ROTY,ROTZ
     70.            00      D,16,UX,0.0,0.0,16,0,ROTY,ROTZ
     71.            00      D,17,UX,0.0,0.0,33,16,UY,ROTY,ROTZ
     72.            00      D,32,UX,0.0,0.0,48,16,ROTY,ROTZ
     73.            00      D,51,UX,0.0,0.0,69,18,UY,ROTY,ROTZ
     74.            00      D,68,UX,0.0,0.0,84,16,ROTY,ROTZ
     75.            00      D,69,UZ,0.0,0.0,84,1
     76.            00      D,49,UX,0.0,0.0,0.50,1,ROTY,ROTZ
     77.            00      D,67,UX,0.0,0.0,0.68,1,ROTY,ROTZ
     78.            00      C*** DEFINE THERMAL LOADING
     79.            00      KBC,1
     80.            00      TUNIF,150.0
     81.            00      KTEMP,-1
     82.            00      T,13,180.8023  $TGEN,4,1,13
     83.            00      T,1,299.8048  $TGEN,7,1,1
     84.            00      T,10,180.5058  $T,11,180.5693  $T,12,180.8005
     85.            00      T,8,213.0804  $T,9,167.0108
     86.            00      ITER,-20,20,1
     87.            00      PRDISP,1
     88.            00      LWRITE
     89.            00      T,13,163.0488  $TGEN,4,1,13
     90.            00      T,1,334.3748  $TGEN,7,1,1
     91.            00      T,10,162.9308  $T,11,163.0083  $T,12,163.047
     92.            00      T,8,227.6125  $T,9,170.9383
     93.            00      ITER,-20,20,1
     94.            00      PRDISP,1
     95.            00      LWRITE
     96.            00      AFWRIT
     97.            00      FINISH
     98.            00      /INPUT,27
     99.            00      FINISH


@ADD,LP $RUN.

END ELT.  ERRORS: NONE.  TIME:  2.965 SEC.  IMAGE COUNT: 99


@PRT,I
FURPUR 28R3A S74T1I 01/15/88 13:48:40
CL!453800*TPFS(0),D8470,T
SJH-CLINTON*EQUIPMENT(1),D8470,ZOA  @@@@7<SYMSS$,
SYS$*PR@@OOS$JH04(1),D8470,ZXURP  @@@@7*SYMSS$,
SYS$*S$PROG$NUM$$(0),D8470,T  $PRGS,
CL!453800*$RUN(0),D8470,T  @@@@74SYMSS$.
```

SARGENT & LUNDY

3308

```
SJH-CLINTON*POSTFILE40(1),D8470,XUP  12.

@PRT,S TPFS DATA
```

SARGENT & LUNDY

```
CLI453600*TPFS(0).DATA(0)
      1       /PREP7
      2       /TITLE, HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE
      3       C*** DEFINE ANALYSIS PARAMETERS
      4       KAN,0
      5       KAY,2,0
      6       KAY,6,1
      7       KAY,8,0
      8       KNL,1
      9       TREF,70.0
     10       C*** DEFINE ELEMENTS AND PROPERTIES
     11       ET,1,24,,,,,1
     12       R,1,0.0,0.0,,0.0,1.9375,.125
     13       RMORE,1.9375,1.9375,.125
     14       ET,2,48
     15       R,2,.0747
     16       ET,3,24
     17       R,3,0.0,0.0,,0.0,.75,.0359
     18       RMORE,-.75,.75,.0359
     19       ET,4,63
     20       R,4,.1106
     21       R,5,.0747
     22       R,6,0.0,0.0,,0.0,-.75,.0359
     23       RMORE,-.75,-.75,.0359
     24       R,7,0.0,0.0,,0.0,1.9375,.125
     25       RMORE,-1.9375,1.9375,.125
     26       C*** DEFINE MATERIAL PROPERTIES
     27       MPTEMP,1,100,300,600,800,1000,1300
     28       MPDATA,EX,1,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
     29       MPDATA,ALPX,1,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.6E-6,9.6E-6
     30       NUXY,1,.3
     31       C*** DEFINE NONLINEAR MATERIAL PROPERTIES
     32       MPTEMP,1,100,300,600,800,1000,1300
     33       MPDATA,EX,2,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
     34       NUXY,2,.3
     35       MPDATA,ALPX,2,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.6E-6,9.6E-6
     36       NL,2,13,2
     37       NL,2,19,100,300,600,800,1000,1300
     38       NL,2,25,36E3,33E3,27E3,23E3,18E3,8E3
     39       NL,2,31,.2,.2,.2,.2,.2,.2
     40       C*** DEFINE NODES
     41       N,1,0.0,-8.0,6.44  $,7,29.5,-8.0,6.44  $FILL
     42       N,10,29.5,8.0,6.44  $FILL $N,15,0.0,8.0,6.44  $FILL
     43       NGEN,3,15,1,15,1,0.0,0.0,-2.0  $N,49,0.0,2.67,2.44  $,50,0.0,-2.67,2.44
     44       NGEN,2,15,33,50,1,0.0,0.0,-4.88
     45       NGEN,2,15,51,65,1,0.0,0.0,-4.0
     46       C*** DEFINE ELEMENTS
     47       MAT,2
     48       E,1,2,17  $EGEN,15,1,1
     49       TYPE,2  $REAL,2  $MAT,2
     50       E,1,2,17  $,17,2,16  $,16,2,19  $,2,3,19  $EGEN,7,2,16,19,1
     51       E,31,15,16  $,16,32,31
     52       E,33,17,34  $,17,18,34  $,34,18,19  $,34,19,35  $EGEN,7,2,48,48,1
     53       E,47,31,48  $,31,32,48
     54       TYPE,3 $REAL,3 $MAT,1
     55       E,32,34,61  $EGEN,17,1,76  $E,50,33,61
     56       TYPE,4  $REAL,4
     57       E,33,34,61,61,  $,61,34,62,62  $,34,63,62,62  $,34,35,63,63
```

SARGENT & LUNDY

3308

```
EGEN,8,2,94,87,1
E,49,50,,67,67  $,50,68,67,67  $,50,51,68,68  $,50,33,51,51
TYPE,3  $REAL,5
E,51,52,70  $EGEN,15,1,130  $E,87,68,69  $E,88,51,69
TYPE,4  $REAL,5
E,51,70,69,69  $,51,52,70,70  $,52,53,70,70  $,53,71,70,70
EGEN,7,2,147,150,1
E,65,64,63,63  $,65,66,64,64
TYPE,1  $REAL,7
E,69,70,52  $EGEN,15,1,177
C*** DEFINE CONSTRAINTS
D,1,UX,0.0,0.0,0.1,0,UY,ROTY,ROTZ
D,15,UX,0.0,0.0,0.15,0,ROTY,ROTZ
D,17,UX,0.0,0.0,0.33,15,UY,ROTY,ROTZ
D,32,UX,0.0,0.0,0.48,16,ROTY,ROTZ
D,51,UX,0.0,0.0,0.69,18,UY,ROTY,ROTZ
D,66,UX,0.0,0.0,0.84,15,ROTY,ROTZ
D,69,UZ,0.0,0.0,0.84,1
D,49,UX,0.0,0.0,0.50,1,ROTY,ROTZ
D,67,UX,0.0,0.0,0.68,1,ROTY,ROTZ
C*** DEFINE THERMAL LOADING
KBC,1
TUNIF,150.0
KTEMP,-1
T,13,160.6023  $TGEN,4,1,13
T,1,298.6048  $TGEN,7,1,1
T,10,160.5056  $T,11,160.5593  $T,12,160.6005
T,8,213.0604  $T,9,167.0108
ITER,-20,20,1
PRDISP,1
LWRITE
T,13,163.0488  $TGEN,4,1,13
T,1,334.3748  $TGEN,7,1,1
T,10,162.9306  $T,11,163.0083  $T,12,163.047
T,8,227.6125  $T,9,170.9363
ITER,-20,20,1
PRDISP,1
LWRITE
AFWRIT
FINISH
/INPUT,27
FINISH

@ASG,A OPS$*09SABSOLUTES.
W:121433 file is cataloqued as a read only file.
W:122333 a write key exists on the file.

@ADD,PL OPS$*09SABSOLUTES.ANS09S1&5410

@ASG,T  2.,///2500

@ASG,T  3.,///2500
```

SARGENT & LUNDY

```
@ASG,T  4.,///2000

@ASG,T  7.,///2000

@ASG,T  8.,///2000

@ASG,T  9.,///2000

@ASG,T  10.,///2000

@ASG,T  11.,///2300

@ASG,T  12.,///3000
W:120133 file is already assigned.
W:122633 option(s) conflict with previous assign options --
option conflict ignored.

@ASG,T  13.,///2000

@ASG,T  14.,///2000

@ASG,T  15.,///2000

@ASG,T  16.,///2000

@ASG,T  17.,///3500

@ASG,T  18.,///2000

@ASG,T  19.,///2000

@ASG,T  20.,///2000

@ASG,T  21.,///2000

@ASG,T  22.,///2000

@ASG,T  23.,///2000

@ASG,T  24.,///2000
```

SARGENT & LUNDY

3308

12

```
@ASG,T  25.,///2000

@ASG,T  30.,///2000

@ASG,A     DSANDOCU$*ANSO95185410
W:121433 file is catalogued as a read only file.
W:122333 a write key exists on the file.

@USE  31.,DSANDOCU$*ANSO95185410.
```

SARGENT & LUNDY

13

```
@SLXQT  SYS$*OPS$.ANSO95185410
SLXQT 2.2 SL7SR1 01/16/86 13:48:42


                PROGRAM ID ANSO95185410                                 PROGRAM FILE DATE JANUARY 25, 1985 13:11:25

                RUN ID     SJH04                                        DIVISION STATION ID  CL1453800

                     *****     PROGRAM USED IS VALIDATED ACCORDING TO GOP 4-1     *****
                               AND EXECUTED FROM CSD CONTROLLED FILES
```

SARGENT & LUNDY

3308

```
PXQT    SYS$*DPS$ ANSD95185410
```

SARGENT & LUNDY

```
          **********  ANSYS INPUT DATA LISTING (FILE18)  **********

          6     12    18    24    30    36    42    48    54    60    66    72    78
          V     V     V     V     V     V     V     V     V     V     V     V     V
  1   /PREPT
  2   /TITLE, HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE
  3   C*** DEFINE ANALYSIS PARAMETERS
  4   KAN,0
  5   KAY,3,0
  6   KAY,5,1
  7   KAY,6,0
  8   KNL,1
  9   TREF,70.0
 10   C*** DEFINE ELEMENTS AND PROPERTIES
 11   ET,1,24,,,,,1
 12   R,1,0.0,0.0,,0.0,1.9375,.125
 13   RMORE,1.9375,1.9375,.125
 14   ET,2,48
 15   R,2,.0747
 16   ET,3,24
 17   R,3,0.0,0.0,,0.0,.75,.0359
 18   RMORE,-.75,.75,.0359
 19   ET,4,63
 20   R,4,.1106
 21   R,5,.0747
 22   R,6,0.0,0.0,,0.0,-.75,.0359
 23   RMORE,-.75,-.75,.0359
 24   R,7,0.0,0.0,,0.0,1.9375,.125
 25   RMORE,-1.9375,1.9375,.125
 26   C*** DEFINE MATERIAL PROPERTIES
 27   MPTEMP,1,100,300,600,800,1000,1300
 28   MPDATA,EX,1,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
 29   MPDATA,ALPX,1,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.6E-6,9.6E-6
 30   NUXY,1,.3
 31   C*** DEFINE NONLINEAR MATERIAL PROPERTIES
 32   MPTEMP,1,100,300,600,800,1000,1300
 33   MPDATA,EX,2,1,29E6,28.3E6,26.7E6,24.2E6,21.0E6,18.0E6
 34   NUXY,2,.3
 35   MPDATA,ALPX,2,1,6.53E-6,7.3E-6,8.35E-6,8.9E-6,9.6E-6,9.6E-6
 36   NL,2,13,2
 37   NL,2,19,100,300,600,800,1000,1300
 38   NL,2,25,35E3,33E3,27E3,23E3,18E3,6E3
 39   NL,2,31,.2,.2,.2,.2,.2,.2
 40   C*** DEFINE NODES
 41   N,1,0.0,-6.0,6.44  $,7,29.5,-6.0,6.44  $FILL
 42   N,10,29.5,6.0,6.44  $FILL $N,16,0.0,6.0,6.44  $FILL
 43   NGEN,3,16,1,16,1,0.0,0.0,-2.0  $N,49,0.0,2.67,2.44  $,50,0.0,-2.67,2.44
 44   NGEN,2,16,33,50,1,0.0,0.0,-4.88
 45   NGEN,2,16,51,66,1,0.0,0.0,-4.0
 46   C*** DEFINE ELEMENTS
 47   MAT,2
 48   E,1,2,17  $EGEN,15,1,1
 49   TYPE,2  $REAL,2  $MAT,2
 50   E,1,2,17  $,17,2,16  $,16,2,15  $,2,3,19  $EGEN,7,2,16,19,1
          A     A     A     A     A     A     A     A     A     A     A     A     A
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3308

SARGENT & LUNDY

```
          **********  ANSYS INPUT DATA LISTING (FILE16)  **********

            6     12     18     24     30     36     42     48     54     60     66     72     78
            V      V      V      V      V      V      V      V      V      V      V      V      V
   51   E,31,15,16  $,16,32,31
   52   E,33,17,34  $,17,18,34  $,34,18,19  $,34,19,35  $EGEN,7,2,46,49,1
   53   E,47,31,48  $,31,32,48
   54   TYPE,3 $REAL,3 $MAT,1
   55   E,33,34,51  $EGEN,17,1,76  $E,50,33,51
   56   TYPE,4  $REAL,4
   57   E,33,34,51,51,  $,51,34,52,52  $,34,53,52,52  $,34,35,53,53
   58   EGEN,8,2,94,97,1
   59   E,49,50,67,67  $,50,68,67,67  $,50,51,68,68  $,50,33,51,51
   60   TYPE,3  $REAL,5
   61   E,51,52,70  $EGEN,15,1,130  $E,67,68,69  $E,68,51,69
   62   TYPE,4  $REAL,5
   63   E,51,70,69,68  $,51,52,70,70  $,52,53,70,70  $,53,71,70,70
   64   EGEN,7,2,147,150,1
   65   E,65,84,83,82  $,65,66,84,84
   66   TYPE,1  $REAL,7
   67   E,69,70,52  $EGEN,15,1,177
   68   C*** DEFINE CONSTRAINTS
   69   D,1,UX,0.0,0.0,1.0,UY,ROTY,ROTZ
   70   D,16,UX,0.0,0.0,16.0,ROTY,ROTZ
   71   D,17,UX,0.0,0.0,33.16,UY,ROTY,ROTZ
   72   D,32,UX,0.0,0.0,48.16,ROTY,ROTZ
   73   D,51,UX,0.0,0.0,69.16,UY,ROTY,ROTZ
   74   D,65,UX,0.0,0.0,84.16,ROTY,ROTZ
   75   D,69,UZ,0.0,0.0,84,1
   76   D,48,UX,0.0,0.0,50,1,ROTY,ROTZ
   77   D,67,UX,0.0,0.0,68,1,ROTY,ROTZ
   78   C*** DEFINE THERMAL LOADING
   79   KBC,1
   80   TUNIF,150.0
   81   KTEMP,-1
   82   T,13,160.6023  $TGEN,4,1,13
   83   T,1,299.8046  $TGEN,7,1,1
   84   T,10,150.5098  $T,11,180.5693  $T,12,160.6005
   85   T,8,213.0604  $T,9,167.0108
   86   ITER,-20,20,1
   87   PRDISP,1
   88   LWRITE
   89   T,13,163.0486  $TGEN,4,1,13
   90   T,1,334.3746  $TGEN,7,1,1
   91   T,10,162.9308  $T,11,183.0083  $T,12,163.047
   92   T,8,227.5125  $T,9,170.9363
   93   ITER,-20,20,1
   94   PRDISP,1
   95   LWRITE
   96   APWRIT
   97   FINISH
   98   /INPUT,27
   99   FINISH
```

SARGENT & LUNDY

```
          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1        C       SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 TITLE                                                                    13.8153   1/18/85 CP=          .000

         ***** ANSYS ANALYSIS DEFINITION (PREPT) *****

 NEW TITLE=  HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE

 C*** DEFINE ANALYSIS PARAMETERS

 ANALYSIS TYPE=  0

 KAY( 3)=    0

 KAY( 6)=    1

 KAY( 8)=    0

 NON-LINEAR ANALYSIS - SUPPLY NON-LINEAR PROPERTIES

 REFERENCE TEMPERATURE=  70.000  (TUNIF=  70.000)

 C*** DEFINE ELEMENTS AND PROPERTIES

 ELEMENT TYPE  1 USES STIF 24
  KEYOPT(1-8)=    0    0    0      0    0    1       0    0    0  (NOTPR= 0  NUMBER OF NODES=   3

 PLASTIC THIN-WALL BEAM, 3-D

 CURRENT NODAL DOF SET IS  UX      UY      UZ      ROTX  ROTY  ROTZ
  THREE-DIMENSIONAL STRUCTURE

  REAL CONSTANT SET    1  ITEMS    1 TO    6
       .000           .000           .000           1.84           .125

  REAL CONSTANT SET    1  ITEMS    7 TO   12
       1.84           1.84           .125           .000           .000           .000

 ELEMENT TYPE  2 USES STIF 48
  KEYOPT(1-8)=    0    0    0      0    0    0       0    0    0  (NOTPR= 0  NUMBER OF NODES=   3

 PLASTIC TRIANGULAR SHELL

 CURRENT NODAL DOF SET IS  UX      UY      UZ      ROTX  ROTY  ROTZ
  THREE-DIMENSIONAL STRUCTURE

  REAL CONSTANT SET    2  ITEMS    1 TO    6
       .747-001       .000           .000           .000           .000           .000

 ELEMENT TYPE  3 USES STIF 24
  KEYOPT(1-8)=    0    0    0      0    0    0       0    0    0  (NOTPR= 0  NUMBER OF NODES=   3

 PLASTIC THIN-WALL BEAM, 3-D
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SARGENT & LUNDY

3305

```
CURRENT NODAL DOF SET IS  UX     UY     UZ     ROTX   ROTY   ROTZ
 THREE-DIMENSIONAL STRUCTURE

 REAL CONSTANT SET    3  ITEMS    1 TO    6
      000            .000           .000            .000           .750           .359-001

 REAL CONSTANT SET    3  ITEMS    7 TO   12
    - 750           .750           .359-001        .000           .000           .000

ELEMENT TYPE  4 USES STIF 63
 KEYOPT(1-8):    0    0    0      0    0    0       0    0    0  (NOTPR= 0  NUMBER OF NODES=    4

QUAD. FLAT SHELL

CURRENT NODAL DOF SET IS  UX     UY     UZ     ROTX   ROTY   ROTZ
 THREE-DIMENSIONAL STRUCTURE

 REAL CONSTANT SET    4  ITEMS    1 TO    6
      .111           .000           .000            .000           .000           .000

 REAL CONSTANT SET    5  ITEMS    1 TO    6
      747-001        .000           .000            .000           .000           .000

 REAL CONSTANT SET    6  ITEMS    1 TO    6
      000            .000           .000            .000         - .750           .359-001

 REAL CONSTANT SET    6  ITEMS    7 TO   12
    - .750         - .750           .359-001        .000           .000           .000

 REAL CONSTANT SET    7  ITEMS    1 TO    6
      000            .000           .000            .000          1.94            .125

 REAL CONSTANT SET    7  ITEMS    7 TO   12
    -1.94           1.94           .125            .000           .000           .000

C*** DEFINE MATERIAL PROPERTIES


*** TEMPERATURE TABLE FOR PROPERTIES     NUM. TEMPS=   6 ***
SLOC=    1      100.0000       300.0000       600.0000
               800.0000       1000.000       1300.000

PROPERTY TABLEEX     MAT=    1  NUM. POINTS=   6
SLOC=    1      .2900000+008   .2830000+008   .2670000+008   .2420000+008
               .2100000+008   .1800000+008

PROPERTY TABLEALPX   MAT=    1  NUM. POINTS=   6
SLOC=    1      .6530000-005   .7300000-005   .8350000-005   .8900000-005
               .9600000-005   .9800000-005

 MATERIAL    1           COEFFICIENTS OF NUXY VS. TEMP EQUATION
  C0 =    .3000000

PROPERTY TABLE NUXY  MAT=    1  NUM. POINTS=   6
      TEMPERATURE      DATA          TEMPERATURE      DATA
      100.0000        .3000000       300.0000        .3000000
      600.0000        .3000000       800.0000        .3000000
      1000.000        .3000000       1300.000        .3000000
```

SARGENT & LUNDY

```
C*** DEFINE NONLINEAR MATERIAL PROPERTIES


*** TEMPERATURE TABLE FOR PROPERTIES     NUM. TEMPS=   6 ***
SLOC=    1      100.0000       300.0000       600.0000
               800.0000       1000.000       1300.000

PROPERTY TABLEEX     MAT=    2  NUM. POINTS=   6
SLOC=    1      .2900000+008   .2830000+008   .2670000+008   .2420000+008
               .2100000+008   .1800000+008

 MATERIAL    2           COEFFICIENTS OF NUXY VS. TEMP EQUATION
  C0 =    .3000000

PROPERTY TABLE NUXY  MAT=    2  NUM. POINTS=   6
      TEMPERATURE      DATA          TEMPERATURE      DATA
      100.0000        .3000000       300.0000        .3000000
      600.0000        .3000000       800.0000        .3000000
      1000.000        .3000000       1300.000        .3000000

PROPERTY TABLEALPX   MAT=    2  NUM. POINTS=   6
SLOC=    1      .6530000-005   .7300000-005   .8350000-005   .8900000-005
               .9600000-005   .9800000-005

NONLINEAR PROPERTIES FOR MATERIAL    2  NUM. POINTS=   48
SLOC=   13    2.0000         .00000         .00000          .00000         .00000         .00000

NONLINEAR PROPERTIES FOR MATERIAL    2  NUM. POINTS=   48
SLOC=   18    100.00         300.00         600.00          800.00         1000.0         1300.0

NONLINEAR PROPERTIES FOR MATERIAL    2  NUM. POINTS=   48
SLOC=   25    36000.         33000.         27000.          23000.         18000.         6000.0

NONLINEAR PROPERTIES FOR MATERIAL    2  NUM. POINTS=   48
SLOC=   31    .20000         .20000         .20000          .20000         .20000         .20000

C*** DEFINE NODES

NODE     1  NCS=  0  X,Y,Z=   .00000       -8.0000         6.4400

NODE     7  NCS=  0  X,Y,Z=   29.500       -8.0000         6.4400

FILL     5 POINTS BETWEEN NODE     1 AND NODE     7
 START WITH NODE     2 AND INCREMENT BY      1

NODE    10  NCS=  0  X,Y,Z=   29.500        8.0000         6.4400

FILL     2 POINTS BETWEEN NODE     7 AND NODE    10
 START WITH NODE     8 AND INCREMENT BY      1

NODE    18  NCS=  0  X,Y,Z=   .00000        8.0000         6.4400
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3308

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FILL     5 POINTS BETWEEN NODE    10 AND NODE    15
 START WITH NODE    11 AND INCREMENT BY      1

GENERATE     3 TOTAL SETS OF NODES WITH INCREMENT     15
  SET IS FROM     1 TO    15 IN STEPS OF     1
  GEOMETRY INCREMENTS ARE   .00000       .00000      -2.0000

NODE    48  KCS= 0  X,Y,Z=   .00000      2.6700       2.4400

NODE    50  KCS= 0  X,Y,Z=   .00000     -2.6700       2.4400

GENERATE     2 TOTAL SETS OF NODES WITH INCREMENT     18
  SET IS FROM    33 TO    50 IN STEPS OF     1
  GEOMETRY INCREMENTS ARE   .00000       .00000      -4.8800

GENERATE     2 TOTAL SETS OF NODES WITH INCREMENT     18
  SET IS FROM    51 TO    68 IN STEPS OF     1
  GEOMETRY INCREMENTS ARE   .00000       .00000      -4.0000

C*** DEFINE ELEMENTS


MATERIAL NUMBER SET TO  2
ELEMENT     1         1     2    17

GENERATE    15 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      1
  SET IS     1 TO     1 IN STEPS OF     1
NUMBER OF ELEMENTS=     15

ELEMENT TYPE SET TO  2

REAL CONSTANT NUMBER=  2

MATERIAL NUMBER SET TO  2
ELEMENT    16         1     2    17
ELEMENT    17        17     2    18
ELEMENT    18        18     2    19
ELEMENT    19         2     3    19

GENERATE     7 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      2
  SET IS    16 TO    19 IN STEPS OF     1
NUMBER OF ELEMENTS=     43
ELEMENT    44        31    15    16
ELEMENT    45        16    32    31
ELEMENT    46        33    17    34
ELEMENT    47        17    18    34
ELEMENT    48        34    18    19
ELEMENT    49        34    19    35

GENERATE     7 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      2
  SET IS    46 TO    49 IN STEPS OF     1
NUMBER OF ELEMENTS=     73
ELEMENT    74        47    31    48
ELEMENT    75        31    32    48

ELEMENT TYPE SET TO  3

REAL CONSTANT NUMBER=  3
```

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MATERIAL NUMBER SET TO  1
ELEMENT    76        33    34    51

GENERATE    17 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      1
  SET IS    76 TO    76 IN STEPS OF     1
NUMBER OF ELEMENTS=     92
ELEMENT    93        50    33    51

ELEMENT TYPE SET TO  4

REAL CONSTANT NUMBER=  4
ELEMENT    94        33    34    51    51
ELEMENT    95        51    34    52    52
ELEMENT    96        34    53    52    52
ELEMENT    97        34    35    53    53

GENERATE     8 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      2
  SET IS    94 TO    97 IN STEPS OF     1
NUMBER OF ELEMENTS=    125
ELEMENT   126        49    50    67    67
ELEMENT   127        50    68    67    67
ELEMENT   128        50    51    68    68
ELEMENT   129        50    33    51    51

ELEMENT TYPE SET TO  3

REAL CONSTANT NUMBER=  6
ELEMENT   130        51    52    70

GENERATE    15 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      1
  SET IS   130 TO   130 IN STEPS OF     1
NUMBER OF ELEMENTS=    144
ELEMENT   145        67    68    69
ELEMENT   146        68    51    69

ELEMENT TYPE SET TO  4

REAL CONSTANT NUMBER=  5
ELEMENT   147        51    70    69    69
ELEMENT   148        51    52    70    70
ELEMENT   149        52    53    70    70
ELEMENT   150        53    71    70    70

GENERATE     7 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      2
  SET IS   147 TO   150 IN STEPS OF     1
NUMBER OF ELEMENTS=    174
ELEMENT   175        85    84    83    83
ELEMENT   176        85    86    84    84

ELEMENT TYPE SET TO  1

REAL CONSTANT NUMBER=  7
ELEMENT   177        69    70    52

GENERATE    15 TOTAL SETS OF ELEMENTS WITH NODE INCREMENT OF      1
  SET IS   177 TO   177 IN STEPS OF     1
NUMBER OF ELEMENTS=    191
```

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3308

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C*** DEFINE CONSTRAINTS

SPECIFIED DISP UX    FROM NODE      1 TO NODE      1 IN STEPS OF     1
 VALUES=  .00000       00000       ADDITIONAL DOFS=  UY     ROTY   ROTZ

SPECIFIED DISP UX    FROM NODE     16 TO NODE     16 IN STEPS OF     1
 VALUES=  .00000       00000       ADDITIONAL DOFS=  ROTY   ROTZ

SPECIFIED DISP UX    FROM NODE     17 TO NODE     33 IN STEPS OF    16
 VALUES=  .00000       00000       ADDITIONAL DOFS=  UY     ROTY   ROTZ

SPECIFIED DISP UX    FROM NODE     32 TO NODE     48 IN STEPS OF    16
 VALUES=  .00000       .00000      ADDITIONAL DOFS=  ROTY   ROTZ

SPECIFIED DISP UX    FROM NODE     51 TO NODE     69 IN STEPS OF    18
 VALUES=  .00000       00000       ADDITIONAL DOFS=  UY     ROTY   ROTZ

SPECIFIED DISP UX    FROM NODE     66 TO NODE     84 IN STEPS OF    18
 VALUES=  .00000       .00000      ADDITIONAL DOFS=  ROTY   ROTZ

SPECIFIED DISP UZ    FROM NODE     69 TO NODE     84 IN STEPS OF     1
 VALUES=  .00000       .00000      ADDITIONAL DOFS=

SPECIFIED DISP UX    FROM NODE     49 TO NODE     50 IN STEPS OF     1
 VALUES=  .00000       .00000      ADDITIONAL DOFS=  ROTY   ROTZ

SPECIFIED DISP UX    FROM NODE     67 TO NODE     68 IN STEPS OF     1
 VALUES=  .00000       00000       ADDITIONAL DOFS=  ROTY   ROTZ

C*** DEFINE THERMAL LOADING

STEP BOUNDARY CONDITION KEY=  1

UNIFORM TEMPERATURE=   150.000   (TREF=    70.000)

KTEMP=     -1      0

READ IN TEMPERATURES IN ELEMENT OR NODAL FORMAT

SET NODE     13   TO TEMP=   160.80       FLUEN=    .00000

GENERATE     4 TOTAL SETS OF TEMPERATURES WITH NODE INCREMENT     1
   SET IS FROM    13 TO    13 BY     1
   TEMP. INC=   .00000       FLUEN. INC=   .00000

SET NODE      1   TO TEMP=   299.80       FLUEN=    .00000

GENERATE     7 TOTAL SETS OF TEMPERATURES WITH NODE INCREMENT     1
   SET IS FROM     1 TO     1 BY     1
   TEMP. INC=   .00000       FLUEN. INC=   .00000

SET NODE     10   TO TEMP=   160.51       FLUEN=    .00000

SET NODE     11   TO TEMP=   160.57       FLUEN=    .00000
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SET NODE     12   TO TEMP=   160.80       FLUEN=    .00000

SET NODE      8   TO TEMP=   213.06       FLUEN=    .00000

SET NODE      9   TO TEMP=   187.01       FLUEN=    .00000

NITTER=    -20   NPRINT=     20   NPOST=      1

USE CONVERGENCE AND/OR TIME STEP OPTIMIZATION
 BOUNDARY CONDITIONS STEPPED DUE TO STATIC CONVERGENCE OPTION

ALL PRINT CONTROLS RESET TO     20
 ALL POST DATA FILE CONTROLS RESET TO      1

NODE PRINT SPECIFICATION  1   FREQ=     1   NSTART=      1   NSTOP=     84   NINC=      1

LOAD STEP      1   WRITTEN ON FILE23.   TOTAL LOAD COMMANDS=    880

SET NODE     13   TO TEMP=   183.05       FLUEN=    .00000

GENERATE     4 TOTAL SETS OF TEMPERATURES WITH NODE INCREMENT     1
   SET IS FROM    13 TO    13 BY     1
   TEMP. INC=   .00000       FLUEN. INC=   .00000

SET NODE      1   TO TEMP=   334.37       FLUEN=    .00000

GENERATE     7 TOTAL SETS OF TEMPERATURES WITH NODE INCREMENT     1
   SET IS FROM     1 TO     1 BY     1
   TEMP. INC=   .00000       FLUEN. INC=   .00000

SET NODE     10   TO TEMP=   182.83       FLUEN=    .00000

SET NODE     11   TO TEMP=   183.01       FLUEN=    .00000

SET NODE     12   TO TEMP=   183.05       FLUEN=    .00000

SET NODE      8   TO TEMP=   227.61       FLUEN=    .00000

SET NODE      9   TO TEMP=   170.84       FLUEN=    .00000

NITTER=    -20   NPRINT=     20   NPOST=      1

USE CONVERGENCE AND/OR TIME STEP OPTIMIZATION
 BOUNDARY CONDITIONS STEPPED DUE TO STATIC CONVERGENCE OPTION

ALL PRINT CONTROLS RESET TO     20
 ALL POST DATA FILE CONTROLS RESET TO      1

NODE PRINT SPECIFICATION  1   FREQ=     1   NSTART=      1   NSTOP=     84   NINC=      1

LOAD STEP      2   WRITTEN ON FILE23.   TOTAL LOAD COMMANDS=    880

*** NOTE ***   KRF KEY NOT SET - NO NODAL OR REACTION FORCES
                WILL BE AVAILABLE FOR POSTPROCESSING

DATA CHECKED - NO FATAL ERRORS FOUND.
CHECK OUTPUT FOR POSSIBLE WARNING MESSAGES.
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ANALYSIS DATA WRITTEN ON FILE27 (  1762 LINES)

*** PREP7 GLOBAL STATUS ***

TITLE=  HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE
ANALYSIS TYPE=     0
NUMBER OF ELEMENT TYPES=      4
NUMBER OF ELEMENTS=    181
MAXIMUM NODE NUMBER=     84
MAXIMUM LINEAR PROPERTY NUMBER=      2
NUMBER OF NON-LINEAR PROPERTIES=      1
MAXIMUM REAL CONSTANT SET NUMBER=      7
ACTIVE COORDINATE SYSTEM=      0  (CARTESIAN)
NUMBER OF IMPOSED DISPLACEMENTS=     63
NODAL TEMPERATURES STORED

ALL CURRENT PREP7 DATA WRITTEN TO FILE16
 FOR POSSIBLE RESUME FROM THIS POINT


***** ROUTINE COMPLETED *****  CP =         16.720

***** INPUT FILE SWITCHED FROM FILE16 TO FILE27
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 HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE                    13.8200   1/16/84 CP=      16.758


           *****  NOTICE  *****  THIS IS THE ANSYS GENERAL PURPOSE
           FINITE ELEMENT COMPUTER PROGRAM.  NEITHER SWANSON ANALYSIS
           SYSTEMS, INC. NOR THE CORPORATION SUPPLYING THE COMPUTER
           FACILITIES FOR THIS ANALYSIS ASSUME ANY RESPONSIBILITY FOR
           THE VALIDITY, ACCURACY, OR APPLICABILITY OF ANY RESULTS
           OBTAINED FROM THE ANSYS SYSTEM.  THE USER MUST VERIFY HIS
           OWN RESULTS.

           SWANSON ANALYSIS SYSTEMS,INC. IS ENDEAVORING TO MAKE THE
           ANSYS PROGRAM AS COMPLETE, ACCURATE, AND EASY TO USE AS
           POSSIBLE.  SUGGESTIONS AND COMMENTS ARE WELCOMED.  ANY
           ERRORS ENCOUNTERED IN EITHER THE DOCUMENTATION OR THE
           RESULTS SHOULD BE IMMEDIATELY BROUGHT TO OUR ATTENTION.

PRINTOUT SUPPRESSED BY /NOP

           ***** ANALYSIS OPTIONS *****

                                    VALUE

 ANALYSIS TYPE . . . . . .            0
 KAY( 8) . . . . . .                  1
 REFERENCE TEMPERATURE . . . .     70.00


           ***** ELEMENT TYPES *****

 TYPE  STIF       DESCRIPTION                    KEY OPTIONS                    NJ   INOTPR
                                          1  2  3    4  5  6    7  8  9


NUMBER OF ELEMENT TYPES=    4


           ***** TABLE OF ELEMENT REAL CONSTANTS *****
  NO.

PRINTOUT SUPPRESSED BY /NOP

NUMBER OF REAL CONSTANT SETS=    7


           ***** ELEMENT DEFINITIONS *****

ELEMENT     NODES                                MAT  TYPE  CLASS          ELEMENT REAL CONSTANTS
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PRINTOUT SUPPRESSED BY /NOP

SWITCHED TO FIXED FORMAT INPUT

 INTEGER STORAGE REQUIREMENTS FOR ELEMENT INPUT                    CP=     19.603  TIME= 13.82083
 MEMORY REQUIRED=      2065  MEMORY AVAILABLE= 4002000
 MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE=     2000050

 NUMBER OF ELEMENTS =     191      MAXIMUM NODE NUMBER USED =      84


            ***** NODE DEFINITIONS *****

                          LOCATION                                ROTATION (DEGREES)

  NODE          X              Y              Z             THXY           THYZ           THXZ
              (OR R)       (OR THETA)      (OR PHI)      (OR RT)       (TZ OR TP)     (RZ OR RP)

PRINTOUT SUPPRESSED BY /NOP

SWITCHED TO FIXED FORMAT INPUT

 XMIN=    0000       XMAX=   29.50       YMIN= -8.000       YMAX=   8.000       ZMIN= -8.440       ZMAX=   8.440

 INTEGER STORAGE REQUIREMENTS FOR NODE INPUT                       CP=     20.783  TIME= 13.82111
 MEMORY REQUIRED=      1006  MEMORY AVAILABLE= 4002000
 MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE= 667000


            ***** MATERIAL PROPERTIES *****

PRINTOUT SUPPRESSED BY /NOP

MAXIMUM MATERIAL NUMBER=    2


            ***** NON-LINEAR MATERIAL PROPERTIES *****

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NUMBER OF NONLINEAR MATERIALS=    1


            ***** MASTER DEGREES OF FREEDOM *****

  NODE        DEGREES OF FREEDOM LIST

NUMBER OF SPECIFIED MASTER D.O.F. =      0
TOTAL NUMBER OF MASTER D.O.F.     =      0

 INTEGER STORAGE REQUIREMENTS FOR MATERIALS, ETC. INPUT            CP=     22.642  TIME= 13.82167
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 MEMORY REQUIRED=       786  MEMORY AVAILABLE= 4002000

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 HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE                    13.8219   1/18/88 CP=      23.486


 LOAD STEP NUMBER=     1

          *** LOAD OPTIONS SUMMARY ***

 TIME   =    .00000      (TIME AT END OF LOAD STEP)
 NITER  =     -20        (NUMBER OF ITERATIONS)
 TUNIF  =  150.0000      (UNIFORM TEMPERATURE)    (TREF=   70.0000)
 KTEMP  =    -1          (USE SPECIFIED NODAL OR ELEMENT TEMPERATURES)
 KBC    =     1          (LOADS STEPPED TO FINAL VALUES FOR ALL ITERATIONS)
 PLCR   =          .0100 (PLASTICITY CONVERGENCE CRITERION)
 CRCR   =          .1000 (CREEP OPTIMIZATION CRITERION)
 LDCR   =       .001000 (LARGE DEFLECTION CONVERGENCE CRITERION)

 NPRINT=     20          (OVERALL PRINT FREQUENCY)
 NPOST  =      1          (OVERALL POST FREQUENCY)

  DISPLACEMENT PRINT FREQUENCIES
    FREQ    NSTRT   NSTOP    NINC
       1        1      84       1

  ELEMENT PRINT AND POST FREQUENCIES
   TYPE   STIFF   STRESS   FORCE        STRESS   STRESS   FORCE
           NO     PRINT   PRINT        POST     LEVEL    POST
      1     24      20      20           1        3        1
      2     48      20      20           1        3        1
      3     24      20      20           1        3        1
      4     63      20      20           1        3        1


****** LOAD SUMMARY -      63 DISPLACEMENTS        0 FORCES        0 PRESSURES      *****


  INTEGER STORAGE REQUIREMENTS FOR LOAD DATA INPUT                  CP=     33.854  TIME= 13.82472
  MEMORY REQUIRED=     1402  MEMORY AVAILABLE= 4002000

  RANGE OF ELEMENT MAXIMUM STIFFNESS IN GLOBAL COORDINATES

 MAXIMUM=    .104381+008  AT ELEMENT     187.
 MINIMUM=    .290678+006  AT ELEMENT     145.
  INTEGER STORAGE REQUIREMENTS FOR ELEMENT FORMULATION              CP=     88.421  TIME= 13.84000
  MEMORY REQUIRED=     1400  MEMORY AVAILABLE= 4002000

   *** ELEMENT STIFFNESS FORMULATION TIMES
  TYPE   NUMBER   STIF   TOTAL CP    AVE CP

    1       30     24      4.149       .138
    2       60     48     17.931       .299
    3       35     24      5.030       .144
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    4       68     63     23.480       .356

 TIME AT END OF ELEMENT STIFFNESS FORMULATION  CP=       88.432

 MAXIMUM IN-CORE WAVE FRONT ALLOWED FOR REQUESTED MEMORY SIZE= 1998.
  INTEGER STORAGE REQUIREMENTS FOR WAVE FRONT MATRIX SOLUTION       CP=    126.614  TIME= 13.85055
  MEMORY REQUIRED=    13721  MEMORY AVAILABLE= 4002000

 MAXIMUM IN-CORE WAVE FRONT=     108.

      MATRIX SOLUTION TIMES
  READ IN ELEMENT STIFFNESSES   CP=           7.126

  NODAL COORD. TRANSFORMATION   CP=            .000
  MATRIX TRIANGULARIZATION      CP=          30.579

 TIME AT END OF MATRIX TRIANGULARIZATION  CP=         138.838
```

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HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 13.8511 1/18/85 CP= 128.856

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 1 ITERATION= 1 CUM. ITER. = 1

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	.000000	.000000	.803453-002	-.147992-001	.000000	.000000
2	.435802-002	-.393824-002	.767234-002	-.121528-001	-.390287-004	.511672-003
3	.873350-002	-.108023-001	.808384-002	-.883230-002	-.960070-004	.118018-002
4	.133207-001	-.800988-002	.782575-002	-.411576-002	-.135582-003	.191269-002
5	.184039-001	-.111981-002	.821214-002	-.207348-002	-.111471-003	.255846-002
6	.243095-001	.107021-001	.712910-002	-.132628-002	.882860-005	.285964-002
7	.306358-001	.213864-001	.598257-002	-.533410-003	-.777006-003	.213459-002
8	.224619-001	.270756-001	.667172-002	.323770-003	-.677180-003	.111243-002
9	.189517-001	.315232-001	.712424-002	.827868-004	-.239844-003	.834077-003
10	.168716-001	.348330-001	.686203-002	.656226-004	-.121790-004	.423735-003
11	.138826-001	.332955-001	.698737-002	-.215685-003	-.581991-005	.412344-003
12	.111405-001	.317852-001	.698026-002	-.490309-003	-.138257-004	.400980-003
13	.834001-002	.303804-001	.700289-002	-.750509-003	-.138196-004	.361513-003
14	.555725-002	.290439-001	.695883-002	-.892628-003	-.102416-004	.280786-003
15	.277802-002	.283790-001	.697620-002	-.111730-002	-.613929-005	.156125-003
16	.000000	.270346-001	.694291-002	-.628818-003	.000000	.000000
17	.000000	.000000	.537459-002	.209210-002	.000000	.000000
18	.419840-002	-.121236-001	.583262-002	.695347-003	.296216-004	-.335373-002
19	.843357-002	-.146387-001	.542417-002	.871242-003	-.650946-005	-.720986-003
20	.127505-001	-.117098-001	.590143-002	.644177-003	-.251872-005	.242396-002
21	.173219-001	-.125888-002	.570495-002	.115830-002	.128798-003	.168232-002
22	.221645-001	.106307-001	.533826-002	.102052-002	.658090-003	.355570-002
23	.268058-001	.230020-001	.362268-002	.878148-003	.203954-002	.145044-002
24	.216815-001	.273301-001	.525533-002	.324581-003	.951833-003	.842420-003
25	.186744-001	.312212-001	.585013-002	.371739-004	.325284-003	.282239-003
26	.166174-001	.343707-001	.570323-002	-.200784-003	.133170-003	.475589-003
27	.138415-001	.327283-001	.582438-002	-.291888-003	.245838-004	.246880-003
28	.110708-001	.307913-001	.585661-002	-.455991-003	.575753-005	.527871-003
29	.829722-002	.281542-001	.582338-002	-.120053-002	.701743-005	.555802-003
30	.552883-002	.253420-001	.582584-002	-.228013-002	.177804-004	.484781-003
31	.276214-002	.212772-001	.578598-002	-.401619-002	.239874-004	.113078-002
32	.000000	.177412-001	.580935-002	-.612735-002	.000000	.000000
33	.000000	.000000	.452083-002	-.311593-004	.000000	.000000
34	.402541-002	-.587880-002	.485828-002	.319460-002	.183409-003	-.949166-003
35	.809616-002	-.908899-002	.54241-002	.400688-002	.228039-004	.317882-004
36	.121816-001	-.801102-002	.495441-002	.400153-002	.279349-005	.121688-002
37	.162158-001	.262453-002	.473347-002	.278120-002	.146208-003	.189321-002
38	.201248-001	.140530-001	.456312-002	.184788-002	.459621-003	.244893-002
39	.238782-001	.242395-001	.274619-002	.106879-002	.147211-002	.143846-002
40	.194256-001	.277604-001	.448842-002	.815705-004	.807841-003	.303442-003
41	.179070-001	.310435-001	.476349-002	-.154039-003	.293109-003	.257281-003
42	.164163-001	.340757-001	.467714-002	-.204850-003	.800228-004	.334306-003
43	.137275-001	.322715-001	.475432-002	-.128743-003	.242387-004	.405812-003
44	.109986-001	.298971-001	.479146-002	-.380389-003	.505058-005	.638514-003
45	.825230-002	.260529-001	.476044-002	-.655497-003	.148522-004	.988931-003
46	.549905-002	.208948-001	.475944-002	-.143333-002	.503454-004	.130388-002
47	.274478-002	.139759-001	.472521-002	-.195061-002	.140085-003	.126973-002
48	.000000	.884682-002	.474207-002	-.755081-004	.000000	.000000

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49	.000000	.577333-002	.467634-002	-.118796-005	.000000	.000000
50	.000000	.291523-002	.462508-002	-.283498-004	.000000	.000000
51	.000000	.000000	.209801-002	-.288018-004	.000000	.000000

SARGENT & LUNDY

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        ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1        C      SARGENT & LUNDY  JAN 1,1983
    SWANSON ANALYSIS SYSTEMS, INC          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE                    13.8611   1/18/86 CP=     129.047

***** DISPLACEMENT SOLUTION *****  TIME =    .00000      LOAD STEP=    1  ITERATION=     1  CUM. ITER. =     1
  NODE       UX                UY                UZ                ROTX              ROTY              ROTZ

   52     .381120-002       .611333-002       .215423-002       .329133-002       .603009-004       .100787-002
   53     .758490-002       .107991-001       .225944-002       .388033-002      -.122178-003       .842395-003
   54     .111880-001       .145165-001       .230235-002       .395987-002      -.178863-003       .780886-003
   55     .146232-001       .177898-001       .239141-002       .385392-002      -.136072-003       .101338-002
   56     .178261-001       .220012-001       .187380-002       .144852-002      -.125778-003       .114117-002
   57     .205879-001       .254880-001       .102350-002       .800857-004      -.818839-004       .753756-003
   58     .180112-001       .283082-001       .191790-002       .103483-003       .161223-004       .225801-003
   59     .173003-001       .312012-001       .221359-002       .587732-004      -.418604-004       .143393-003
   60     .162591-001       .340786-001       .210086-002      -.849102-005       .129554-004       .294960-003
   61     .135845-001       .320823-001       .215379-002       .168977-004       .330209-005       .508124-003
   62     .109077-001       .290625-001       .216123-002       .218178-005      -.128390-004       .721466-003
   63     .820307-002       .251182-001       .216085-002       .363451-003      -.228702-004       .983439-003
   64     .547225-002       .195496-001       .214790-002       .786117-003      -.821652-004       .119489-002
   65     .273527-002       .134584-001       .213815-002       .147060-002      -.136203-003       .130450-002
   66     .000000           .869884-002       .213069-002       .698643-003       .000000           .000000
   67     .000000           .580930-002       .204856-002       .412110-004       .000000           .000000
   68     .000000           .289933-002       .202432-002      -.358689-005       .000000           .000000
   69     .000000           .000000           .000000          -.120301-001       .000000           .000000
   70     .360465-002       .102747-001       .000000          -.883840-002      -.308902-004       .667173-004
   71     .711820-002       .175810-001       .000000          -.328285-002      -.390582-004       .727340-004
   72     .105347-001       .215235-001       .000000          -.144166-002      -.825713-004       .488372-004
   73     .137269-001       .239125-001       .000000          -.378202-003      -.774779-004       .513770-004
   74     .165752-001       .248740-001       .000000          -.108639-003      -.797111-005       .898437-004
   75     .196220-001       .254564-001       .000000          -.769105-004      -.180841-003       .849022-004
   76     .188869-001       .285844-001       .000000           .603525-004      -.507280-004       .103737-003
   77     .178313-001       .312767-001       .000000          -.131070-004      -.360426-004       .244898-003
   78     .161659-001       .340827-001       .000000           .316847-005      -.125972-004       .402607-003
   79     .135360-001       .321517-001       .000000           .157847-003      -.567012-006       .493834-003
   80     .104777-001       .300121-001       .000000           .340542-003       .392163-006       .509400-003
   81     .618950-002       .279343-001       .000000           .512800-003       .121588-005       .400465-003
   82     .347725-002       .263580-001       .000000           .742638-003       .877764-006       .351480-003
   83     .274181-002       .251241-001       .000000           .804810-003       .188895-005       .191251-003
   84     .000000           .245614-001       .000000           .813818-003       .000000           .000000

MAXIMUMS
NODE          7                 10                5                 1                23                22
VALUE     .306358-001       .348330-001       .821214-002      -.147992-061       .203954-002       .355570-002

 INTEGER STORAGE REQUIREMENTS FOR BACK SUBSTITUTION                    CP=    129.256  TIME= 13.86139
 MEMORY REQUIRED=     2422  MEMORY AVAILABLE= 4002000

  *** ELEM  STRESS CALC  TIMES
 TYPE  NUMBER  STIF  TOTAL CP   AVE CP

  1       30    24      4.003      .133
  2       60    48      8.530      .142
  3       35    24      4.252      .121
  4       66    63     11.732      .178
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      DISPLACEMENT INCREMENT  =     .34833-001 AT NODE     10      CRITERION =     .10000-002
           PLASTICITY RATIO   =     .22016     AT ELEM      6      CRITERION =     .10000-001
*** LOAD STEP     1   ITER     1  COMPLETED.   TIME=     .000000       TIME INC=     .000000      NEW TRIANG MATRIX  CUM. ITER =     1

 INTEGER STORAGE REQUIREMENTS FOR STRESS AND FORCE CALCULATIONS    CP=    158.427  TIME= 13.85944
 MEMORY REQUIRED=     2406  MEMORY AVAILABLE= 4002000


  *** STORAGE REQUIREMENT SUMMARY
MAXIMUM MEMORY USED           =    13721
MAXIMUM MEMORY AVAILABLE      = 4002000


  *** PROBLEM STATISTICS
 NO. OF ACTIVE DEGREES OF FREEDOM =     441
 R.M.S. WAVEFRONT SIZE =     87.9


 *** ANSYS BINARY FILE STATISTICS
BUFFER SIZE USED= 1232
POST DATA WRITTEN ON FILE12
RESTART DATA WRITTEN ON FILE 3    (  309391 WORDS)
TRIANGULARIZED MATRIX WRITTEN ON FILE11    (   81078 WORDS)
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1

A ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8855

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 13.8900 1/16/86 CP= 258.998

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 1 ITERATION= 2 CUM ITER = 2

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	.000000	.000000	.800884-002	-.148416-001	.000000	.000000
2	.438873-002	-.403806-002	.754219-002	-.121016-001	-.251152-005	.556780-003
3	.874635-002	-.131552-001	.806585-002	-.517298-002	-.749280-004	.125874-002
4	.133193-001	-.102402-001	.778689-002	-.259767-002	-.130792-003	.201211-002
5	.184045-001	-.250945-002	.818864-002	-.737238-003	-.114206-003	.265249-002
6	.242668-001	.105973-001	.715403-002	-.535951-003	-.852534-004	.292774-002
7	.302990-001	.226502-001	.800582-002	-.543438-003	-.881169-003	.218899-002
8	.226333-001	.263275-001	.867400-002	.324121-003	-.544827-003	.111958-002
9	.189433-001	.327877-001	.712546-002	.838726-004	-.209950-003	.623753-003
10	.168571-001	.360956-001	.886143-002	.645033-004	-.940095-005	.421171-003
11	.139718-001	.345333-001	.898814-002	-.223405-003	-.623698-005	.425157-003
12	.111313-001	.329107-001	.898838-002	-.478649-003	-.148936-004	.420158-003
13	.832978-002	.314248-001	.899425-002	-.747491-003	-.185253-004	.380870-003
14	.554469-002	.299587-001	.883563-002	-.872687-003	-.153599-004	.295582-003
15	.276864-002	.282913-001	.892824-002	-.112095-002	-.118368-004	.184233-003
16	.000000	.276211-001	.888036-002	-.578879-003	.000000	.000000
17	.000000	.000000	.535734-002	.204706-002	.000000	.000000
18	.420445-002	-.109313-001	.581413-002	.111864-002	-.510045-004	-.305822-002
19	.843978-002	-.133893-001	.539609-002	.263232-002	-.195218-003	-.775096-003
20	.127898-001	-.924659-002	.585870-002	.277835-002	-.709174-004	.264477-002
21	.173080-001	.970442-003	.567141-002	.264498-002	.816821-004	.170104-002
22	.220381-001	.128401-001	.534498-002	.209113-002	.626357-003	.343262-002
23	.268252-001	.242613-001	.383496-002	.766007-003	.189053-002	.128873-002
24	.220222-001	.265904-001	.535830-002	.301955-003	.761529-003	.602439-003
25	.188571-001	.324631-001	.585129-002	.384540-004	.197666-003	.362787-003
26	.166063-001	.356319-001	.570291-002	-.204822-003	.134713-003	.488681-003
27	.138404-001	.338884-001	.582453-002	-.340894-003	.242214-004	.272741-003
28	.110827-001	.318431-001	.585490-002	-.512014-003	.434070-005	.548790-003
29	.828955-002	.290827-001	.581651-002	-.128363-002	.471419-005	.587124-003
30	.552056-002	.261300-001	.580673-002	-.238765-002	.189185-004	.500485-003
31	.275567-002	.218705-001	.578117-002	-.420648-002	.385216-004	.118591-002
32	.000000	.181838-001	.575844-002	-.639436-002	.000000	.000000
33	.000000	.000000	.450757-002	-.196758-004	.000000	.000000
34	.402893-002	-.461573-002	.465039-002	.304972-002	.129805-003	-.567273-003
35	.809652-002	-.566855-002	.452415-002	.295853-002	-.892810-005	.445869-003
36	.121696-001	-.116004-002	.492767-002	.354863-002	-.878646-006	.138254-002
37	.161878-001	.733305-002	.470938-002	.307058-002	.162657-003	.185226-002
38	.200586-001	.175707-001	.455900-002	.178528-002	.490171-003	.204143-002
39	.235778-001	.254980-001	.278246-002	.103028-002	.144795-002	.108686-002
40	.200899-001	.280184-001	.449253-002	.600713-004	.772197-003	.284961-003
41	.183081-001	.323034-001	.478481-002	-.140858-003	.254271-003	.340292-003
42	.164075-001	.353354-001	.467660-002	-.205081-003	.811628-004	.390805-003
43	.137187-001	.333440-001	.475444-002	-.147609-003	.215897-004	.435409-003
44	.109921-001	.308428-001	.479008-002	-.402923-003	.290145-005	.685543-003
45	.824688-002	.286307-001	.475524-002	-.877306-003	.134585-004	.102900-002
46	.549547-002	.214807-001	.474656-002	-.148221-002	.900430-004	.135817-002
47	.274474-002	.142269-001	.471604-002	-.203492-002	.165129-003	.143248-002
48	.000000	.865313-002	.471962-002	-.815257-004	.000000	.000000

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49	.000000	.577799-002	.465818-002	-.259225-005	.000000	.000000
50	.000000	.281847-002	.461140-002	-.277525-004	.000000	.000000
51	.000000	.000000	.208581-002	-.308762-004	.000000	.000000

SARGENT & LUNDY

36

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 13.8900 1/18/86 CP= 269.188

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 1 ITERATION= 2 CUM. ITER. = 2

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	.380707-002	.802883-002	.215535-002	.281875-002	.588404-004	.110928-002
53	.756996-002	.112981-001	.226540-002	.307172-002	-.106413-003	.108931-002
54	.111703-001	.164304-001	.230487-002	.306401-002	-.143826-003	.107193-002
55	.145827-001	.209051-001	.236579-002	.228137-002	-.129078-003	.104075-002
56	.177748-001	.243933-001	.197445-002	.106876-002	-.180974-003	.848306-003
57	.205326-001	.267404-001	.103166-002	.106973-003	-.778850-004	.552059-003
58	.183660-001	.285624-001	.182089-002	.536100-004	.138588-003	.209824-003
59	.175638-001	.324570-001	.22 431-002	.500821-004	.258045-004	.186203-003
60	.162518-001	.353330-001	.210046-002	-.107381-004	.116307-004	.344381-003
61	.135785-001	.331856-001	.215412-002	.406515-004	.564012-005	.530958-003
62	.109039-001	.300599-001	.216025-002	.387899-004	-.118012-004	.745925-003
63	.82 170-002	.259834-001	.215729-002	.419431-003	-.240020-004	.101844-002
64	.547251-002	.202502-001	.213807-002	.860550-003	-.662239-004	.135323-002
65	.273171-002	.137764-001	.212000-002	.157665-002	-.145099-003	.137920-002
66	.000000	.869884-002	.210474-002	.617267-003	.000000	.000000
67	.000000	.581058-002	.203073-002	.408493-004	.000000	.000000
68	.000000	.289851-002	.201062-002	-.458233-005	.000000	.000000
69	.000000	.000000	.000000	-.119476-001	.000000	.000000
70	.361974-002	.806784-002	.000000	-.782829-002	-.583208-004	.986139-004
71	.710244-002	.146457-001	.000000	-.484607-002	-.480480-004	.118899-003
72	.105008-001	.188164-001	.000000	-.302956-002	-.654310-004	.111082-003
73	.136862-001	.224487-001	.000000	-.149871-002	-.787666-004	.120508-003
74	.165359-001	.251357-001	.000000	-.502118-003	-.902744-005	.147173-003
75	.195840-001	.267035-001	.000000	-.732380-004	-.156288-003	.113331-003
76	.188326-001	.258400-001	.000000	.591411-004	-.657808-004	.108328-003
77	.178700-001	.325341-001	.000000	-.137565-004	-.335743-004	.234518-003
78	.161564-001	.353369-001	.000000	.415777-005	-.142892-004	.389323-003
79	.135288-001	.333989-001	.000000	.184068-003	-.171984-005	.502652-003
80	.108751-001	.311996-001	.000000	.347878-003	.885321-005	.524263-003
81	.818854-002	.280315-001	.000000	.514625-003	.184586-005	.478627-003
82	.547674-002	.273840-001	.000000	.736429-003	.141735-005	.384908-003
83	.274187-002	.260513-001	.000000	.790592-003	.2215 8-005	.198865-003
84	.000000	.255576-001	.000000	.789178-003	.00000	.000000

MAXIMUMS

NODE	7	10	5	1	23	22
VALUE	.302890-001	.360956-001	.815884-002	-.148418-00.	.189053-002	.343282-002

DISPLACEMENT INCREMENT = .48510-002 AT NODE 28 CRITERION = .10000-002
PLASTICITY RATIO = .10000 AT ELEM 5 CRITERION = .10000-001
*** LOAD STEP 1 ITER 2 COMPLETED. TIME= .000000 TIME INC= .000000 NEW TRIANG MATRIX CUM ITER = 2

SARGENT & LUNDY ENGINEERS

37

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 13.9281 1/18/86 CP= 405.983

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 1 ITERATION= 3 CUM. ITER. = 3

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	.000000	.000000	.800784-002	-.151588-001	.000000	.000000
2	.439328-002	-.387383-002	.753804-002	-.124445-001	.161010-005	.584145-003
3	.874875-002	-.136662-001	.805878-002	-.519185-002	-.738961-004	.127846-002
4	.133217-001	-.106597-001	.777384-002	-.260218-003	-.131925-003	.204088-002
5	.184110-001	-.268112-002	.815410-002	-.854400-003	-.117233-003	.288280-002
6	.242589-001	.110324-001	.716996-002	-.807018-003	-.898577-004	.293017-002
7	.301598-001	.223077-001	.601868-002	-.549502-003	-.108945-002	.221257-002
8	.224872-001	.278940-001	.667832-002	.323545-003	-.606813-003	.112828-002
9	.188673-001	.324463-001	.712589-002	.839905-004	-.232308-003	.620800-003
10	.168557-001	.357552-001	.686067-002	.648470-004	-.808409-005	.413855-003
11	.139703-001	.342247-001	.698784-002	-.220623-003	-.609875-005	.417876-003
12	.111301-001	.326352-001	.698535-002	-.474235-003	-.147721-004	.413022-003
13	.832685-002	.311767-001	.699460-002	-.740243-003	-.184850-004	.374527-003
14	.554415-002	.297432-001	.693844-002	-.863386-003	-.151830-004	.291026-003
15	.276647-002	.280797-001	.692987-002	-.110983-002	-.117757-004	.161788-003
16	.000000	.276227-001	.688218-002	-.571411-003	.000000	.000000
17	.000000	.000000	.535801-002	.210174-002	.000000	.000000
18	.420455-002	-.113439-001	.561274-002	.897688-003	-.448387-004	-.317035-002
19	.843978-002	-.143081-001	.539208-002	.240525-002	-.2054 0-003	-.943927-003
20	.127889-001	-.104583-001	.545119-002	.229134-002	-.714023-004	.275062-002
21	.173077-001	.461465-003	.588176-002	.248644-002	.823647-004	.187271-002
22	.220800-001	.125901-001	.535238-002	.179743-002	.610320-003	.337323-002
23	.265582-001	.239187-001	.584206-002	.785278-003	.196578-002	.124861-002
24	.219165-001	.282468-001	.536073-002	.309584-003	.775324-003	.656407-003
25	.187679-001	.321402-001	.585201-002	.383731-004	.213438-003	.328300-003
26	.166051-001	.352894-001	.570212-002	-.205403-003	.134285-003	.469458-003
27	.138392-001	.335876-001	.582420-002	-.335395-003	.243646-004	.263957-003
28	.110616-001	.315826-001	.585483-002	-.504571-003	.452148-005	.542032-003
29	.826873-002	.288399-001	.581675-002	-.126993-002	.463870-005	.575530-003
30	.552007-002	.259455-001	.580742-002	-.238309-002	.187270-004	.493713-003
31	.275569-002	.217344-001	.576230-002	-.416309-002	.382675-004	.117330-002
32	.000000	.180859-001	.576985-002	-.622856-002	.000000	.000000
33	.000000	.000000	.450858-002	-.233128-004	.000000	.000000
34	.402810-002	-.605881-002	.484951-002	.307156-002	.145480-003	-.711158-003
35	.808327-002	-.696097-002	.451911-002	.395105-002	.144531-004	.275462-003
36	.121868-001	-.300634-002	.491928-002	.394265-002	.182981-005	.138024-002
37	.161832-001	.595337-002	.470067-002	.283856-002	.149058-003	.198178-002
38	.200448-001	.168527-001	.451758-002	.184897-002	.482075-003	.216503-002
39	.235496-001	.251551-001	.277042-002	.103621-002	.144189-002	.114729-002
40	.199406-001	.286740-001	.448489-002	.778779-004	.785484-003	.298828-003
41	.181941-001	.318590-001	.476529-002	-.144314-003	.258734-003	.370580-003
42	.164065-001	.349511-001	.487509-002	-.205920-003	.607921-004	.374880-003
43	.137187-001	.330551-001	.475410-002	-.145850-003	.222265-004	.426704-003
44	.109811-001	.305929-001	.478000-002	-.402311-003	.336588-005	.857478-003
45	.824614-002	.286267-001	.475542-002	-.875852-003	.134228-004	.101713-002
46	.549503-002	.213706-001	.474710-002	-.1481 1-002	.483612-004	.134323-002
47	.274453-002	.141712-001	.471887-002	-.201822-002	.143504-003	.141858-002
48	.000000	.885238-002	.472083-002	-.802535-004	.000000	.000000

SARGENT & LUNDY ENGINEERS

3308

48	.000000	.577742-002	.465910-002	-.248839-005	.000000	.000000
50	.000000	.281804-002	.461226-002	-.282373-004	.000000	.000000
51	.000000	.000000	.208644-002	-.289807-004	.000000	.000000

SARGENT & LUNDY

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8855

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 13.9281 1/18/88 CP= 406.193

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 1 ITERATION= 3 CUM. ITER.= 3

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	.380482-002	.580267-002	.215470-002	.303455-002	-.533438-004	.102982-002
53	.756837-002	.107447-001	.226376-002	.334808-002	-.118320-003	.957858-003
54	.111687-001	.152154-001	.228572-002	.334868-002	-.154619-003	.971142-003
55	.148789-001	.194462-001	.227873-002	.244366-002	-.124600-003	.108867-002
56	.177688-001	.234730-001	.197302-002	.115805-002	-.145175-003	.988478-003
57	.205242-001	.263950-001	.103541-002	.892002-004	-.833460-004	.630688-003
58	.182257-001	.292164-001	.192235-002	.982953-004	.112185-003	.208473-003
59	.174740-001	.321105-001	.221480-002	.528133-004	.926355-005	.176202-003
60	.162512-001	.348868-001	.210009-002	-.105802-004	.122867-004	.330318-003
61	.135777-001	.226789-001	.215279-002	.326277-004	.500955-005	.524815-003
62	.108030-001	.297748-001	.216016-002	.256818-004	-.122744-004	.738284-003
63	.820890-002	.257387-001	.215726-002	.399782-003	-.240178-004	.100866-002
64	.547117-002	.201124-001	.213847-002	.834937-003	-.653487-004	.133562-002
65	.273549-002	.138917-001	.212077-002	.154360-002	-.142657-003	.135842-002
66	.000000	.889918-002	.210580-002	.805329-003	.000000	.000000
67	.000000	.581005-002	.203184-002	.407283-004	.000000	.000000
68	.000000	.289921-002	.201142-002	-.434886-005	.000000	.000000
69	.000000	.000000	.000000	-.119513-001	.000000	.000000
70	.381468-002	.507006-002	.000000	-.742402-002	-.577062-004	.840815-004
71	.709758-002	.181551-001	.000000	-.406505-002	-.467580-004	.110181-003
72	.104870-001	.205429-001	.000000	-.210425-002	-.657016-004	.946456-004
73	.138638-001	.236022-001	.000000	-.818323-003	-.787869-004	.889787-004
74	.165330-001	.252896-001	.000000	-.284742-003	-.805585-005	.127484-003
75	.185776-001	.262803-001	.000000	-.738467-004	-.155894-003	.103188-003
76	.188255-001	.294937-001	.000000	.592032-004	-.523130-004	.107426-003
77	.178767-001	.321871-001	.000000	-.134813-004	-.305502-004	.238911-003
78	.161568-001	.348899-001	.000000	.394139-005	-.138241-004	.400312-003
79	.135295-001	.330406-001	.000000	.168638-003	-.218681-004	.500710-003
80	.108743-001	.308413-001	.000000	.333291-003	.842957-006	.520876-003
81	.818757-002	.286806-001	.000000	.494447-003	.159410-005	.472840-003
82	.547582-002	.270207-001	.000000	.711089-003	.137382-005	.381886-003
83	.274123-002	.257293-001	.000000	.784875-003	.217489-005	.197088-003
84	.000000	.252304-001	.000000	.763068-003	.000000	.000000

MAXIMUMS						
NODE	7	10	6	1	23	22
VALUE	.301686-001	.357552-001	.615410-002	-.161588-001	.186578-002	.337323-002

DISPLACEMENT INCREMENT = .18483-002 AT NODE 35 CRITERION = .10000-002
PLASTICITY RATIO = .46578-001 AT ELEM 6 CRITERION = .10000-001
*** LOAD STEP 1 ITER 3 COMPLETED TIME= .000000 TIME INC= .000000 NEW TRIANG MATRIX CUM. ITER.= 3

3308

SARGENT & LUNDY

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 13.9850 1/18/88 CP= 538.720

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 1 ITERATION= 4 CUM. ITER.= 4

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	.000000	.000000	.800811-002	-.150289-001	.000000	.000000
2	.439422-002	-.390315-002	.783656-002	-.123455-001	.255210-005	.585739-003
3	.875237-002	-.136943-001	.806062-002	-.503985-002	-.732668-014	.127841-002
4	.133268-001	-.106876-001	.777363-002	-.245023-002	-.131424-003	.203943-002
5	.184187-001	-.256725-002	.814876-002	-.722288-003	-.117838-003	.267733-002
6	.242590-001	.110634-001	.717781-002	-.722402-003	-.115344-003	.281327-002
7	.300655-001	.223482-001	.602603-002	-.550352-003	-.113457-002	.221236-002
8	.224580-001	.280330-001	.687713-002	.323208-003	-.632352-003	.112760-002
9	.188512-001	.324648-001	.712588-002	.838881-004	-.246394-003	.522516-003
10	.168562-001	.357935-001	.686043-002	.648082-004	-.912018-005	.415852-003
11	.139707-001	.342557-001	.698774-002	-.221601-003	.607819-005	.418396-003
12	.111304-001	.326584-001	.698824-002	-.475127-003	.147744-004	.414433-003
13	.832902-002	.311948-001	.699455-002	-.741540-003	.164883-004	.375800-003
14	.554425-002	.297567-001	.693634-002	-.864883-003	.151888-004	.281742-003
15	.276651-002	.290908-001	.692951-002	-.111116-002	.117863-004	.182145-003
16	.000000	.276327-001	.688200-002	-.872751-003	.000000	.000000
17	.000000	.000000	.535890-002	.208524-002	.000000	.000000
18	.420588-002	-.111430-001	.561317-002	.102844-002	-.493501-004	-.308787-002
19	.844178-002	-.138838-001	.538386-002	.261877-002	-.208581-003	-.902294-003
20	.127818-001	-.992145-002	.585134-002	.259812-002	-.718347-004	.273570-002
21	.173085-001	.828556-003	.558945-002	.258189-002	.804089-004	.182801-002
22	.220733-001	.127818-001	.535804-002	.185323-002	.805678-003	.334027-002
23	.268296-001	.239571-001	.544418-002	.803765-003	.195638-002	.122670-002
24	.219532-001	.262853-001	.536146-002	.311258-003	.739982-003	.648187-003
25	.187848-001	.321785-001	.585197-002	.480041-004	.182407-003	.332870-003
26	.168054-001	.353278-001	.570187-002	-.205687-003	.135804-003	.474779-003
27	.136285-001	.336106-001	.582413-002	-.340268-003	.245138-004	.285280-003
28	.110619-001	.315891-001	.585483-002	-.508781-003	.448860-005	.543291-003
29	.828888-002	.288522-001	.581672-002	-.127288-002	.459214-005	.580054-003
30	.552017-002	.259548-001	.580724-002	-.236527-002	.186935-004	.494398-003
31	.275572-002	.217406-001	.578218-002	-.416584-002	.381432-004	.117380-002
32	.000000	.180903-001	.576869-002	-.633160-002	.000000	.000000
33	.000000	.000000	.450821-002	-.214834-004	.000000	.000000
34	.402825-002	-.482427-002	.485028-002	.306841-002	.136753-003	-.628513-003
35	.809439-002	-.624484-002	.452178-002	.387981-002	.427827-005	.367181-003
36	.121661-001	-.203263-002	.482137-002	.388361-002	.205210-005	.136815-002
37	.161604-001	.689251-002	.470018-002	.293848-002	.159909-003	.180128-002
38	.200378-001	.171445-001	.455753-002	.172628-002	.486822-003	.208188-002
39	.235274-001	.251931-001	.277319-002	.102826-002	.142395-002	.110543-002
40	.300304-001	.287120-001	.448655-002	.783780-004	.774058-003	.297851-003
41	.182534-001	.319873-001	.476527-002	-.142563-003	.249629-003	.332219-003
42	.164067-001	.350292-001	.467586-002	-.205655-003	.613731-004	.343414-003
43	.137189-001	.330695-001	.475404-002	-.147558-003	.218271-004	.429083-003
44	.108813-001	.306023-001	.478001-002	-.403460-003	.312886-005	.657791-003
45	.824629-002	.286365-001	.475560-002	-.675886-003	.133413-004	.101736-002
46	.548512-002	.273267-001	.474703-002	-.948137-002	.494118-004	.134393-002
47	.274458-002	.141732-001	.471675-002	-.201673-002	.143584-003	.141724-002
48	.000000	.855267-00	.472048-002	-.804520-004	.000000	.000000

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49	.000000	.577769-002	.485831-002	-.352338-005	.000000	.000000
50	.000000	.291823-002	.461277-002	-.380068-004	.000000	.000000
51	.000000	.000000	.208705-002	-.308448-004	.000000	.000000

SARGENT & LUNDY

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 13.9850 1/18/85 CP= 538.906

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 1 ITERATION= 4 CUM. ITER. = 4

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	.360513-002	.603288-002	.215528-002	.297371-002	-.578289-004	.109078-002
53	.756828-002	.111883-001	.228523-002	.320379-002	-.108887-003	.103814-002
54	.111650-001	.160249-001	.230097-002	.320627-002	-.149494-003	.101349-002
55	.145755-001	.202668-001	.237828-002	.235408-002	-.129405-003	.103709-002
56	.177842-001	.238816-001	.197318-002	.110400-002	-.154142-003	.886819-003
57	.205184-001	.264319-001	.103656-002	.104311-003	-.777387-004	.579677-003
58	.163289-001	.292539-001	.192274-002	.852475-004	.125852-003	.208848-003
59	.175310-001	.321483-001	.221476-002	.507052-004	.179803-004	.188777-003
60	.162512-001	.350247-001	.209882-002	-.104984-004	.115032-004	.338544-003
61	.135777-001	.328979-001	.215377-002	.359280-004	.561595-005	.526328-003
62	.109031-001	.297365-001	.216018-002	.305595-004	-.120278-004	.729062-003
63	.820102-002	.257587-001	.215735-002	.404915-003	-.239228-004	.100863-002
64	.547205-002	.201298-001	.213841-002	.438588-003	-.654150-004	.133888-002
65	.273554-002	.137013-001	.212068-002	.154868-002	-.142857-003	.136043-002
66	.000000	.889921-002	.210565-002	.807082-003	.000000	.000000
67	.000000	.581008-002	.203188-002	.405606-004	.000000	.000000
68	.000000	.288927-002	.201190-002	-.466197-005	.000000	.000000
69	.000000	.000000	.000000	-.119497-001	.000000	.000000
70	.361621-002	.852512-002	.000000	-.789127-002	-.578905-004	.927476-004
71	.708478-002	.152678-001	.000000	-.418670-002	-.485805-004	.110116-003
72	.104982-001	.194770-001	.000000	-.284162-002	-.654212-004	.973741-004
73	.136817-001	.228316-001	.000000	-.121444-002	-.766943-004	.103887-003
74	.165305-001	.250587-001	.000000	-.412945-003	-.913435-005	.122142-003
75	.185748-001	.263970-001	.000000	-.737360-004	-.185347-003	.105454-003
76	.188285-001	.265309-001	.000000	.580913-004	-.575872-004	.107531-003
77	.178739-001	.322247-001	.000000	-.135184-004	-.315880-004	.236105-003
78	.161586-001	.350275-001	.000000	.398178-005	-.139068-004	.389851-003
79	.135294-001	.330841-001	.000000	.158659-003	-.209799-005	.500573-003
80	.106743-001	.306881-001	.000000	.337144-003	.648314-006	.521012-003
81	.818766-002	.287268-001	.000000	.488572-003	.160026-005	.473098-003
82	.547601-002	.270695-001	.000000	.717187-003	.137665-005	.361943-003
83	.274128-002	.257770-001	.000000	.770959-003	.217983-005	.187256-003
84	.000000	.252778-001	.000000	.788224-003	.000000	.000000

MAXIMUMS

NODE	7	10	5	1	23	22
VALUE	.300955-001	.357835-001	.814975-002	-.150269-001	.185838-002	.334027-002

DISPLACEMENT INCREMENT = .10859-002 AT NODE 72 CRITERION = .10000-002
PLASTICITY RATIO = .21952-001 AT ELEM 6 CRITERION = .10000-001
*** LOAD STEP 1 ITER 4 COMPLETED TIME= .000000 TIME INC= .000000 NEW TRIANG MATRIX CUM. ITER = 4

SARGENT & LUNDY

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.0011 1/18/85 CP= 668.572

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 1 ITERATION= 5 CUM. ITER. = 5

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	.000000	.000000	.800870-002	-.180733-001	.000000	.000000
2	.438427-002	-.388848-002	.752843-002	-.123981-001	.245347-005	.886784-003
3	.875259-002	-.136834-001	.806038-002	-.506586-002	-.734079-004	.128203-002
4	.133272-001	-.106637-001	.777287-002	-.248486-002	-.131528-003	.204329-002
5	.184205-001	-.250739-002	.814784-002	-.775974-003	-.117985-003	.266058-002
6	.242578-001	.111227-001	.718201-002	-.774286-003	-.122882-003	.291062-002
7	.300646-001	.222582-001	.602811-002	-.561422-003	-.115623-002	.221585-002
8	.224420-001	.278426-001	.687768-002	.323039-003	-.840092-003	.112887-002
9	.188420-001	.323846-001	.712586-002	.838681-004	-.245288-003	.822367-003
10	.168561-001	.357036-001	.686023-002	.648835-004	-.910648-005	.614690-003
11	.139708-001	.341704-001	.694745-002	-.220681-003	-.804178-005	.417946-003
12	.111302-001	.325787-001	.684834-002	-.473757-003	-.147382-004	.412687-003
13	.832883-002	.311216-001	.699485-002	-.738222-003	-.184573-004	.374154-003
14	.554413-002	.296885-001	.693857-002	-.862058-003	-.151471-004	.280624-003
15	.276848-002	.290262-001	.692982-002	-.110770-002	-.117373-004	.161530-003
16	.000000	.275730-001	.688251-002	-.570933-003	.000000	.000000
17	.000000	.000000	.538044-002	.209218-002	.000000	.000000
18	.420548-002	-.112120-001	.581338-002	.887534-003	-.479012-004	-.313318-002
19	.844141-002	-.140724-001	.639379-002	.251153-002	-.208814-003	-.830313-003
20	.127819-001	-.101503-001	.685089-002	.244435-002	-.724362-004	.275684-002
21	.173098-001	.724158-003	.685806-002	.256069-002	.907780-004	.185784-002
22	.220695-001	.127078-001	.635798-002	.178724-002	.601709-003	.332881-002
23	.265180-001	.238868-001	.684572-002	.807133-003	.195228-003	.122083-002
24	.219398-001	.281948-001	.636200-002	.311954-003	.746597-003	.862472-003
25	.187780-001	.320480-001	.685209-002	.398284-004	.187434-003	.328813-003
26	.168053-001	.352374-001	.670167-002	-.205974-003	.135413-003	.474682-003
27	.138393-001	.335285-001	.682405-002	-.338228-003	.245536-004	.263558-003
28	.111817-001	.315255-001	.685482-002	-.505892-003	.454053-005	.841588-003
29	.828872-002	.287879-001	.681840-002	-.126818-002	.460835-005	.576135-003
30	.552008-002	.253000-001	.680753-002	-.238753-002	.186426-004	.482707-003
31	.275588-002	.216988-001	.676248-002	-.416232-002	.380356-004	.117022-002
32	.000000	.180808-001	.677008-002	-.831181-002	.000000	.000000
33	.000000	.000000	.450860-002	-.225111-004	.000000	.000000
34	.402458-002	-.493836-002	.485038-002	.306636-002	.141568-003	-.671847-003
35	.809353-002	-.680842-002	.452088-002	.384570-002	.894887-005	.320443-003
36	.121858-001	-.251188-002	.491587-002	.393639-002	.221344-005	.138881-002
37	.161786-001	.633615-002	.469854-002	.285235-002	.155547-003	.184062-002
38	.200348-001	.169805-001	.455735-002	.188671-002	.484616-003	.211546-002
39	.235313-001	.251027-001	.477493-002	.103067-002	.142978-002	.111877-002
40	.199969-001	.286213-001	.449810-002	.788435-004	.780703-003	.294838-003
41	.162289-001	.319085-001	.476539-002	-.147303-003	.252208-003	.327780-003
42	.184088-001	.349388-001	.467587-002	-.208027-003	.613439-004	.378731-003
43	.137187-001	.329156-001	.475386-002	-.146561-003	.221004-004	.428883-002
44	.108911-001	.305336-001	.475000-002	-.402248-003	.328173-005	.855758-003
45	.824614-002	.285291-001	.475648-002	-.874348-003	.133383-004	.101424-002
46	.548503-002	.212887-001	.474718-002	-.147723-002	.492481-004	.133984-002
47	.274453-002	.141581-001	.471887-002	-.201075-002	.143130-003	.141277-002
48	.000000	.885243-002	.472074-002	-.801109-004	.000000	.000000

SARGENT & LUNDY

49	.000000	.577751-002	.485960-002	-.249578-005	.000000	.000000
50	.000000	.281805-002	.461309-002	-.281383-004	.000000	.000000
51	.000000	.000000	.208730-002	-.295485-004	.000000	.000000

SARGENT & LUNDY

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-680-6855

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.0011 1/18/86 CP= 868.739

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 1 ITERATION= 5 CUM. ITER.= 5

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	.380435-002	.693079-002	.215516-002	.299962-002	.843422-004	.104982-002
53	.756527-002	.108742-001	.228438-002	.326970-002	-.112852-003	.988810-003
54	.111643-001	.154911-001	.229842-002	.328415-002	-.151932-003	.980938-003
55	.146748-001	.197486-001	.237855-002	.238116-002	-.126597-003	.108784-002
56	.177630-001	.235940-001	.197285-002	.112867-002	-.148354-003	.951283-003
57	.205176-001	.263410-001	.103736-002	.101621-003	-.868757-004	.804594-003
58	.182762-001	.291628-001	.192306-002	.967955-004	.120686-003	.208115-002
59	.175034-001	.320571-001	.221488-002	.515408-004	.148272-004	.182801-003
60	.182511-001	.349335-001	.209582-002	-.104505-004	.117219-004	.334464-003
61	.135778-001	.328185-001	.215370-002	.343198-004	.623533-005	.524612-003
62	.109028-001	.297248-001	.218017-002	.280403-004	-.121291-004	.737263-003
63	.820083-002	.266586-001	.215739-002	.400809-003	-.238251-004	.100578-002
64	.547183-002	.200884-001	.213851-002	.834397-003	-.652031-004	.133216-002
65	.273547-002	.136804-001	.212086-002	.154083-002	-.142371-003	.135521-002
66	.000000	.869886-002	.210592-002	.604270-003	.000000	.000000
67	.000000	.580988-002	.203215-002	.405441-004	.000000	.000000
68	.000000	.289814-002	.201220-002	-.448514-005	.000000	.000000
69	.000000	.000000	.000000	-.118277-001	.000000	.000000
70	.381488-002	.882240-002	.000000	-.751871-002	-.576822-004	.831230-004
71	.709718-002	.157614-001	.000000	-.423097-002	-.485688-004	.108587-003
72	.104948-001	.200682-001	.000000	-.231345-002	-.854393-004	.952528-004
73	.138809-001	.232310-001	.000000	-.978368-003	-.787305-004	.100454-003
74	.165298-001	.251283-001	.000000	-.336779-003	-.918641-005	.128832-003
75	.195734-001	.253063-001	.000000	-.737488-004	-.155442-003	.103945-003
76	.188239-001	.294396-001	.000000	.590838-004	-.841456-004	.107454-003
77	.178730-001	.321334-001	.000000	-.134682-004	-.305795-004	.236413-003
78	.161566-001	.349383-001	.000000	.391318-005	-.138144-004	.399486-003
79	.135293-001	.329927-001	.000000	.157163-003	-.224601-004	.488748-003
80	.108740-001	.307868-001	.000000	.334202-003	.436335-005	.518866-003
81	.818740-002	.286431-001	.000000	.495519-003	.158252-005	.471845-003
82	.547580-002	.259858-001	.000000	.711048-003	.136025-005	.361001-003
83	.274116-002	.256578-001	.000000	.765691-003	.218713-005	.195721-003
84	.000000	.252002-001	.000000	.784025-003	.000000	.000000

MAXIMUMS

NODE	7	10	5	1	23	22
VALUE	.300848-001	.357036-001	.814784-002	-.150733-001	.195226-002	.332881-002

DISPLACEMENT INCREMENT = .58825-003 AT NODE 72 CRITERION = .10000-002
PLASTICITY RATIO = .10309-001 AT ELEM 6 CRITERION = .10000-001

*** LOAD STEP 1 ITER 5 COMPLETED. TIME= .000000 TIME INC= .000000 NEW TRIANG MATRIX CUM. ITER.= 5

SARGENT & LUNDY

3308

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 *        ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1        C      SARGENT & LUNDY  JAN 1,1983
    SWANSON ANALYSIS SYSTEMS, INC          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304   TWX 510-690-8655

 HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE                14.0372   1/18/86 CP=     798.779

 ***** DISPLACEMENT SOLUTION *****  TIME =    .00000     LOAD STEP=     1  ITERATION=     8  CUM. ITER.=     6
   NODE        UX              UY              UZ             ROTX            ROTY            ROTZ

      1     .000000         .000000         .800988-002   -.150341-001     .000000         .000000
      2     .439435-002    -.388103-002     .753867-002   -.123624-001     .248038-005     .588988-003
      3     .679314-002    -.136737-001     .806071-002   -.505174-002    -.733243-004     .122184-002
      4     .133284-001    -.106536-001     .777288-002   -.248181-002    -.131372-003     .204232-002
      5     .184224-001    -.250258-002     .814589-002   -.743958-003    -.118028-003     .287863-002
      6     .242579-001     .111247-001     .716379-002   -.749052-003    -.126298-003     .290821-002
      7     .300503-001     .222721-001     .802928-002   -.551588-003    -.118826-002     .221530-002
      8     .224337-001     .279560-001     .887788-002    .322962-003    -.647164-003     .112811-002
      9     .188379-001     .324079-001     .712958-002    .838381-004    -.253058-003     .822893-003
     10     .188562-001     .357168-001     .886019-002    .646689-004    -.912329-005     .415469-003
     11     .139707-001     .341814-001     .888782-002   -.220955-003    -.803878-005     .418474-003
     12     .111303-001     .325443-001     .898834-002   -.474034-003    -.147415-004     .413308-003
     13     .832589-002     .311285-001     .899463-002   -.738635-003    -.184821-004     .374497-003
     14     .554417-002     .296951-001     .893654-002   -.862478-003    -.151526-004     .290858-003
     15     .276649-002     .290309-001     .892986-002   -.110814-002    -.117413-004     .181649-003
     16     .000000         .275774-001     .888244-002   -.571349-003     .000000         .000000
     17     .000000         .000000         .536054-002    .208683-002     .000000         .000000
     18     .420580-002    -.111578-001     .561350-002    .101120-002    -.467828-004    -.310322-002
     19     .844190-002    -.139439-001     .539420-002    .257239-002    -.209220-003    -.915163-003
     20     .127923-001    -.899913-002     .585075-002    .252682-002    -.720490-004     .274684-002
     21     .173103-001     .814458-003     .585758-002    .283482-002     .900882-004     .184245-002
     22     .220881-001     .127115-001     .535879-002    .181118-002     .600872-003     .332398-002
     23     .285065-001     .238801-001     .584617-002    .808954-003     .195081-002     .121806-002
     24     .219482-001     .262082-001     .536215-002    .312520-003     .737384-003     .658399-003
     25     .187862-001     .221014-001     .585208-002    .401083-004     .181818-003     .327781-003
     26     .166054-001     .252507-001     .570162-002   -.205065-003     .135727-003     .476081-003
     27     .138394-001     .335373-001     .582404-002   -.339514-003     .245890-004     .283989-003
     28     .110618-001     .315223-001     .585483-002   -.507154-003     .452947-005     .542031-003
     29     .828878-002     .287932-001     .581679-002   -.126910-002     .459879-005     .578350-003
     30     .552010-002     .259041-001     .580750-002   -.225831-002     .185346-004     .492950-003
     31     .275571-002     .217024-001     .576243-002   -.415335-002     .378952-004     .117049-002
     32     .000000         .180628-001     .577001-002   -.831318-002     .000000         .000000
     33     .000000         .000000         .450989-002   -.217989-004     .000000         .000000
     34     .402884-002    -.488370-002     .465058-002    .307586-002     .135497-003    -.644848-003
     35     .809388-002    -.638718-002     .482158-002    .398271-002     .693349-005     .347188-003
     36     .121855-001    -.222785-002     .492050-002    .398706-002     .259080-005     .138858-002
     37     .161749-001     .854332-002     .469852-002    .289280-002     .158851-003     .181513-002
     38     .200333-001     .170551-001     .455734-002    .188643-002     .485801-003     .209190-002
     39     .235286-001     .251160-001     .277553-003    .102901-002     .142644-002     .110808-002
     40     .200203-001     .286346-001     .449821-002    .752804-004     .778867-003     .298325-003
     41     .182448-001     .319198-001     .476538-002   -.142838-003     .250041-003     .330877-003
     42     .164086-001     .349518-001     .467583-002   -.205893-003     .614878-004     .382077-003
     43     .137188-001     .329880-001     .475395-002   -.147074-003     .220228-004     .427593-003
     44     .108912-001     .305383-001     .479001-002   -.402821-003     .318779-005     .455037-003
     45     .824620-002     .285838-001     .475548-002   -.674432-003     .133170-004     .101443-002
     46     .549506-002     .212895-001     .474715-002   -.147743-002     .482639-004     .133995-002
     47     .274455-002     .141572-001     .471883-002   -.201105-002     .143185-003     .141308-002
     48     .000000         .885253-002     .472070-002   -.801587-004     .000000         .000000
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     49     .000000         .577780-002     .485862-002   -.250328-005     .000000         .000000
     50     .000000         .291816-002     .481316-002   -.280429-004     .000000         .000000
     51     .000000         .000000         .208741-002   -.302325-004     .000000         .000000
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SARGENT & LUNDY

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.0372 1/18/86 CP= 798.944

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 1 ITERATION= 6 CUM. ITER. = 6

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	.380458-002	.599136-002	.215535-002	.288178-002	-.564595-004	.107470-002
53	.756534-002	.110629-001	.226481-002	.322938-002	-.110365-003	.101800-002
54	.111838-001	.158003-001	.230003-002	.322670-002	-.150735-003	.100109-002
55	.145740-001	.200279-001	.237687-002	.236621-002	-.128551-003	.104634-002
56	.177620-001	.237271-001	.197284-002	.111165-002	-.152068-003	.917566-003
57	.205185-001	.263540-001	.103782-002	.103288-003	-.785618-004	.588889-003
58	.182073-001	.291760-001	.192314-002	.958357-004	.124222-003	.208322-003
59	.175204-001	.320703-001	.221485-002	.508221-004	.168971-004	.188578-003
60	.162511-001	.349468-001	.209878-002	-.104332-004	.114805-004	.338885-003
61	.135778-001	.328260-001	.215370-002	.352006-004	.534958-005	.525105-003
62	.109029-001	.297317-001	.216017-002	.282459-004	-.120605-004	.737291-003
63	.820088-002	.257036-001	.215739-002	.402205-003	-.239009-004	.100584-002
64	.547195-002	.200911-001	.213850-002	.825801-003	-.652273-004	.133257-002
65	.273549-002	.136834-001	.212082-002	.154240-002	-.142462-003	.135587-002
66	.000000	.869901-002	.210587-002	.604786-003	.000000	.000000
67	.000000	.580982-002	.203219-002	.405003-004	.000000	.000000
68	.000000	.289918-002	.201227-002	-.461326-005	.000000	.000000
69	.000000	.000000	.000000	-.118313-001	.000000	.000000
70	.381527-002	.864009-002	.000000	-.781330-002	-.576949-004	.924091-004
71	.709762-002	.154685-001	.000000	-.438401-002	-.485248-004	.109103-003
72	.104948-001	.196851-001	.000000	-.250504-002	-.852543-004	.955387-004
73	.138805-001	.228657-001	.000000	-.111559-002	-.786811-004	.101434-003
74	.165293-001	.250604-001	.000000	-.382405-003	-.917410-005	.128943-003
75	.185728-001	.263183-001	.000000	-.737488-004	-.155317-003	.104386-003
76	.188258-001	.294527-001	.000000	.880703-004	-.558262-004	.107466-003
77	.176730-001	.321466-001	.000000	-.134761-004	-.309531-004	.236255-003
78	.161566-001	.349485-001	.000000	.382802-005	-.138350-004	.359403-003
79	.135293-001	.330069-001	.000000	.157697-003	-.222358-005	.499803-003
80	.108741-001	.308135-001	.000000	.335218-003	.639972-006	.520006-003
81	.818745-002	.286578-001	.000000	.496886-003	.158444-005	.472083-003
82	.547584-002	.270015-001	.000000	.713659-003	.136201-005	.361120-003
83	.274119-002	.257120-001	.000000	.787306-003	.216862-005	.196790-003
84	.000000	.252141-001	.000000	.785652-003	.000000	.000000

MAXIMUMS

NODE	7	10	5	1	23	22
VALUE	.300503-001	.357168-001	.814888-002	-.150341-001	.195081-002	.332386-002

DISPLACEMENT INCREMENT = .37014-003 AT NODE 72 CRITERION = .10000-002
PLASTICITY RATIO = .48766-002 AT ELEM 8 CRITERION = .10000-001
*** LOAD STEP 1 ITER 6 COMPLETED TIME= .000000 TIME INC= .000000 NEW TRIANG MATRIX CUM. ITER = 6

*** SOLUTION CONVERGED - LOAD STEP 1 CONVERGED AFTER ITERATION 6 CUM. ITER. = 6
NEXT ITERATION IDENTIFIED AS ITERATION 20 SATISFIES PRINTOUT OR POST DATA REQUEST

SARGENT & LUNDY

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.0450 1/18/86 CP= 826.323

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 1 ITERATION= 20 CUM. ITER. = 7

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	.000000	.000000	.800988-002	-.150341-001	.000000	.000000
2	.439435-002	-.388103-002	.753867-002	-.123624-001	.248038-005	.558988-003
3	.875314-002	-.136737-001	.806071-002	-.505124-002	-.733243-004	.128184-002
4	.133284-001	-.106538-001	.777288-002	-.246181-002	-.131372-003	.204232-002
5	.184224-001	-.260258-002	.814888-002	-.743955-003	-.118028-003	.267863-002
6	.242578-001	.111247-001	.718375-002	-.749052-003	-.126288-003	.296821-002
7	.300503-001	.222721-001	.802928-002	-.551586-003	-.116626-002	.221530-002
8	.224337-001	.278560-001	.667786-002	.322952-003	-.647164-003	.112911-002
9	.186379-001	.324078-001	.712596-002	.838391-004	-.253056-003	.622893-003
10	.168562-001	.357168-001	.686018-002	.648689-004	-.912329-005	.415489-003
11	.139707-001	.341814-001	.688763-002	-.220959-003	-.003978-005	.418474-003
12	.111303-001	.325883-001	.684834-002	-.474034-003	-.147415-004	.413309-003
13	.832889-002	.311285-001	.699463-002	-.739625-003	-.184821-004	.374497-003
14	.554417-002	.296951-001	.683654-002	-.882479-003	-.151526-004	.290858-003
15	.276649-002	.290309-001	.692986-002	-.110814-002	-.117413-004	.181649-003
16	.000000	.275774-001	.688244-002	-.671348-003	.000000	.000000
17	.000000	.000000	.538054-002	.208683-002	.000000	.000000
18	.420580-002	-.111579-001	.561350-002	.101120-002	-.487828-004	-.310322-002
19	.844180-002	-.139438-001	.539420-002	.257239-002	-.209220-003	-.815163-003
20	.127923-001	-.859913-002	.585075-002	.252692-002	-.720480-004	.274884-002
21	.173103-001	.414458-003	.565758-002	.263482-002	.900682-004	.184245-002
22	.220881-001	.127415-001	.535879-002	.181118-002	.600672-003	.332398-002
23	.265085-001	.238801-001	.564617-002	.808954-003	.195081-002	.121806-002
24	.219482-001	.282052-001	.536219-002	.312520-003	.737384-003	.659389-003
25	.187862-001	.321014-001	.585208-002	.401083-004	.191818-003	.327781-003
26	.166054-001	.352507-001	.570162-002	-.208085-003	.135727-003	.476081-003
27	.138394-001	.335373-001	.582404-002	-.339514-003	.245880-004	.283999-003
28	.110618-001	.315323-001	.585483-002	-.507154-003	.452947-005	.542031-003
29	.826878-002	.287932-001	.581678-002	-.128910-002	.459578-005	.578350-003
30	.552010-002	.259041-001	.580750-002	-.235831-002	.186346-004	.492950-003
31	.275571-002	.217024-001	.576243-002	-.415335-002	.379852-004	.117049-002
32	.000000	.180826-001	.577001-002	-.831318-002	.000000	.000000
33	.000000	.000000	.410969-002	-.217969-004	.000000	.000000
34	.402894-002	-.486470-002	.465055-002	.307588-002	.138487-003	-.644848-003
35	.809388-002	-.638718-002	.452159-002	.396271-002	.893349-005	.347168-003
36	.121855-001	-.222765-002	.492050-002	.396706-002	.259080-005	.136658-002
37	.161789-001	.654332-002	.469852-002	.289260-002	.156851-003	.191513-002
38	.200333-001	.170551-001	.455734-002	.169642-002	.485801-003	.209190-002
39	.235286-001	.251160-001	.477553-002	.102901-002	.142644-002	.110808-002
40	.200203-001	.286348-001	.449821-002	.782804-004	.775867-003	.298325-003
41	.182448-001	.318198-001	.476538-002	-.142838-003	.250041-003	.330877-003
42	.164066-001	.349518-001	.467583-002	-.205993-003	.614876-004	.382077-003
43	.137188-001	.329980-001	.475398-002	-.147074-003	.220228-004	.427883-003
44	.109912-001	.305383-001	.478001-002	-.402621-003	.318779-005	.855937-003
45	.824820-002	.285839-001	.475545-002	-.674432-003	.133170-004	.101443-002
46	.549508-002	.212895-001	.474715-002	-.147743-002	.492639-004	.133996-002
47	.274455-002	.141572-001	.471693-002	-.201106-002	.143185-003	.141308-002
48	.000000	.865253-002	.472070-002	-.801587-004	.000000	.000000

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49	.000000	577750-002	465862-002	-.250328-005	.000000	.000000
50	.000000	281818-002	461316-002	-.280429-004	.000000	.000000
51	.000000	.000000	208741-002	-.302325-004	.000000	.000000

SARGENT & LUNDY

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.0450 1/18/83 CP= 826.494

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 1 ITERATION= 20 CUM. ITER.= 7

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	.380458-002	.899136-002	.215535-002	.288175-003	-.884595-004	.107470-002
53	.768534-002	.110828-001	.228491-002	.322938-002	-.110365-003	.101800-002
54	.111839-001	.158003-001	.230003-002	.322870-002	-.150735-003	.100109-002
55	.145740-001	.200278-001	.237867-002	.238821-002	-.128551-003	.104634-002
56	.177820-001	.237271-001	.187294-002	.111165-002	-.152068-003	.817568-003
57	.205185-001	.263540-001	.103762-002	.103258-003	-.768818-004	.588488-003
58	.183073-001	.281760-001	.182314-002	.858357-004	.124222-003	.208322-003
59	.175206-001	.320703-001	.221485-002	.509221-004	.169871-004	.186576-003
60	.182511-001	.349468-001	.209578-002	-.104332-004	.114905-004	.338895-003
61	.135776-001	.328280-001	.215370-002	.352004-004	.534959-005	.525105-003
62	.108029-001	.297317-001	.216017-002	.292850-004	-.120605-004	.737291-003
63	.820088-002	.257036-001	.215739-002	.402205-003	-.239009-004	.100584-002
64	.547198-002	.200911-001	.213850-002	.835801-003	-.652273-004	.133257-002
65	.273545-002	.136834-001	.212042-002	.154340-002	-.142462-003	.135567-002
66	.000000	.889901-002	.210567-002	.804785-003	.000000	.000000
67	.000000	.580992-002	.203217-002	.405003-004	.000000	.000000
68	.000000	.289918-002	.201227-002	-.461326-005	.000000	.000000
69	.000000	.000000	.000000	-.119313-001	.000000	.000000
70	.361527-002	.884009-002	.000000	-.781330-002	-.578949-004	.824081-004
71	.708782-002	.154685-001	.000000	-.438401-002	-.485248-004	.109103-003
72	.104944-001	.196951-001	.000000	-.250504-002	-.853543-004	.955367-004
73	.136805-001	.229657-001	.000000	-.111559-002	-.788811-004	.101434-003
74	.165293-001	.250504-001	.000000	-.382405-003	-.917410-005	.129843-003
75	.185728-001	.263193-001	.000000	-.737459-004	-.155317-003	.104366-003
76	.188258-001	.294527-001	.000000	.580703-004	-.558282-004	.107486-003
77	.178730-001	.321468-001	.000000	-.134741-004	-.309831-004	.236258-003
78	.161565-001	.348495-001	.000000	.382802-005	-.136350-004	.398403-003
79	.135393-001	.330065-001	.000000	.157897-003	-.222388-005	.498803-003
80	.108741-001	.308135-001	.000000	.335215-003	.639872-005	.520006-003
81	.[illegible]745-002	.288578-001	.000000	.488858-003	.158444-005	.472083-003
82	.847584-002	.270015-001	.000000	.713658-003	.136201-005	.381120-003
83	.[illegible]8-002	.257120-001	.000000	.787306-003	.216882-005	.188780-003
84	.000000	.252141-001	.000000	.785652-003	.000000	.000000

MAXIMUMS						
NODE	7	10	6	1	23	22
VALUE	.320503-001	.357168-001	.814689-002	-.150341-001	.195081-002	.332386-002

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3308

EL= 1 NODES= 1 2 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 299.80 3-D THIN-WALL BEAM 24
CENTROID= .4844 1.453 SHEAR CENTER= .0000 1.937 AREA= .4844 J= .2523-002 IW= .5700-036
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	299.80	-16869.	-.0005607	.0000000	.0000000	.0000000	.0000000
	2	299.80	-23885.	-.0008433	.0000000	.0000000	.0000000	.0000000
	3	299.80	-18841.	-.0006567	.0000000	.0000000	.0000000	.0000000
END J	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	299.80	-28468.	-.0010059	.0000000	.0000000	.0000000	.0000000
	2	299.80	-20400.	-.0007208	.0000000	.0000000	.0000000	.0000000
	3	299.80	-12972.	-.0004584	.0000000	.0000000	.0000000	.0000000

FORCES ON MEMBER AT NODE 1 8958.73 -43.8119 -319.416 -14.9217 781.720 510.735
2 -8958.73 43.8119 319.416 14.9217 788.742 -726.144

EL= 2 NODES= 3 3 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 299.80 3-D THIN-WALL BEAM 24
CENTROID= .4844 1.453 SHEAR CENTER= .0000 1.937 AREA= .4844 J= .2523-002 IW= .5700-036
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	299.80	-23146.	-.0008179	.0000000	.0000000	.0000000	.0000000
	2	299.80	-20531.	-.0007255	.0000000	.0000000	.0000000	.0000000
	3	299.80	-14861.	-.0005258	.0000000	.0000000	.0000000	.0000000
END J	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	299.80	-21506.	-.0007599	.0000000	.0000000	.0000000	.0000000
	2	299.80	-22618.	-.0007991	.0000000	.0000000	.0000000	.0000000
	3	299.80	-12351.	-.0004364	.0000000	.0000000	.0000000	.0000000

FORCES ON MEMBER AT NODE 3 8577.13 -81.7557 74.0810 -40.8350 -255.627 552.334
3 -8577.13 81.7557 -74.0810 40.8350 -108.508 -1003.47

EL= 3 NODES= 3 4 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 299.80 3-D THIN-WALL BEAM 24
CENTROID= .4844 1.453 SHEAR CENTER= .0000 1.937 AREA= .4844 J= .2523-002 IW= .5700-036
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	299.80	-12520.	-.0004424	.0000000	.0000000	.0000000	.0000000
	2	299.80	-22696.	-.0008023	.0000000	.0000000	.0000000	.0000000
	3	299.80	-15037.	-.0005667	.0000000	.0000000	.0000000	.0000000
END J	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	299.80	-29741.	-.0010509	.0000000	.0000000	.0000000	.0000000
	2	299.80	-18170.	-.0006420	.0000000	.0000000	.0000000	.0000000
	3	299.80	-7468.6	-.0002780	.0000000	.0000000	.0000000	.0000000

FORCES ON MEMBER AT NODE 3 8954.86 -72.4203 -432.413 -14.4618 984.654 650.578
4 -8954.86 72.4203 432.413 14.4618 1131.18 -1007.05

EL= 4 NODES= 4 5 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 299.80 3-D THIN-WALL BEAM 24
CENTROID= .4844 1.453 SHEAR CENTER= .0000 1.937 AREA= .4844 J= .2523-002 IW= .5700-036
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	299.80	-15284.	-.0005401	.0000000	.0000000	.0000000	.0000000

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	2	299.80	-18548.	-.0006554	.0000000	.0000000	.0000000	.0000000
	3	299.80	-13286.	-.0004695	.0000000	.0000000	.0000000	.0000000
END J	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	299.80	-20939.	-.0007399	.0000000	.0000000	.0000000	.0000000
	2	299.80	-17846.	-.0006320	.0000000	.0000000	.0000000	.0000000
	3	299.80	-8957.7	-.0003186	.0000000	.0000000	.0000000	.0000000

FORCES ON MEMBER AT NODE 4 7951.84 -72.8851 -125.602 -9.59484 319.082 514.422
5 -7951.84 72.8851 125.602 9.59484 288.461 -872.774

EL= 5 NODES= 5 6 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 299.80 3-D THIN-WALL BEAM 24
CENTROID= .4844 1.453 SHEAR CENTER= .0000 1.937 AREA= .4844 J= .2523-002 IW= .5700-036
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	299.80	2503.9	.0000885	.0000000	.0000000	.0000000	.0000000
	2	299.80	-18531.	-.0006548	.0000000	.0000000	.0000000	.0000000
	3	299.80	-17713.	-.0006259	.0000000	.0000000	.0000000	.0000000
END J	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	299.80	-30050.	-.0010618	.0000000	.0000000	.0000000	.0000000
	2	299.80	-8826.5	-.0003119	.0000000	.0000000	.0000000	.0000000
	3	299.80	-4568.9	-.0001614	.0000000	.0000000	.0000000	.0000000

FORCES ON MEMBER AT NODE 5 6329.74 -68.3808 -840.220 .288415-001 2058.35 80.0041
6 -6329.74 68.3808 840.220 -.288415-001 2074.73 -418.210

EL= 6 NODES= 6 7 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 299.80 3-D THIN-WALL BEAM 24
CENTROID= .4844 1.453 SHEAR CENTER= .0000 1.937 AREA= .4844 J= .2523-002 IW= .5700-036
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	299.80	22783.	.0008050	.0000000	.0000000	.0000000	.0000000
	2	299.80	-10337.	-.0003653	.0000000	.0000000	.0000000	.0000000
	3	299.80	-24186.	-.0008548	.0000000	.0000000	.0000000	.0000000
END J	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	299.80	-36582.	-.0012926	-.0005058	.0000000	.0000000	.0000000
	2	299.80	5418.5	.0001915	.0000000	.0000000	.0000000	.0000000
	3	299.80	3843.7	.0001358	.0000000	.0000000	.0000000	.0000000

FORCES ON MEMBER AT NODE 6 2673.42 -75.3887 -1497.17 -1.09075 3237.73 -1353.86
7 -2673.42 75.3887 1497.17 1.09075 4123.37 983.189

EL= 7 NODES= 7 8 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 256.43 3-D THIN-WALL BEAM 24
CENTROID= .4844 1.453 SHEAR CENTER= .0000 1.937 AREA= .4844 J= .2523-002 IW= .5700-036
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	256.43	-17800.	-.0006186	.0000000	.0000000	.0000000	.0000000
	2	256.43	6125.7	.0002153	.0000000	.0000000	.0000000	.0000000
	3	256.43	-8899.3	-.0003057	.0000000	.0000000	.0000000	.0000000
END J	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	256.43	2638.9	.0000827	.0000000	.0000000	.0000000	.0000000
	2	256.43	-3013.4	-.0001059	.0000000	.0000000	.0000000	.0000000
	3	256.43	-10660.	-.0003747	.0000000	.0000000	.0000000	.0000000

FORCES ON MEMBER AT NODE 7 1701.14 -131.572 538.493 -2.67991 -2315.41 -1449.26
8 -1701.14 131.572 -538.493 2.67991 -552.551 747.547

EL= 8 NODES= 8 9 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 180.04 3-D THIN-WALL BEAM 24
CENTROID= .4844 1.453 SHEAR CENTER= .0000 1.937 AREA= .4844 J= .2523-002 IW= .5700-036
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

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3305

END I PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	190.04	6788.5	.0002387	.0000000	.0000000	.0000000	.0000000
2	190.04	-3158.2	-.0001101	.0000000	.0000000	.0000000	.0000000
3	190.04	-12129.	-.0004228	.0000000	.0000000	.0000000	.0000000
END J PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	190.04	-6247.7	-.0002178	.0000000	.0000000	.0000000	.0000000
2	190.04	-1278.8	-.0000446	.0000000	.0000000	.0000000	.0000000
3	190.04	-2856.5	-.0000996	.0000000	.0000000	.0000000	.0000000
FORCES ON MEMBER AT NODE 8		1411.56	-135.511	-273.306	-2.05734	972.370	-878.971
9		-1411.56	135.511	273.306	2.05734	465.262	164.245

EL= 9 NODES= 9 10 MAT= 2 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 183.76 3-D THIN-WALL BEAM 24
CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-036
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	183.76	6342.3	.0002204	.0000000	.0000000	.0000000	.0000000
2	183.76	-1641.0	-.0000570	.0000000	.0000000	.0000000	.0000000
3	183.76	-7522.4	-.0002614	.0000000	.0000000	.0000000	.0000000
END J PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	183.76	-7192.8	-.0002500	.0000000	.0000000	.0000000	.0000000
2	183.76	395.18	.0000137	.0000000	.0000000	.0000000	.0000000
3	183.76	1940.5	.0000674	.0000000	.0000000	.0000000	.0000000
FORCES ON MEMBER AT NODE 9		540.317	-136.129	-285.416	-1.27718	780.432	-574.957
10		-540.317	136.129	285.416	1.27718	741.788	-151.067

EL= 10 NODES= 10 11 MAT= 2 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 180.54 3-D THIN-WALL BEAM 24
CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-036
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	180.54	-2571.8	-.0000893	.0000000	.0000000	.0000000	.0000000
2	180.54	-257.58	-.0000089	.0000000	.0000000	.0000000	.0000000
3	180.54	304.77	.0000106	.0000000	.0000000	.0000000	.0000000
END J PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	180.54	1109.8	.0000386	.0000000	.0000000	.0000000	.0000000
2	180.54	-1132.4	-.0000393	.0000000	.0000000	.0000000	.0000000
3	180.54	-1827.2	-.0000585	.0000000	.0000000	.0000000	.0000000
FORCES ON MEMBER AT NODE 10		336.901	21.0192	90.5949	-1.62388	-226.231	54.9736
11		-336.901	-21.0192	-90.5949	1.62388	-219.194	48.3705

EL= 11 NODES= 11 12 MAT= 2 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 180.58 3-D THIN-WALL BEAM 24
CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-036
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	180.58	-1868.4	-.0000580	.0000000	.0000000	.0000000	.0000000
2	180.58	-1054.5	-.0000366	.0000000	.0000000	.0000000	.0000000
3	180.58	-591.09	-.0000205	.0000000	.0000000	.0000000	.0000000
END J PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	180.58	-339.84	-.0000118	.0000000	.0000000	.0000000	.0000000
2	180.58	-1149.3	-.0000399	.0000000	.0000000	.0000000	.0000000
3	180.58	-1730.0	-.0000601	.0000000	.0000000	.0000000	.0000000
FORCES ON MEMBER AT NODE 11		529.002	20.7606	28.2975	-1.43781	-60.0071	45.3060
12		-529.002	-20.7606	-28.2975	1.43781	-79.1221	54.7668

EL= 12 NODES= 12 13 MAT= 2 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 180.60 3-D THIN-WALL BEAM 24

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CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-036
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	180.60	-2219.8	-.0000771	.0000000	.0000000	.0000000	.0000000
2	180.60	-1087.5	-.0000381	.0000000	.0000000	.0000000	.0000000
3	180.60	-1026.5	-.0000357	.0000000	.0000000	.0000000	.0000000
END J PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	180.60	-253.05	-.0000088	.0000000	.0000000	.0000000	.0000000
2	180.60	-1412.3	-.0000491	.0000000	.0000000	.0000000	.0000000
3	180.60	-2363.8	-.0000821	.0000000	.0000000	.0000000	.0000000
FORCES ON MEMBER AT NODE 12		858.917	20.3303	45.3859	-1.50880	-109.732	8.93422
13		-858.917	-20.3303	-45.3859	1.50880	-113.322	93.0231

EL= 13 NODES= 13 14 MAT= 2 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 180.60 3-D THIN-WALL BEAM 24
CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-036
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	180.60	-1849.1	-.0000573	.0000000	.0000000	.0000000	.0000000
2	180.60	-1374.8	-.0000477	.0000000	.0000000	.0000000	.0000000
3	180.60	-1839.1	-.0000638	.0000000	.0000000	.0000000	.0000000
END J PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	180.60	-1019.2	-.0000354	.0000000	.0000000	.0000000	.0000000
2	180.60	-1261.7	-.0000438	.0000000	.0000000	.0000000	.0000000
3	180.60	-2894.8	-.0000838	.0000000	.0000000	.0000000	.0000000
FORCES ON MEMBER AT NODE 13		755.315	18.2804	10.2787	-.897873	-28.8345	-45.4043
14		-755.315	18.2804	-10.2787	.897873	-23.7023	140.101

EL= 14 NODES= 14 15 MAT= 2 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 180.60 3-D THIN-WALL BEAM 24
CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-036
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	180.60	-2086.3	-.0000725	.0000000	.0000000	.0000000	.0000000
2	180.60	-1225.8	-.0000426	.0000000	.0000000	.0000000	.0000000
3	180.60	-2311.9	-.0000803	.0000000	.0000000	.0000000	.0000000
END J PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	180.60	-686.49	-.0000232	.0000000	.0000000	.0000000	.0000000
2	180.60	-1446.0	-.0000502	.0000000	.0000000	.0000000	.0000000
3	180.60	-3291.4	-.0001143	.0000000	.0000000	.0000000	.0000000
FORCES ON MEMBER AT NODE 14		829.472	15.0958	32.6080	-1.39568	-84.1249	-106.178
15		-829.472	-15.0958	-32.6080	1.39568	-76.2029	180.400

EL= 15 NODES= 15 16 MAT= 2 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 180.60 3-D THIN-WALL BEAM 24
CENTROID= .4844 , 1.453 SHEAR CENTER= .0000 , 1.937 AREA= .4844 J= .2523-002 IW= .5700-036
PRINCIPLE M OF I: IYP= .1894 IZP= .1894 THETAP= .0000

END I PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	180.60	-1279.3	-.0000444	.0000000	.0000000	.0000000	.0000000
2	180.60	-1432.1	-.0000497	.0000000	.0000000	.0000000	.0000000
3	180.60	-3055.0	-.0001061	.0000000	.0000000	.0000000	.0000000
END J PT	TEMP	SIGX	EP	EPPL	EPOR	EPCR	EPSW
1	180.60	-1602.5	-.0000557	.0000000	.0000000	.0000000	.0000000
2	180.60	-1183.8	-.0000411	.0000000	.0000000	.0000000	.0000000
3	180.60	-3228.4	-.0001121	.0000000	.0000000	.0000000	.0000000
FORCES ON MEMBER AT NODE 15		871.695	8.38184	-11.3800	3.04988	14.8308	-156.859
16		-871.695	-8.38184	11.3800	-3.04988	40.9225	188.870

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EL=    16  NODES=     1     2    17      MAT=   2  AREA=  4.82       FBOT,FMID,FTOP=    .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000        XC,YC,ZC=   1.64       -8.00        5.78        TEMPS=   249.9   249.9   249.9   249.9   249.9
TOP SX,SY,SXY,S2= -15023.           -15882.          1253.3          .00000      SIG1,SIG2,SIG3=   .27724-013 -14181.          -15844.
    S.I.=   16844.          SIGE=   15878.
MID SX,SY,SXY,S2= -11589.           -2157.6          1049.8          .00000      SIG1,SIG2,SIG3=    .00000       -2042.2          -11705.
    S.I.=   11705.          SIGE=   10829.
BOT SX,SY,SXY,S2=  8154.8           11667.           846.33          .00000      SIG1,SIG2,SIG3=   11703.          .15631-006  -8190.9
    S.I.=   19894.          SIGE=   17318.
TOP EP=    - .000359  - .000403     .000114     .000327   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000551
MID EP=    - .000384  - .000446     .000095     .000145   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000380
BOT EP=    - .000408  - .000486     .000077  -  .000037   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000404
SIGEPL(TOP,MID,BOT)=   15875.9          10828.8          17217.7

EL=    17  NODES=    17     2    18      MAT=   2  AREA=  4.82       FBOT,FMID,FTOP=    .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000        XC,YC,ZC=   3.28       -8.01        5.11        TEMPS=   199.9   199.9   199.9   199.9   199.9
TOP SX,SY,SXY,S2= -1321.8           -2656.5          -323.39          .00000      SIG1,SIG2,SIG3=   .23128-014  -1248.1          -2740.2
    S.I.=    2740.2         SIGE=    2376.2
MID SX,SY,SXY,S2=  789.11            439.15          -1940.2          .00000      SIG1,SIG2,SIG3=    2567.6          .30618-007  -1329.3
    S.I.=    3887.0         SIGE=    3431.2
BOT SX,SY,SXY,S2=  2320.0           3544.8          -3556.9          .00000      SIG1,SIG2,SIG3=    8803.1          .58110-007  -338.17
    S.I.=    7141.2         SIGE=    6878.3
TOP EP=    - .000018  - .000079  - .000029     .000042   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000483
MID EP=       .000023     .000007  - .000178  -  .000013   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000120
BOT EP=       .000085     .000093  -  .000323  -  .000068   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000[illegible]
SIGEPL(TOP,MID,BOT)=    2376.22          3431.20          6878.30

EL=    18  NODES=    18     2    19      MAT=   2  AREA=  4.82       FBOT,FMID,FTOP=    .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000        XC,YC,ZC=   6.56       -8.01        5.11        TEMPS=   199.9   199.9   199.9   199.9   199.9
TOP SX,SY,SXY,S2= -4677.7           -3059.7           68.474          .00000      SIG1,SIG2,SIG3=    .00000       -3066.8          -4680.6
    S.I.=    4680.6         SIGE=    4118.1
MID SX,SY,SXY,S2=  1680.1            -486.20          524.57          .00000      SIG1,SIG2,SIG3=    1981.1          .20352-007  -599.18
    S.I.=    2670.3         SIGE=    2348.7
BOT SX,SY,SXY,S2=  8437.8           2083.3           980.67          .00000      SIG1,SIG2,SIG3=    8586.0          1945.2          -.26089-007
    S.I.=    8586.0         SIGE=    7787.6
TOP EP=    - .000131  - .000058     .000006     .000081   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000144
MID EP=       .000071  - .000037     .000048  -  .000015   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000082
BOT EP=       .000273  - .000015     .000089  -  .000110   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000272
SIGEPL(TOP,MID,BOT)=    4118.10          2348.74          7787.59

EL=    19  NODES=     2     3    19      MAT=   2  AREA=  4.82       FBOT,FMID,FTOP=    .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000        XC,YC,ZC=   8.20       -8.01        5.78        TEMPS=   249.9   249.9   249.9   249.9   249.9
TOP SX,SY,SXY,S2= -12296.           -3744.0          -3940.3          .00000      SIG1,SIG2,SIG3=    .10665-013  -2205.4          -13835.
    S.I.=    13835.         SIGE=    12875.
MID SX,SY,SXY,S2= -11683.           -1940.6          -2884.1          .00000      SIG1,SIG2,SIG3=   -.10133-013  -1160.8          -12482.
    S.I.=    12482.         SIGE=    11924.
BOT SX,SY,SXY,S2= -11069.           -137.16          -1788.0          .00000      SIG1,SIG2,SIG3=    147.85          .90372-007  -11354.
    S.I.=    11502.         SIGE=    11428.
TOP EP=    - .000392  - .000062  - .000360     .000189   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000452
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MID EP=    - .000390     .000055  - .000282     .000144   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000418
BOT EP=    - .000387     .000112  - .000183     .000118   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000401
SIGEPL(TOP,MID,BOT)=    12874.5          11924.2          11428.6

EL=    20  NODES=     3     4    18      MAT=   2  AREA=  4.82       FBOT,FMID,FTOP=    .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000        XC,YC,ZC=  11.5       -8.01        5.78        TEMPS=   249.9   249.9   249.9   249.9   249.9
TOP SX,SY,SXY,S2= -12091.           -8818.6          -893.08          .00000      SIG1,SIG2,SIG3=    .00000       -8735.4          -12275.
    S.I.=    12275.         SIGE=    10848.
MID SX,SY,SXY,S2= -10361.           -1543.8          -1083.6          .00000      SIG1,SIG2,SIG3=    .00000       -1417.3          -10487.
    S.I.=    10487.         SIGE=    9855.1
BOT SX,SY,SXY,S2=  8629.7           3832.0          -1134.1          .00000      SIG1,SIG2,SIG3=    3934.4          .99522-007  -8732.0
    S.I.=    12666.         SIGE=    11229.
TOP EP=    - .000352  - .000116  - .000091     .000200   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000374
MID EP=    - .000348  - .000055  - .000087     .000125   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000345
BOT EP=    - .000343  - .000224  - .000104     .000051   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000394
SIGEPL(TOP,MID,BOT)=    10847.7          9855.09          11228.7

EL=    21  NODES=    18     4    20      MAT=   2  AREA=  4.82       FBOT,FMID,FTOP=    .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000        XC,YC,ZC=  13.1       -8.01        5.11        TEMPS=   199.9   199.9   199.9   199.9   199.9
TOP SX,SY,SXY,S2=  1319.7           -4286.8          -3026.2          .00000      SIG1,SIG2,SIG3=    2844.8          .84715-007  -5581.6
    S.I.=    8236.5         SIGE=    7263.6
MID SX,SY,SXY,S2=  3184.2           -1184.8          -3430.0          .00000      SIG1,SIG2,SIG3=    5070.8          .63818-007  -3051.4
    S.I.=    8122.3         SIGE=    7106.2
BOT SX,SY,SXY,S2=  5048.7           1837.0           -3833.7          .00000      SIG1,SIG2,SIG3=    7830.2          .65016-007  -644.50
    S.I.=    8274.7         SIGE=    7972.0
TOP EP=       .0000     -  .000183  -  .000275     .000031   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000254
MID EP=       .000123  -  .000074  -  .000311  -  .000021   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000248
BOT EP=       .000156     .000015  -  .000348  -  .000073   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000278
SIGEPL(TOP,MID,BOT)=    7263.56          7106.25          7972.04

EL=    22  NODES=    20     4    21      MAT=   2  AREA=  4.82       FBOT,FMID,FTOP=    .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000        XC,YC,ZC=  16.4       -8.01        5.11        TEMPS=   199.9   199.9   199.9   199.9   199.9
TOP SX,SY,SXY,S2=  -455.93            645.83           2807.1          .00000      SIG1,SIG2,SIG3=    2759.6          .41873-007  -2569.7
    S.I.=    5329.3         SIGE=    4616.3
MID SX,SY,SXY,S2=  2188.8           1311.1           2512.7          .00000      SIG1,SIG2,SIG3=    4300.7          .40063-007  -800.78
    S.I.=    5101.5         SIGE=    4752.0
BOT SX,SY,SXY,S2=  4833.8           1976.4           2418.3          .00000      SIG1,SIG2,SIG3=    6213.8          598.25          -.23069-007
    S.I.=    6213.8         SIGE=    5936.1
TOP EP=    - .000023     .000027  - .000237  -  .000002   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000181
MID EP=       .000063     .000023  - .000228  -  .000037   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000188
BOT EP=       .000148     .000018  - .000219  -  .000071   EPPL=    .000000     .000000     .000000     .000000   NUEO=        .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=    .000000     .000000     .000000     .000000   EPEO=     .000207
SIGEPL(TOP,MID,BOT)=    4816.31          4751.88          5936.15

EL=    23  NODES=     4     5    21      MAT=   2  AREA=  4.82       FBOT,FMID,FTOP=    .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000        XC,YC,ZC=  18.0       -8.00        5.78        TEMPS=   249.9   249.9   249.9   249.9   249.9
TOP SX,SY,SXY,S2= -6383.1           -4823.1          -7135.5          .00000      SIG1,SIG2,SIG3=    889.11          .11838-006  -13895.
    S.I.=    14284.         SIGE=    14362.
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MID SX,SY,SXY,SZ= -7842.1      -3269.8      -5892.5        .00000      SIG1,SIG2,SIG3=  1705.9        .11411-008 -12818.
    S.I.=  14523.        SIGE=  13750.
BOT SX,SY,SXY,SZ= -7301.0      -1815.1      -5849.4        .00000      SIG1,SIG2,SIG3=  2773.0        .11364-008 -11680.
    S.I.=  14483.        SIGE=  13295.
TOP EP=    -.000243  -.000085   .000652   .000140  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000504
MID EP=    -.000241  -.000032   .000629   .000117  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000483
BOT EP=    -.000238   .000020   .000607   .000094  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000467
SIGEPL(TOP,MID,BOT)=  14352.3       13750.1       13295.2

EL=   24  NODES=    5     6    21      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=   000          000          000          PL TRI SHELL   48
P1,P2=   0000        0000       XC,YC,ZC=  21.3      -8.00      5.78       TEMPS=  249.9  249.9  249.9  249.9  249.9
TOP SX,SY,SXY,SZ= -3637.9      -3738.6      -3850.3        .00000      SIG1,SIG2,SIG3=  -.87512-013  -36.781      -7338.0
    S.I.=  7338.0        SIGE=  7319.7
MID SX,SY,SXY,SZ= -3043.5      -1829.0      -3884.1        .00000      SIG1,SIG2,SIG3=  1504.9        .81932-007  -6377.4
    S.I.=  7882.3        SIGE=  7248.0
BOT SX,SY,SXY,SZ= -2449.1       78.758      -6137.9        .00000      SIG1,SIG2,SIG3=  3141.4        .87989-007  -5511.7
    S.I.=  8653.2        SIGE=  7587.0
TOP EP=    -.000086  -.000093   .000333   .000078  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000257
MID EP=    -.000048  -.000032   .000356   .000051  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000255
BOT EP=    -.000007   .000025   .000378   .000025  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000268
SIGEPL(TOP,MID,BOT)=  7319.88       7247.86       7587.01

EL=   25  NODES=   21     6    22      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=   000          000          000          PL TRI SHELL   48
P1,P2=   0000        0000       XC,YC,ZC=  23.0      -7.99      5.11       TEMPS=  199.9  199.9  199.9  199.9  199.9
TOP SX,SY,SXY,SZ=  9272.1      -8064.6      -7440.6        .00000      SIG1,SIG2,SIG3=  12028.        .17852-008 -10820.
    S.I.=  22847.        SIGE=  19796.
MID SX,SY,SXY,SZ=  10169.      -6813.9      -7706.5        .00000      SIG1,SIG2,SIG3=  13189.        .17901-008  -9814.4
    S.I.=  22784.        SIGE=  19811.
BOT SX,SY,SXY,SZ=  11065.      -5163.2      -7968.5        .00000      SIG1,SIG2,SIG3=  14323.        .17871-008  -8421.7
    S.I.=  22745.        SIGE=  19918.
TOP EP=     .000408  -.000379  -.000675   .000013  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000691
MID EP=     .000424  -.000337  -.000699  -.000037  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000691
BOT EP=     .000440  -.000295  -.000723  -.000062  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000695
SIGEPL(TOP,MID,BOT)=  19795.7       19811.0       19917.7

EL=   26  NODES=   22     6    23      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=   000          000          000          PL TRI SHELL   48
P1,P2=   0000        0000       XC,YC,ZC=  26.2      -7.96      5.11       TEMPS=  199.9  199.9  199.9  199.9  199.9
TOP SX,SY,SXY,SZ=  -356.72       486.74       8175.7         .00000      SIG1,SIG2,SIG3=  8241.1        .12884-008  -8131.1
    S.I.=  16372.        SIGE=  14179.
MID SX,SY,SXY,SZ=  536.96        358.12       8206.8         .00000      SIG1,SIG2,SIG3=  8659.6        .12857-008  -7754.5
    S.I.=  16414.        SIGE=  14222.
BOT SX,SY,SXY,SZ=  1430.7        269.49       8237.5         .00000      SIG1,SIG2,SIG3=  9108.0        .12877-008  -7407.6
    S.I.=  16516.        SIGE=  14328.
TOP EP=    -.000017   .000020   .000742  -.000001  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000485
MID EP=     .000015   .000007   .000745  -.000008  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000486
BOT EP=     .000047  -.000008   .000744  -.000018  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000500
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SARGENT & LUNDY

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SIGEPL(TOP,MID,BOT)=  14176.8       14222.2       14328.4

EL=   27  NODES=    6     7    23      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=   000          000          000          PL TRI SHELL   48
P1,P2=   0000        0000       XC,YC,ZC=  27.8      -7.96      5.78       TEMPS=  249.9  249.9  249.9  249.9  249.9
TOP SX,SY,SXY,SZ= -3877.5      -4610.4      -10772.        .00000      SIG1,SIG2,SIG3=  12581.        .26360-008 -20868.
    S.I.=  33549.        SIGE=  29356.
MID SX,SY,SXY,SZ= -3863.7      -3584.7      -10803.        .00000      SIG1,SIG2,SIG3=  13080.        .26406-008 -20528.
    S.I.=  32608.        SIGE=  29342.
BOT SX,SY,SXY,SZ= -3849.8      -2558.9      -10835.        .00000      SIG1,SIG2,SIG3=  13581.        .26471-008 -20100.
    S.I.=  33691.        SIGE=  29356.
TOP EP=    -.000048  -.000118  -.001531   .000088  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .001031
MID EP=    -.000098  -.000085  -.001534   .000078  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .001030
BOT EP=    -.000107  -.000053  -.001537   .000069  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .001031
SIGEPL(TOP,MID,BOT)=  29355.7       29342.4       29356.0

EL=   28  NODES=    7     8    23      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=   000          000          000          PL TRI SHELL   48
P1,P2=   0000        0000       XC,YC,ZC=  29.5      -8.20      5.78       TEMPS=  221.0  221.0  221.0  221.0  221.0
TOP SX,SY,SXY,SZ=  1290.9       2258.2       7785.8         .00000      SIG1,SIG2,SIG3=  9555.8        .12227-008  -8005.8
    S.I.=  15582.        SIGE=  13593.
MID SX,SY,SXY,SZ=  1629.2       4413.8       7827.4         .00000      SIG1,SIG2,SIG3=  10677.        .12030-008  -4833.8
    S.I.=  15310.        SIGE=  13589.
BOT SX,SY,SXY,SZ=  1967.5       6568.6       7869.1         .00000      SIG1,SIG2,SIG3=  11912.        .12011-008  -3376.5
    S.I.=  15287.        SIGE=  13910.
TOP EP=     .000021   .000068   .000707  -.000037  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000476
MID EP=     .000011   .000127   .000885  -.000063  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000476
BOT EP=     .000000   .000208   .001063  -.000090  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000487
SIGEPL(TOP,MID,BOT)=  13593.2       13589.0       13910.0

EL=   29  NODES=   23     8    24      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=   000          000          000          PL TRI SHELL   48
P1,P2=   0000        0000       XC,YC,ZC=  29.5      -4.42      5.11       TEMPS=  171.0  171.0  171.0  171.0  171.0
TOP SX,SY,SXY,SZ=  4399.7      -1082.8      -214.42         .00000      SIG1,SIG2,SIG3=  4408.0        .43287-007  -1101.2
    S.I.=  5508.2        SIGE=  5049.5
MID SX,SY,SXY,SZ=  4660.4       -746.50      -508.30         .00000      SIG1,SIG2,SIG3=  4707.7        .43243-007  -785.85
    S.I.=  5503.6        SIGE=  5152.0
BOT SX,SY,SXY,SZ=  4921.1       -404.18      -802.17         .00000      SIG1,SIG2,SIG3=  5039.3        .43699-007  -522.41
    S.I.=  5561.7        SIGE=  5319.8
TOP EP=     .000164  -.000084  -.000019  -.000035  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000176
MID EP=     .000170  -.000075  -.000046  -.000041  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000178
BOT EP=     .000175  -.000085  -.000073  -.000047  EPPL=   .000000   .000000   .000000   .000000  NUE0=       .300
    EPDR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000185
SIGEPL(TOP,MID,BOT)=  5048.49       5151.97       5319.76

EL=   30  NODES=   24     8    25      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=   000          000          000          PL TRI SHELL   48
P1,P2=   0000        0000       XC,YC,ZC=  29.5      -.659      5.11       TEMPS=  171.0  171.0  171.0  171.0  171.0
TOP SX,SY,SXY,SZ= -1178.3       931.04       -512.35         .00000      SIG1,SIG2,SIG3=  1049.0        .18412-007  -1284.3
    S.I.=  2343.3        SIGE=  2033.0
MID SX,SY,SXY,SZ=  -522.34      1075.8       -378.82         .00000      SIG1,SIG2,SIG3=  1181.5        .13904-007  -808.06
    S.I.=  1788.8        SIGE=  1657.3
BOT SX,SY,SXY,SZ=  131.84       1220.8       -247.48         .00000      SIG1,SIG2,SIG3=  1274.2        78.034       -.44882-008
    S.I.=  1274.2        SIGE=  1237.0
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SARGENT & LUNDY

3308

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TOP EP=  -.000051   .000045 -.000048   .000003  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000071
MID EP=  -.000028   .000043 -.000034 -.000006  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000054
BOT EP=  -.000008   .000041 -.000022 -.000014  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000043
SIGEPL(TOP,MID,BOT)=  2033.05       1857.29       1237.02

EL=   31  NODES=     8     9    25     MAT=  2  AREA=  5.33      FBOT,FMID,FTOP=  .000         .000         .000         PL TRI SHELL   48
P1,P2=   .0000      .0000      XC,YC,ZC=  28.5        8.20       5.78      TEMPS=  176.7  176.7  176.7  176.7  176.7
TOP SX,SY,SXY,SZ=  2589.7      -1826.0      -2653.3       .00000      SIG1,SIG2,SIG3=  3824.0       .54789-007 -3150.4
   S.I.=  6974.4      SIGE=  6049.4
MID SX,SY,SXY,SZ=  2506.5      -1869.7      -2622.2       .00000      SIG1,SIG2,SIG3=  3733.5       .53667-007 -3095.8
   S.I.=  6830.4      SIGE=  5923.8
BOT SX,SY,SXY,SZ=  2413.2      -1813.4      -2591.0       .00000      SIG1,SIG2,SIG3=  3843.5       .52542-007 -3043.7
   S.I.=  6867.2      SIGE=  5799.0
TOP EP=   .000111 -.000084 -.000240 -.000007  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000211
MID EP=   .000107 -.000091 -.000237 -.000007  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000206
BOT EP=   .000103 -.000088 -.000234 -.000006  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000202
SIGEPL(TOP,MID,BOT)=  6049.35       5923.83       5799.02

EL=   32  NODES=     9    10    25     MAT=  2  AREA=  5.33      FBOT,FMID,FTOP=  .000         .000         .000         PL TRI SHELL   48
P1,P2=   .0000      .0000      XC,YC,ZC=  29.5        4.48       5.78      TEMPS=  159.2  159.2  159.2  159.2  159.2
TOP SX,SY,SXY,SZ=  819.07       876.73      -1138.3       .00000      SIG1,SIG2,SIG3=  1986.6       .17893-007 -290.75
   S.I.=  2277.3      SIGE=  2146.7
MID SX,SY,SXY,SZ=  691.40       1255.9      -1145.5       .00000      SIG1,SIG2,SIG3=  2233.5       .18227-007 -86.238
   S.I.=  2318.8      SIGE=  2277.9
BOT SX,SY,SXY,SZ=  563.74       1635.0      -1152.7       .00000      SIG1,SIG2,SIG3=  2498.9       98.850       -.94328-008
   S.I.=  2498.9      SIGE=  2452.0
TOP EP=   .000019   .000022 -.000103 -.000018  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000075
MID EP=   .000018   .000034 -.000103 -.000022  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000078
BOT EP=   .000016   .000047 -.000104 -.000027  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000085
SIGEPL(TOP,MID,BOT)=  2165.75       2277.87       2452.00

EL=   33  NODES=    25    10    26     MAT=  2  AREA=  5.33      FBOT,FMID,FTOP=  .000         .000         .000         PL TRI SHELL   48
P1,P2=   .0000      .0000      XC,YC,ZC=  28.5        5.26       5.11      TEMPS=  153.5  153.5  153.5  153.5  153.5
TOP SX,SY,SXY,SZ=  2446.5      -793.26      -1620.6       .00000      SIG1,SIG2,SIG3=  3118.2       .36010-007 -1464.8
   S.I.=  4583.1      SIGE=  4054.3
MID SX,SY,SXY,SZ=  2511.3      -861.81      -1628.1       .00000      SIG1,SIG2,SIG3=  3198.0       .35723-007 -1348.5
   S.I.=  4546.6      SIGE=  4044.6
BOT SX,SY,SXY,SZ=  2576.0      -930.33      -1635.4       .00000      SIG1,SIG2,SIG3=  3278.2       .35442-007 -1232.5
   S.I.=  4510.8      SIGE=  4038.1
TOP EP=   .000093 -.000052 -.000146 -.000017  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000141
MID EP=   .000094 -.000049 -.000147 -.000019  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000140
BOT EP=   .000095 -.000045 -.000148 -.000021  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000140
SIGEPL(TOP,MID,BOT)=  4054.23       4044.67       4038.13

EL=   34  NODES=    26    10    27     MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000         .000         .000         PL TRI SHELL   48
P1,P2=   .0000      .0000      XC,YC,ZC=  27.8        8.03       5.11      TEMPS=  153.5  153.5  153.5  153.5  153.5
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SARGENT & LUNDY

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TOP SX,SY,SXY,SZ=  408.18       157.12      -1115.1       .00000      SIG1,SIG2,SIG3=  1405.4       .17835-007 -839.08
   S.I.=  2244.5      SIGE=  1884.3
MID SX,SY,SXY,SZ=  534.84       184.88      -1114.7       .00000      SIG1,SIG2,SIG3=  1479.7       .17756-007 -780.15
   S.I.=  2268.8      SIGE=  1888.1
BOT SX,SY,SXY,SZ=  660.10       172.85      -1114.2       .00000      SIG1,SIG2,SIG3=  1557.0       .17824-007 -724.22
   S.I.=  2781.2      SIGE=  2019.0
TOP EP=   .000013   .000001 -.000101 -.000006  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000068
MID EP=   .000017   .000000 -.000101 -.000007  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000069
BOT EP=   .000021 -.000001 -.000101 -.000008  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000070
SIGEPL(TOP,MID,BOT)=  1964.27       1888.08       2018.98

EL=   35  NODES=    10    11    27     MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000         .000         .000         PL TRI SHELL   48
P1,P2=   .0000      .0000      XC,YC,ZC=  28.2        8.03       5.78      TEMPS=  157.0  157.0  157.0  157.0  157.0
TOP SX,SY,SXY,SZ= -61.736      -191.26       415.39       .00000      SIG1,SIG2,SIG3=  583.91       .68084-008 -546.90
   S.I.=  840.81      SIGE=  738.07
MID SX,SY,SXY,SZ= -67.007      -179.71       441.07       .00000      SIG1,SIG2,SIG3=  521.30       .69875-008 -568.02
   S.I.=  688.32      SIGE=  779.89
BOT SX,SY,SXY,SZ= -72.277      -168.16       466.76       .00000      SIG1,SIG2,SIG3=  349.00       .73734-008 -589.43
   S.I.=  938.43      SIGE=  821.55
TOP EP=   .000000 -.000006   .000037   .000003  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000026
MID EP=   .000000 -.000006   .000040   .000003  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000027
BOT EP=  -.000001 -.000005   .000042   .000003  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000029
SIGEPL(TOP,MID,BOT)=  739.088       779.886       821.546

EL=   36  NODES=    11    12    27     MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000         .000         .000         PL TRI SHELL   48
P1,P2=   .0000      .0000      XC,YC,ZC=  23.0        8.03       5.78      TEMPS=  157.1  157.1  157.1  157.1  157.1
TOP SX,SY,SXY,SZ= -407.20      -415.44       716.56       .00000      SIG1,SIG2,SIG3=  305.26       .11260-007 -1127.9
   S.I.=  1433.1      SIGE=  1307.5
MID SX,SY,SXY,SZ= -365.96      -275.67       728.63       .00000      SIG1,SIG2,SIG3=  407.27       .11441-007 -1048.6
   S.I.=  1456.1      SIGE=  1301.1
BOT SX,SY,SXY,SZ= -324.72      -135.71       738.69       .00000      SIG1,SIG2,SIG3=  512.51       .11871-007 -972.84
   S.I.=  1485.5      SIGE=  1306.8
TOP EP=  -.000010 -.000010   .000085   .000009  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000045
MID EP=  -.000010 -.000006   .000086   .000007  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000045
BOT EP=  -.000010 -.000001   .000087   .000005  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000046
SIGEPL(TOP,MID,BOT)=  1307.52       1301.14       1306.88

EL=   37  NODES=    27    12    28     MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000         .000         .000         PL TRI SHELL   48
P1,P2=   .0000      .0000      XC,YC,ZC=  31.3        8.03       5.11      TEMPS=  153.5  153.5  153.5  153.5  153.5
TOP SX,SY,SXY,SZ= -142.80       270.27       170.74       .00000      SIG1,SIG2,SIG3=  331.70       .42108-008 -204.23
   S.I.=  535.84      SIGE=  488.49
MID SX,SY,SXY,SZ= -88.254       367.75       209.42       .00000      SIG1,SIG2,SIG3=  448.04       .49231-008 -178.54
   S.I.=  626.57      SIGE=  559.11
BOT SX,SY,SXY,SZ= -53.711       465.24       248.11       .00000      SIG1,SIG2,SIG3=  564.77       .56415-008 -153.24
   S.I.=  718.01      SIGE=  654.96
TOP EP=  -.000008   .000011   .000015 -.000001  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000016
MID EP=  -.000007   .000014   .000018 -.000003  EPPL=  .000000   .000000   .000000   .000000  NUE0=      .300
   EPDR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=   .000018
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SARGENT & LUNDY

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BOT EP:   -.000007   .000017   .000022  -.000004  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000023
SIGEPL(TOP,MID,BOT):  468.480       559.110       654.976

EL:    38  NODES:    28    12    29      MAT:   2  AREA:   4.92       FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL    48
P1,P2:   .0000         .0000         XC,YC,ZC:   18.0          8.03          5.11        TEMPS:   153.5   153.5   153.5   153.5   153.5   153.5
TOP SX,SY,SXY,SZ:   46.123        57.815       -382.90         .00000       SIG1,SIG2,SIG3:   435.90          .80176-008  -329.97
    S.I.:   765.87        SIGE:   685.37
MID SX,SY,SXY,SZ:   147.01        86.116       -468.58         .00000       SIG1,SIG2,SIG3:   585.14          .73791-008  -353.01
    S.I.:   939.15        SIGE:   821.84
BOT SX,SY,SXY,SZ:   245.88        114.42       -554.27         .00000       SIG1,SIG2,SIG3:   738.31          .67711-008  -378.00
    S.I.:   1116.3        SIGE:   983.40
TOP EP:    .000001   .000002  -.000035  -.000001  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000023
MID EP:    .000004   .000001  -.000042  -.000002  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000029
BOT EP:    .000007   .000001  -.000050  -.000004  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000034
SIGEPL(TOP,MID,BOT):  685.373       821.639       983.398

EL:    39  NODES:    12    13    29      MAT:   2  AREA:   4.92       FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL    48
P1,P2:   .0000         .0000         XC,YC,ZC:   16.4          8.03          5.78        TEMPS:   157.1   157.1   157.1   157.1   157.1
TOP SX,SY,SXY,SZ:  -582.87       -249.05        102.24         .00000       SIG1,SIG2,SIG3:   .25289-015  -220.21          -611.51
    S.I.:   611.51        SIGE:   536.44
MID SX,SY,SXY,SZ:  -547.23       -108.82        211.80         .00000       SIG1,SIG2,SIG3:   .00000          -23.218         -632.83
    S.I.:   632.83        SIGE:   621.55
BOT SX,SY,SXY,SZ:  -511.79         31.407       321.36         .00000       SIG1,SIG2,SIG3:   180.56          .86119-008  -660.95
    S.I.:   841.51        SIGE:   767.33
TOP EP:   -.000018  -.000003   .000009   .000009  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000019
MID EP:   -.000018   .000002   .000019   .000007  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000022
BOT EP:   -.000018   .000006   .000028   .000003  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000027
SIGEPL(TOP,MID,BOT):  536.444       621.552       787.333

EL:    40  NODES:    13    14    29      MAT:   2  AREA:   4.92       FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL    48
P1,P2:   .0000         .0000         XC,YC,ZC:   13.1          8.03          5.78        TEMPS:   157.1   157.1   157.1   157.1   157.1
TOP SX,SY,SXY,SZ:  -763.78       -654.40        311.15         .00000       SIG1,SIG2,SIG3:   .13076-014  -388.11          -1019.3
    S.I.:   1019.3        SIGE:   890.91
MID SX,SY,SXY,SZ:  -654.99       -141.16        358.81         .00000       SIG1,SIG2,SIG3:   41.681          .89074-008  -817.44
    S.I.:   879.13        SIGE:   859.04
BOT SX,SY,SXY,SZ:  -555.38        372.29        402.48         .00000       SIG1,SIG2,SIG3:   522.55          .88503-008  -705.88
    S.I.:   1228.2        SIGE:   1087.6
TOP EP:   -.000019  -.000015   .000028   .000015  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000031
MID EP:   -.000021   .000002   .000032   .000008  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000030
BOT EP:   -.000023   .000019   .000036   .000002  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000037
SIGEPL(TOP,MID,BOT):  890.906       859.041      1067.80

EL:    41  NODES:    28    14    30      MAT:   2  AREA:   4.92       FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL    48
P1,P2:   .0000         .0000         XC,YC,ZC:   11.5          8.03          5.11        TEMPS:   153.5   153.5   153.5   153.5   153.5
TOP SX,SY,SXY,SZ:  -254.72       -580.00        145.25         .00000       SIG1,SIG2,SIG3:   .00000          -200.55          -844.17
    S.I.:   844.17        SIGE:   570.96
MID SX,SY,SXY,SZ:   53.451         227.11        85.958         .00000       SIG1,SIG2,SIG3:   256.79          .28708-008  -83.132
    S.I.:   339.92        SIGE:   306.92
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BOT SX,SY,SXY,SZ:   17.82        1044.2        46.670         .00000       SIG1,SIG2,SIG3:   1046.6          145.40          -.35406-006
    S.I.:   1046.8        SIGE:   982.05
TOP EP:   -.0000    .000018   .000013   .000009  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000020
MID EP:   -.000004   .000008   .000008  -.000002  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .00000    .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000011
BOT EP:   -.00000    .000035   .000004  -.000012  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000034
SIGEPL(TOP,MID,BOT):  570.958       308.817       582.048

EL:    42  NODES:    30    14    31      MAT:   2  AREA:   4.92       FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL    48
P1,P2:   .0000         .0000         XC,YC,ZC:   8.20          8.03          5.11        TEMPS:   153.5   153.5   153.5   153.5   153.5
TOP SX,SY,SXY,SZ:  -819.65       -424.87       -85.655         .00000       SIG1,SIG2,SIG3:   .79767-015  -410.56          -834.06
    S.I.:   834.06        SIGE:   810.89
MID SX,SY,SXY,SZ:   113.83         31.825       -252.68         .00000       SIG1,SIG2,SIG3:   329.01          .40258-008  -183.38
    S.I.:   512.37        SIGE:   449.66
BOT SX,SY,SXY,SZ:  1147.3         488.62       -420.11         .00000       SIG1,SIG2,SIG3:   1351.8          284.15          -.41942-006
    S.I.:   1351.8        SIGE:   1234.5
TOP EP:   -.000027  -.000005  -.000008   .000014  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000028
MID EP:    .000004   .000000  -.000023  -.000002  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000016
BOT EP:    .000035   .000005  -.000038  -.000017  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000043
SIGEPL(TOP,MID,BOT):  810.889       449.659      1234.47

EL:    43  NODES:    14    15    31      MAT:   2  AREA:   4.92       FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL    48
P1,P2:   .0000         .0000         XC,YC,ZC:   6.58          8.03          5.78        TEMPS:   157.1   157.1   157.1   157.1   157.1
TOP SX,SY,SXY,SZ:  -1081.9       -1694.8        -290.04         .00000       SIG1,SIG2,SIG3:   -.14700-014  -975.02          -1811.7
    S.I.:   1811.7        SIGE:   1570.5
MID SX,SY,SXY,SZ:  -693.16        -128.01        80.231         .00000       SIG1,SIG2,SIG3:   -.80187-015  -117.82          -704.38
    S.I.:   704.38        SIGE:   653.48
BOT SX,SY,SXY,SZ:  -294.49        1436.8        450.50         .00000       SIG1,SIG2,SIG3:   1847.0          .15335-007  -404.70
    S.I.:   1851.7        SIGE:   1784.1
TOP EP:   -.000020  -.000047   .000025   .000028  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000055
MID EP:   -.000023   .000003   .000007   .000008  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000023
BOT EP:   -.000025   .000053   .000041  -.000012  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000062
SIGEPL(TOP,MID,BOT):  1570.50       653.484      1784.14

EL:    44  NODES:    31    15    16      MAT:   2  AREA:   4.92       FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL    48
P1,P2:   .0000         .0000         XC,YC,ZC:   3.28          8.03          5.78        TEMPS:   157.1   157.1   157.1   157.1   157.1
TOP SX,SY,SXY,SZ:  -2463.9       -1242.2        -189.90         .00000       SIG1,SIG2,SIG3:   .00000          -1213.4          -2482.8
    S.I.:   2482.8        SIGE:   2158.1
MID SX,SY,SXY,SZ:  -150.28        -764.09        -178.55         .00000       SIG1,SIG2,SIG3:   .13255-014  -102.12          -812.24
    S.I.:   812.24        SIGE:   786.30
BOT SX,SY,SXY,SZ:  2163.4         -285.93        -187.19         .00000       SIG1,SIG2,SIG3:   2174.7          .18423-007  -287.28
    S.I.:   2472.0        SIGE:   2337.5
TOP EP:   -.000073  -.000017  -.000017   .000035  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000075
MID EP:    .000003  -.000025  -.000018   .000010  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000027
BOT EP:    .000078  -.000032  -.000015  -.000020  EPPL:   .000000   .000000   .000000   .000000  NUEO:       .300
   EPOR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000061
SIGEPL(TOP,MID,BOT):  2158.07       786.304      2337.62
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EL=   45  NODES=    15    32    31      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=    .000         .000         .000          PL TRI SHELL    48
P1,P2=    .0000        .0000        XC,YC,ZC=   1.84        8.02        5.11        TEMPS=   153.5   153.5   153.5   153.5   153.5
TOP SX,SY,SXY,S2=  -2597.5        -776.21        349.87        .00000        SIG1,SIG2,SIG3=    .00000       -711.32       -2682.5
    S.I.=   2682.5        SIGE=   2387.7
MID SX,SY,SXY,S2=   134.59        -19.438       -21.921        .00000        SIG1,SIG2,SIG3=   137.73        .12281-008   -18.575
    S.I.=   156.31        SIGE=   147.90
BOT SX,SY,SXY,S2=   2886.8        745.34       -393.71        .00000        SIG1,SIG2,SIG3=   2937.5        674.63        -.88898-008
    S.I.=   2937.5        SIGE=   2685.0
TOP EP=    -.000082     .000000     .000032     .000035   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000083
MID EP=    -.000005    -.000002    -.000032    -.000001   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000005
BOT EP=     .000092    -.000004    -.000036    -.000038   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000092
SIGEPL(TOP,MID,BOT)=   2387.65        147.895        2684.99

EL=   46  NODES=    33    17    34      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=    .000         .000         .000          PL TRI SHELL    48
P1,P2=    .0000        .0000        XC,YC,ZC=   1.84       -8.00        3.11        TEMPS=   150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,S2=  -1781.0        8048.3        510.64        .00000        SIG1,SIG2,SIG3=   8074.7        .77724-007   -1817.5
    S.I.=   9892.2        SIGE=   9120.3
MID SX,SY,SXY,S2=  -878.53        7889.0        317.66        .00000        SIG1,SIG2,SIG3=   7880.5        .88912-007   -890.05
    S.I.=   8770.5        SIGE=   8361.1
BOT SX,SY,SXY,S2=   33.985        7689.7        124.68        .00000        SIG1,SIG2,SIG3=   7691.7        31.955        -.30092-007
    S.I.=   7691.7        SIGE=   7675.8
TOP EP=    -.000148     .000298     .000048    -.000065   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000316
MID EP=    -.000112     .000282     .000029    -.000073   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000250
BOT EP=    -.000079     .000265     .000011    -.000080   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000265
SIGEPL(TOP,MID,BOT)=   9120.26        8361.13        7675.81

EL=   47  NODES=    17    %     34      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=    .000         .000         .000          PL TRI SHELL    48
P1,P2=    .0000        .0000        XC,YC,ZC=   3.28       -8.01        3.78        TEMPS=   150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,S2=   10534.        2713.5       -2369.5        .00000        SIG1,SIG2,SIG3=   11200.        2051.8        -.35938-007
    S.I.=   11200.        SIGE=   10328.
MID SX,SY,SXY,S2=   9853.9        1414.7       -1630.0        .00000        SIG1,SIG2,SIG3=   9964.6        1104.0        -.34810-007
    S.I.=   9964.6        SIGE=   9451.0
BOT SX,SY,SXY,S2=   8789.7        115.56       -890.36        .00000        SIG1,SIG2,SIG3=   8880.3        25.324        -.34705-007
    S.I.=   8880.3        SIGE=   8547.7
TOP EP=     .000337    -.000016    -.000214    -.000138   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000358
MID EP=     .000320    -.000051    -.000147    -.000115   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000328
BOT EP=     .000303    -.000087    -.000080    -.000092   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000307
SIGEPL(TOP,MID,BOT)=   10327.8        9451.04        8847.71

EL=   48  NODES=    34    18    19      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=    .000         .000         .000          PL TRI SHELL    48
P1,P2=    .0000        .0000        XC,YC,ZC=   5.56       -8.01        3.78        TEMPS=   150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,S2=   1567.4        9381.9        624.36        .00000        SIG1,SIG2,SIG3=   9431.5        1517.9        -.31089-007
    S.I.=   9431.5        SIGE=   8771.6
MID SX,SY,SXY,S2=   1450.5        9772.7        505.91        .00000        SIG1,SIG2,SIG3=   9803.4        1419.8        -.32935-007
    S.I.=   9803.4        SIGE=   9176.2
BOT SX,SY,SXY,S2=   1333.5        10164.        387.46        .00000        SIG1,SIG2,SIG3=   10180.        1316.5        -.34823-007
    S.I.=   10180.        SIGE=   9580.2
TOP EP=    -.000043     .000309     .000056    -.000114   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000304
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MID EP=    -.000051     .000324     .000046    -.000117   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000318
BOT EP=    -.000060     .000339     .000035    -.000120   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000333
SIGEPL(TOP,MID,BOT)=   8771.61        9176.20        8590.24

EL=   49  NODES=    34    19    35      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=    .000         .000         .000          PL TRI SHELL    48
P1,P2=    .0000        .0000        XC,YC,ZC=   6.20       -8.01        3.11        TEMPS=   150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,S2=   7916.5       -1207.1        1853.8        .00000        SIG1,SIG2,SIG3=   8206.8        .76250-007   -1497.5
    S.I.=   8704.5        SIGE=   8048.1
MID SX,SY,SXY,S2=   8204.2       -188.29        1784.1        .00000        SIG1,SIG2,SIG3=   8567.8        .71654-007   -551.83
    S.I.=   8118.5        SIGE=   8856.6
BOT SX,SY,SXY,S2=   8492.0        830.57        1914.7        .00000        SIG1,SIG2,SIG3=   8943.9        378.71        -.33849-007
    S.I.=   8943.9        SIGE=   8760.7
TOP EP=     .000287    -.000124     .000149    -.000070   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000314
MID EP=     .000287    -.000052     .000161    -.000083   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000307
BOT EP=     .000286    -.000080     .000173    -.000097   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000304
SIGEPL(TOP,MID,BOT)=   9049.14        8856.81        8760.88

EL=   50  NODES=    35    19    36      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=    .000         .000         .000          PL TRI SHELL    48
P1,P2=    .0000        .0000        XC,YC,ZC=   11.5       -8.01        3.11        TEMPS=   150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,S2=  -382.96        7889.7        2994.8        .00000        SIG1,SIG2,SIG3=   8860.0        .80247-007   -1353.2
    S.I.=   10213.        SIGE=   9508.3
MID SX,SY,SXY,S2=  -226.56        8310.7        2783.4        .00000        SIG1,SIG2,SIG3=   9143.4        .80185-007   -1059.6
    S.I.=   10203.        SIGE=   9716.5
BOT SX,SY,SXY,S2=  -70.169        8731.6        2592.2        .00000        SIG1,SIG2,SIG3=   9438.3        .80282-007   -776.87
    S.I.=   10215.        SIGE=   9849.7
TOP EP=    -.000085     .000278     .000270    -.000078   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000333
MID EP=    -.000084     .000281     .000252    -.000084   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000337
BOT EP=    -.000083     .000304     .000234    -.000090   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000342
SIGEPL(TOP,MID,BOT)=   9508.30        9716.53        9849.72

EL=   51  NODES=    19    20    36      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=    .000         .000         .000          PL TRI SHELL    48
P1,P2=    .0000        .0000        XC,YC,ZC=   13.1       -8.01        3.78        TEMPS=   150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,S2=   9214.4       -514.73       -4284.0        .00000        SIG1,SIG2,SIG3=   10832.        .10188-008   -2132.2
    S.I.=   12964.        SIGE=   12040.
MID SX,SY,SXY,S2=   10384.        1238.5       -4470.4        .00000        SIG1,SIG2,SIG3=   12208.        .10048-008   -583.64
    S.I.=   12790.        SIGE=   12508.
BOT SX,SY,SXY,S2=   11553.        2891.8       -4656.8        .00000        SIG1,SIG2,SIG3=   13598.        847.13        -.49888-007
    S.I.=   13598.        SIGE=   13150.
TOP EP=     .000325    -.000114    -.000385    -.000081   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000418
MID EP=     .000347    -.000085    -.000403    -.000121   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000434
BOT EP=     .000370    -.000018    -.000420    -.000151   EPPL=     .000000     .000000     .000000     .000000   NUE0=      .300
    EPDR=     .000000     .000000     .000000     .000000   EPCR=     .000000     .000000     .000000     .000000   EPE0=      .000455
SIGEPL(TOP,MID,BOT)=   12040.3        12507.9        13148.8

EL=   52  NODES=    36    20    21      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=    .000         .000         .000          PL TRI SHELL    48
P1,P2=    .0000        .0000        XC,YC,ZC=   15.4       -8.00        3.78        TEMPS=   150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,S2=   1040.2        11651.        2624.3        .00000        SIG1,SIG2,SIG3=   12170.        421.40        -.48154-007
    S.I.=   12170.        SIGE=   11865.
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SARGENT & LUNDY

3308

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MID SX,SY,SXY,SZ=  1582.6        11529          2945.8          .00000      SIG1,SIG2,SIG3=  12336.          775.74        -.45416-007
    S.I.=  12336.        SIGE=  11867.
BOT SX,SY,SXY,SZ=  2124.9        11508          3258.8          .00000      SIG1,SIG2,SIG3=  12533.          1098.6        -.44818-007
    S.I.=  12533.        SIGE=  12021.
TOP EP=    -.000084    .000390    .000237 -.000131  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000415
MID EP=    -.000065    .000354    .000258 -.000136  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000415
BOT EP=    -.000048    .000377    .000295 -.000142  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000417
SIGEPL(TOP,MID,BOT)=  11964.6        11987.2        12021.2

EL=    53  NODES=    36    21    37      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  18.0       -8.00        3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  10951.        -2573.2        -1354.1          .00000      SIG1,SIG2,SIG3=  11088.          .10837-006  -2707.4
    S.I.=  13793.        SIGE=  12658.
MID SX,SY,SXY,SZ=  11295.        -1948.6        -1508.9          .00000      SIG1,SIG2,SIG3=  11484.          .10702-006  -2157.4
    S.I.=  13621.        SIGE=  12681.
BOT SX,SY,SXY,SZ=  11639.        -1404.0        -1658.8          .00000      SIG1,SIG2,SIG3=  11847.          .10575-006  -1611.8
    S.I.=  13459.        SIGE=  12729.
TOP EP=     .000407   -.000203   -.000122   -.000087  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000438
MID EP=     .000413   -.000187   -.000138   -.000087  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000440
BOT EP=     .000418   -.000170   -.000150   -.000107  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000442
SIGEPL(TOP,MID,BOT)=  12658.4        12681.0        12729.4

EL=    54  NODES=    37    21    38      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  21.3       -7.99        3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  1027.6        7357.8         5825.9          .00000      SIG1,SIG2,SIG3=  10823.          .10419-006  -2437.3
    S.I.=  13260.        SIGE=  12225.
MID SX,SY,SXY,SZ=  648.40        7354.5         5886.2          .00000      SIG1,SIG2,SIG3=  10776.          .10545-006  -2772.8
    S.I.=  13548.        SIGE=  12397.
BOT SX,SY,SXY,SZ=  269.03        7351.3         5946.5          .00000      SIG1,SIG2,SIG3=  10731.          .10678-006  -3110.8
    S.I.=  13842.        SIGE=  12579.
TOP EP=    -.000041    .000245    .000525 -.000087  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000424
MID EP=    -.000054    .000248    .000531 -.000083  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000430
BOT EP=    -.000067    .000252    .000536 -.000079  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000436
SIGEPL(TOP,MID,BOT)=  12225.1        12396.9        12578.5

EL=    55  NODES=    21    22    38      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  23.0       -7.99        3.78        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  12108.        -436.62        -1031.6          .00000      SIG1,SIG2,SIG3=  17809.          .18872-006  -6237.5
    S.I.=  24146.        SIGE=  21710.
MID SX,SY,SXY,SZ=  12430.        -143.57        -1055.1          .00000      SIG1,SIG2,SIG3=  18425.          .19300-006  -6138.6
    S.I.=  24563.        SIGE=  22142.
BOT SX,SY,SXY,SZ=  12752.         149.47        -1078.5          .00000      SIG1,SIG2,SIG3=  18942.          .19629-006  -6040.5
    S.I.=  24982.        SIGE=  22575.
TOP EP=     .000425   -.000141   -.000931   -.000121  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000753
MID EP=     .000433   -.000134   -.000852   -.000128  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000768
BOT EP=     .000441   -.000128   -.000973   -.000134  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000783
```

SARGENT & LUNDY

```
SIGEPL(TOP,MID,BOT)=  21710.4        22141.8        22578.4

EL=    56  NODES=    38    22    23      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  28.2       -7.98        3.78        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -314.40        10961.         6984.3          .00000      SIG1,SIG2,SIG3=  14289.          .14106-006  -3852.4
    S.I.=  17852.        SIGE=  16433.
MID SX,SY,SXY,SZ=  -757.57        10378.         7386.9          .00000      SIG1,SIG2,SIG3=  14044.          .14511-006  -4424.1
    S.I.=  18488.        SIGE=  16702.
BOT SX,SY,SXY,SZ=  -1200.7        9794.2         7745.5          .00000      SIG1,SIG2,SIG3=  13798.          .14831-006  -5204.7
    S.I.=  19003.        SIGE=  17009.
TOP EP=    -.000125    .000384    .000630 -.000111  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000570
MID EP=    -.000134    .000368    .000654 -.000100  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000579
BOT EP=    -.000144    .000352    .000688 -.000088  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000580
SIGEPL(TOP,MID,BOT)=  16432.6        16701.6        17008.6

EL=    57  NODES=    38    23    39      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  27.8       -7.88        3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  12447.        -9575.0        -8568.7          .00000      SIG1,SIG2,SIG3=  14258.          .20148-006  -11385.
    S.I.=  25643.        SIGE=  22254.
MID SX,SY,SXY,SZ=  12412.        -9405.4        -8611.4          .00000      SIG1,SIG2,SIG3=  14384.          .20210-006  -11357.
    S.I.=  25721.        SIGE=  22326.
BOT SX,SY,SXY,SZ=  12377.        -9235.8        -8654.0          .00000      SIG1,SIG2,SIG3=  14475.          .20278-006  -11334.
    S.I.=  25810.        SIGE=  22407.
TOP EP=     .000531   -.000462   -.000592   -.000030  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000772
MID EP=     .000528   -.000455   -.000614   -.000031  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000775
BOT EP=     .000525   -.000448   -.000636   -.000033  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000777
SIGEPL(TOP,MID,BOT)=  23253.8        22325.8        22497.0

EL=    58  NODES=    38    23    40      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  29.5       -8.20        3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -1779.0        3189.6         -3351.0          .00000      SIG1,SIG2,SIG3=  4880.8          .85456-007  -3470.2
    S.I.=  8331.0        SIGE=  7248.3
MID SX,SY,SXY,SZ=  -2044.2        2909.0         -3285.8          .00000      SIG1,SIG2,SIG3=  4547.1          .84859-007  -3882.2
    S.I.=  8228.3        SIGE=  7139.9
BOT SX,SY,SXY,SZ=  -2309.3        2648.5         -3220.4          .00000      SIG1,SIG2,SIG3=  4233.7          .83885-007  -3894.6
    S.I.=  8128.3        SIGE=  7041.4
TOP EP=    -.000095    .000128   -.000302   -.000014  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000251
MID EP=    -.000101    .000122   -.000286   -.000008  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000248
BOT EP=    -.000106    .000116   -.000270   -.000004  EPPL=  .000000    .000000    .000000    .000000  NUE0=       .300
    EPCR=   .000000    .000000    .000000    .000000  EPCR=  .000000    .000000    .000000    .000000  EPE0=   .000246
SIGEPL(TOP,MID,BOT)=  7248.31        7139.85        7041.36

EL=    59  NODES=    23    24    40      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  29.5       -4.42        3.78        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  7456.0        -539.24        -1068.9          .00000      SIG1,SIG2,SIG3=  7990.0          .88088-007  -673.20
    S.I.=  8883.2        SIGE=  8347.0
MID SX,SY,SXY,SZ=  7691.8        -700.23        -1193.2          .00000      SIG1,SIG2,SIG3=  7857.9          .86350-007  -868.57
    S.I.=  8734.5        SIGE=  8325.1
BOT SX,SY,SXY,SZ=  7527.2        -861.21        -1317.4          .00000      SIG1,SIG2,SIG3=  7728.2          .85084-007  -1062.2
    S.I.=  8792.5        SIGE=  8312.0
```

SARGENT & LUNDY

3308

```
TOP EP:      .000278  -.000100  -.000085  -.000076  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000290
MID EP:      .000274  -.000104  -.000108  -.000073  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000289
BOT EP:      .000270  -.000108  -.000115  -.000069  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000288
SIGEPL(TOP,MID,BOT)=  8346.95       8325.12       8311.98

EL=    60  NODES=    40    24    25      MAT=  2  AREA=  5.33      FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL    48
P1,P2=    .0000        .0000       XC,YC,ZC=  29.5        -.859        3.78       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -1270.7        5227.2        -1517.8        .00000       SIG1,SIG2,SIG3=  5564.3        .56352-007  -1807.8
    S.I.=  7172.0        SIGE=  8518.6
MID SX,SY,SXY,SZ=  -1477.3        5101.3        -1352.1        .00000       SIG1,SIG2,SIG3=  5368.3        .55885-007  -1744.4
    S.I.=  7112.7        SIGE=  8420.7
BOT SX,SY,SXY,SZ=  -1584.0        4875.3        -1186.3        .00000       SIG1,SIG2,SIG3=  5180.3        .55545-007  -1689.0
    S.I.=  7069.3        SIGE=  8339.5
TOP EP:    -.000098    .000195  -.000137  -.000041  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000226
MID EP:    -.000104    .000192  -.000122  -.000038  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000223
BOT EP:    -.000110    .000180  -.000107  -.000034  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000220
SIGEPL(TOP,MID,BOT)=  6518.60       6420.74       6339.53

EL=    61  NODES=    40    25    41      MAT=  2  AREA=  5.33      FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL    48
P1,P2=    .0000        .0000       XC,YC,ZC=  29.5         .920        3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  3285.1        -32.891        -589.07        .00000       SIG1,SIG2,SIG3=  3385.6        .27665-007  -134.37
    S.I.=  3520.9        SIGE=  3455.7
MID SX,SY,SXY,SZ=  3361.7        90.186        -649.34        .00000       SIG1,SIG2,SIG3=  3485.5        .27658-007  -33.884
    S.I.=  3519.9        SIGE=  3503.0
BOT SX,SY,SXY,SZ=  3438.3        213.26        -708.61        .00000       SIG1,SIG2,SIG3=  3587.5        64.034        -.13842-007
    S.I.=  3587.6        SIGE=  3556.0
TOP EP:      .000114  -.000035  -.000053  -.000034  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000120
MID EP:      .000116  -.000032  -.000059  -.000036  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000122
BOT EP:      .000117  -.000028  -.000064  -.000038  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000123
SIGEPL(TOP,MID,BOT)=  3456.70       3502.99       3555.87

EL=    62  NODES=    41    25    42      MAT=  2  AREA=  5.33      FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL    48
P1,P2=    .0000        .0000       XC,YC,ZC=  29.5        4.48        3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  482.00        1006.8        796.22        .00000       SIG1,SIG2,SIG3=  1576.0        .13224-007  -107.11
    S.I.=  1883.1        SIGE=  1632.2
MID SX,SY,SXY,SZ=  489.45        1027.4        816.67        .00000       SIG1,SIG2,SIG3=  1613.6        .13592-007  -116.35
    S.I.=  1729.8        SIGE=  1674.8
BOT SX,SY,SXY,SZ=  476.90        1048.7        841.12        .00000       SIG1,SIG2,SIG3=  1651.2        .13980-007  -125.58
    S.I.=  1776.8        SIGE=  1717.4
TOP EP:      .000006  .000030  .000072  -.000015  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000057
MID EP:      .000006  .000031  .000074  -.000016  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000058
BOT EP:      .000006  .000031  .000076  -.000018  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000060
SIGEPL(TOP,MID,BOT)=  1632.15       1674.77       1717.41

EL=    63  NODES=    25    26    42      MAT=  2  AREA=  5.33      FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL    48
P1,P2=    .0000        .0000       XC,YC,ZC=  29.5        6.26        3.78       TEMPS=  150.0  150.0  150.0  150.0  150.0
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SARGENT & LUNDY

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TOP SX,SY,SXY,SZ=  1407.1        -300.50        -1317.5        .00000       SIG1,SIG2,SIG3=  2123.3        .24871-007  -1016.5
    S.I.=  3139.8        SIGE=  2775.0
MID SX,SY,SXY,SZ=  1436.2        -283.71        -1343.1        .00000       SIG1,SIG2,SIG3=  2171.0        .25061-007  -1018.6
    S.I.=  3189.6        SIGE=  2821.7
BOT SX,SY,SXY,SZ=  1465.3        -266.92        -1368.7        .00000       SIG1,SIG2,SIG3=  2218.8        .25452-007  -1020.5
    S.I.=  3239.4        SIGE=  2868.7
TOP EP:      .000652  -.000025  -.000118  -.000012  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000098
MID EP:      .000653  -.000025  -.000121  -.000012  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000098
BOT EP:      .000654  -.000025  -.000123  -.000013  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000100
SIGEPL(TOP,MID,BOT)=  2774.86       2821.73       2868.59

EL=    64  NODES=    42    26    27      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL    48
P1,P2=    .0000        .0000       XC,YC,ZC=  27.9        8.03        3.78       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -486.52        801.82        -822.19        .00000       SIG1,SIG2,SIG3=  1043.7        .15484-007  -828.28
    S.I.=  1872.0        SIGE=  1706.8
MID SX,SY,SXY,SZ=  -549.22        851.05        -826.34        .00000       SIG1,SIG2,SIG3=  993.84        .15800-007  -891.80
    S.I.=  1885.4        SIGE=  1719.4
BOT SX,SY,SXY,SZ=  -611.83        900.19        -830.49        .00000       SIG1,SIG2,SIG3=  943.59        .15708-007  -1055.3
    S.I.=  1898.8        SIGE=  1732.0
TOP EP:    -.000023  .000026  -.000074  -.000001  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000058
MID EP:    -.000025  .000015  -.000075  .000000  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000080
BOT EP:    -.000026  .000024  -.000075  .000001  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000080
SIGEPL(TOP,MID,BOT)=  1706.78       1719.44       1732.02

EL=    65  NODES=    42    27    43      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL    48
P1,P2=    .0000        .0000       XC,YC,ZC=  26.2        8.03        3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -83.628        402.41        410.32        .00000       SIG1,SIG2,SIG3=  636.26        .74840-008  -317.50
    S.I.=  853.78        SIGE=  841.24
MID SX,SY,SXY,SZ=  -123.10        380.05        443.52        .00000       SIG1,SIG2,SIG3=  638.38        .80128-008  -381.43
    S.I.=  1019.8        SIGE=  892.48
BOT SX,SY,SXY,SZ=  -162.57        357.69        476.72        .00000       SIG1,SIG2,SIG3=  640.64        .85341-008  -445.51
    S.I.=  1086.2        SIGE=  945.68
TOP EP:    -.000007  .000015  .000037  -.000003  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000028
MID EP:    -.000008  .000014  .000040  -.000003  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000031
BOT EP:    -.000009  .000014  .000043  -.000002  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000033
SIGEPL(TOP,MID,BOT)=  841.235       892.476       945.882

EL=    66  NODES=    43    27    44      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000         .000         .000          PL TRI SHELL    48
P1,P2=    .0000        .0000       XC,YC,ZC=  23.0        8.03        3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  131.44        480.80        -547.89        .00000       SIG1,SIG2,SIG3=  881.18        .90367-008  -288.84
    S.I.=  1150.1        SIGE=  1042.0
MID SX,SY,SXY,SZ=  76.310        515.51        -588.82        .00000       SIG1,SIG2,SIG3=  924.41        .96767-008  -332.50
    S.I.=  1256.9        SIGE=  1128.0
BOT SX,SY,SXY,SZ=  21.183        550.41        -628.76        .00000       SIG1,SIG2,SIG3=  966.88        .10734-007  -387.25
    S.I.=  1366.2        SIGE=  1217.2
TOP EP:      .000000  .000015  -.000049  -.000008  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000036
MID EP:    -.000003  .000017  -.000053  -.000006  EPPL:  .000000  .000000  .000000  .000000  NUEO:      300
    EPDR:    .000000  .000000  .000000  .000000  EPCR:  .000000  .000000  .000000  .000000  EPEO:   .000039
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SARGENT & LUNDY

3308

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BOT EP=  -.000005   .000019 -.000057 -.000006  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000042
SIGEPL(TOP,MID,BOT)=  1042.01       1128.03       1217.18

EL=    67  NODES=    27    28    44      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  21.3        8.03        3.78       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  765.77       131.30       282.85       .00000      SIG1,SIG2,SIG3=  873.55       23.518      -.33394-008
    S.I.=  873.55       SIGE=  862.04
MID SX,SY,SXY,SZ=  812.55       91.952       323.96       .00000      SIG1,SIG2,SIG3=  936.80       .78143-008 -32.290
    S.I.=  969.09       SIGE=  953.35
BOT SX,SY,SXY,SZ=  859.33       52.607       365.12       .00000      SIG1,SIG2,SIG3=  1000.0       .85497-008 -88.103
    S.I.=  1088.1       SIGE=  1046.9
TOP EP=   .000025  -.000003   .000028  -.000009  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000030
MID EP=   .000027  -.000005   .000029  -.000008  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000033
BOT EP=   .000029  -.000007   .000033  -.000009  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000036
SIGEPL(TOP,MID,BOT)=  852.038       953.351       1046.88

EL=    68  NODES=    44    28    29      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  18.0        8.03        3.78       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  211.81       806.24      -395.98       .00000      SIG1,SIG2,SIG3=  1004.1       13.812      -.38902-008
    S.I.=  1004.1       SIGE=  987.26
MID SX,SY,SXY,SZ=  83.551       784.58      -479.98       .00000      SIG1,SIG2,SIG3=  1028.4       .93396-008 -160.28
    S.I.=  1188.7       SIGE=  1117.2
BOT SX,SY,SXY,SZ= -44.710       782.68      -583.98       .00000      SIG1,SIG2,SIG3=  1052.7       .10800-007 -334.54
    S.I.=  1387.3       SIGE=  1253.9
TOP EP=   -.000001   .000026  -.000038  -.000011  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000035
MID EP=   -.000005   .000026  -.000043  -.000009  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000039
BOT EP=   -.000009   .000027  -.000051  -.000007  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000044
SIGEPL(TOP,MID,BOT)=  897.256       1117.18       1253.92

EL=    69  NODES=    44    29    45      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  16.4        8.03        3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  417.26       483.65       262.90       .00000      SIG1,SIG2,SIG3=  704.38       176.53      -.20737-008
    S.I.=  704.38       SIGE=  634.80
MID SX,SY,SXY,SZ=  285.58       303.48       443.52       .00000      SIG1,SIG2,SIG3=  738.14       .89710-008 -148.07
    S.I.=  887.21       SIGE=  822.87
BOT SX,SY,SXY,SZ=  153.93       143.31       624.13       .00000      SIG1,SIG2,SIG3=  772.77       .98081-008 -475.53
    S.I.=  1248.3       SIGE=  1081.2
TOP EP=   .000010   .000012   .000024  -.000009  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000022
MID EP=   .000067   .000008   .000040  -.000006  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000029
BOT EP=   .000004   .000003   .000055  -.000003  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000036
SIGEPL(TOP,MID,BOT)=  634.786       822.867       1081.23

EL=    70  NODES=    45    29    45      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  13.1        8.03        3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  240.36       635.39      -152.78       .00000      SIG1,SIG2,SIG3=  687.77       188.18      -.19828-008
    S.I.=  687.77       SIGE=  615.63
MID SX,SY,SXY,SZ=  5.6543       645.42      -267.96       .00000      SIG1,SIG2,SIG3=  742.83       .65574-008 -91.751
    S.I.=  834.58       SIGE=  782.69
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SARGENT & LUNDY

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BOT SX,SY,SXY,SZ= -229.05       855.25      -383.14       .00000      SIG1,SIG2,SIG3=  784.16       .81939-008 -371.96
    S.I.=  1170.1       SIGE=  1035.5
TOP EP=   .000002   .000020  -.000014  -.000005  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000021
MID EP=   -.000007   .000022  -.000024  -.000007  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000028
BOT EP=   -.000015   .000025  -.000035  -.000004  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000034
SIGEPL(TOP,MID,BOT)=  615.635       782.895       1035.52

EL=    71  NODES=    29    30    46      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  11.5        8.03        3.78       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  846.57       562.85      -121.68       .00000      SIG1,SIG2,SIG3=  981.80       527.81      -.17851-008
    S.I.=  981.80       SIGE=  851.14
MID SX,SY,SXY,SZ=  780.36       84.858       174.77       .00000      SIG1,SIG2,SIG3=  802.90       42.412      -.29877-008
    S.I.=  802.90       SIGE=  782.56
BOT SX,SY,SXY,SZ=  674.15      -382.94       471.23       .00000      SIG1,SIG2,SIG3=  785.79       .10810-007 -564.87
    S.I.=  1350.4       SIGE=  1172.9
TOP EP=   .000027   .000010  -.000011  -.000018  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000030
MID EP=   .000025  -.000005   .000016  -.000009  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000027
BOT EP=   .000024  -.000020   .000043  -.000002  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000041
SIGEPL(TOP,MID,BOT)=  851.136       782.560       1172.95

EL=    72  NODES=    46    30    31      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  8.20        8.02        3.78       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  401.08       738.60       14.538       .00000      SIG1,SIG2,SIG3=  739.22       400.46      -.13308-008
    S.I.=  739.22       SIGE=  640.93
MID SX,SY,SXY,SZ=  78.480       738.81      -262.27       .00000      SIG1,SIG2,SIG3=  830.30       .86260-008 -13.004
    S.I.=  843.31       SIGE=  836.68
BOT SX,SY,SXY,SZ= -244.11       739.02      -539.08       .00000      SIG1,SIG2,SIG3=  877.01       .11484-007 -482.10
    S.I.=  1456.1       SIGE=  1267.8
TOP EP=   .000006   .000021   .000001  -.000012  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000022
MID EP=   -.000005   .000025  -.000024  -.000009  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000029
BOT EP=   -.000016   .000028  -.000048  -.000005  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000045
SIGEPL(TOP,MID,BOT)=  640.926       838.681       1267.62

EL=    73  NODES=    48    31    47      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=  .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  6.58        8.02        3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  1016.6       1268.9      -125.78       .00000      SIG1,SIG2,SIG3=  1320.9       984.61      -.13995-008
    S.I.=  1320.9       SIGE=  1183.6
MID SX,SY,SXY,SZ=  413.46       193.55       373.46       .00000      SIG1,SIG2,SIG3=  692.60       .81176-008 -65.400
    S.I.=  778.60       SIGE=  738.44
BOT SX,SY,SXY,SZ= -189.72      -881.75       872.68       .00000      SIG1,SIG2,SIG3=  403.05       .14782-007 -1474.5
    S.I.=  1877.6       SIGE=  1712.0
TOP EP=   .000022   .000033  -.000011  -.000024  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000041
MID EP=   .000012   .000002   .000034  -.000008  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000028
BOT EP=   .000003  -.000029   .000078   .000011  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=  .000058
SIGEPL(TOP,MID,BOT)=  1183.85       739.444       1711.89
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SARGENT & LUNDY

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EL=   74  NODES=   47   31   48      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=   .000        .000        .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=   3.28        8.01        3.11       TEMPS=   150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,S2=   2815.5       1543.7       -176.01       .00000      SIG1,SIG2,SIG3=   2839.4       1519.8       -.51844-008
    S.I.=   2839.4       SIGE=   2481.1
MID SX,SY,SXY,S2=  -51.462       591.03       -100.17       .00000      SIG1,SIG2,SIG3=   606.29       .52881-008  -66.738
    S.I.=   673.03       SIGE=   642.26
BOT SX,SY,SXY,S2=  -2918.5      -361.61       -24.339       .00000      SIG1,SIG2,SIG3=  -.37971-014  -361.38      -2918.7
    S.I.=   2918.7       SIGE=   2755.8
TOP EP=      .000082     .000024  -.000016  -.000045   EPPL=   .000000    .000000    .000000    .000000   NUEO=       .300
    EPDR=    .000000     .000000    .000000    .000000   EPCR=   .000000    .000000    .000000    .000000   EPEQ=    .000085
MID EP=     -.000008     .000021  -.000009  -.000008   EPPL=   .000000    .000000    .000000    .000000   NUEQ=       .300
    EPDR=    .000000     .000000    .000000    .000000   EPCR=   .000000    .000000    .000000    .000000   EPEQ=    .000022
BOT EP=     -.000087     .000018  -.000002    .000034   EPPL=   .000000    .000000    .000000    .000000   NUEQ=       .300
    EPDR=    .000000     .000000    .000000    .000000   EPCR=   .000000    .000000    .000000    .000000   EPEQ=    .000086
SIGEPL(TOP,MID,BOT)=   2481.06       642.262       2755.86

EL=   75  NODES=   31   32   48      MAT=   2  AREA=  4.92       FBOT,FMID,FTOP=   .000        .000        .000          PL TRI SHELL   48
P1,P2=   .0000       .0000       XC,YC,ZC=   1.64        8.02        3.78       TEMPS=   150.0   150.0   150.0   150.0   150.0
TOP SX,SY,SXY,S2=   1991.2       2892.0       -286.83       .00000      SIG1,SIG2,SIG3=   2794.4       1888.8       -.35578-008
    S.I.=   2794.4       SIGE=   2488.5
MID SX,SY,SXY,S2=   707.42       152.25       21.502        .00000      SIG1,SIG2,SIG3=   708.25       151.42       -.21878-008
    S.I.=   708.25       SIGE=   645.98
BOT SX,SY,SXY,S2=  -576.38      -2387.5       329.84        .00000      SIG1,SIG2,SIG3=  -.41415-014  -518.18      -2445.7
    S.I.=   2445.7       SIGE=   2232.2
TOP EP=      .000041     .000073  -.000026  -.000048   EPPL=   .000000    .000000    .000000    .000000   NUEQ=       .300
    EPDR=    .000000     .000000    .000000    .000000   EPCR=   .000000    .000000    .000000    .000000   EPEQ=    .000085
MID EP=      .000023    -.000002    .000002  -.000005   EPPL=   .000000    .000000    .000000    .000000   NUEQ=       .300
    EPDR=    .000000     .000000    .000000    .000000   EPCR=   .000000    .000000    .000000    .000000   EPEQ=    .000022
BOT EP=      .000005    -.000077    .000030    .000031   EPPL=   .000000    .000000    .000000    .000000   NUEQ=       .300
    EPDR=    .000000     .000000    .000000    .000000   EPCR=   .000000    .000000    .000000    .000000   EPEQ=    .000077
SIGEPL(TOP,MID,BOT)=   2488.47       645.993       2232.18

EL=   76  NODES=   33   34  MAT=  1  PRESSURES(I,Y)=    .00000          .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875          .5625       SHEAR CENTER=   .8674-018     .7500        AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
 PRINCIPLE M OF I:          IYP=   .3155-002    IZP=   .3155-002    THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      4870.6
         2   150.00      6901.8
         3   150.00      14838.
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      11395.
         2   150.00      8126.8
         3   150.00      5864.1

EL=   77  NODES=   34   35  MAT=  1  PRESSURES(I,Y)=    .00000          .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875          .5625       SHEAR CENTER=   .8674-018     .7500        AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
 PRINCIPLE M OF I:          IYP=   .3155-002    IZP=   .3155-002    THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      7208.6
         2   150.00      9043.6
         3   150.00      5349.1
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      9453.1
         2   150.00      8741.8
         3   150.00      3704.3
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EL=   78  NODES=   35   36  MAT=  1  PRESSURES(I,Y)=    .00000          .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875          .5625       SHEAR CENTER=   .8674-018     .7500        AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
 PRINCIPLE M OF I:          IYP=   .3155-002    IZP=   .3155-002    THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      6877.5
         2   150.00      8857.4
         3   150.00      4845.0
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      10080.
         2   150.00      7803.2
         3   150.00      3150.8

EL=   79  NODES=   36   37  MAT=  1  PRESSURES(I,Y)=    .00000          .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875          .5625       SHEAR CENTER=   .8674-018     .7500        AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
 PRINCIPLE M OF I:          IYP=   .3155-002    IZP=   .3155-002    THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      7353.2
         2   150.00      7413.6
         3   150.00      5592.8
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      8783.7
         2   150.00      7325.8
         3   150.00      4327.8

EL=   80  NODES=   37   38  MAT=  1  PRESSURES(I,Y)=    .00000          .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875          .5625       SHEAR CENTER=   .8674-018     .7500        AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
 PRINCIPLE M OF I:          IYP=   .3155-002    IZP=   .3155-002    THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      1132.0
         2   150.00      7289.1
         3   150.00      7807.9
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      13180.
         2   150.00      4131.5
         3   150.00      2065.0

EL=   81  NODES=   38   39  MAT=  1  PRESSURES(I,Y)=    .00000          .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875          .5625       SHEAR CENTER=   .8674-018     .7500        AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
 PRINCIPLE M OF I:          IYP=   .3155-002    IZP=   .3155-002    THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00     -7081.7
         2   150.00      4382.9
         3   150.00      10374.
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      17152.
         2   150.00     -2582.4
         3   150.00      81.144

EL=   82  NODES=   39   40  MAT=  1  PRESSURES(I,Y)=    .00000          .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875          .5625       SHEAR CENTER=   .8674-018     .7500        AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
 PRINCIPLE M OF I:          IYP=   .3155-002    IZP=   .3155-002    THETAP=   .0000
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
         1   150.00      8928.8
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	2	150.00	-2571.5												
	3	150.00	4046.9												
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	116.45												
	2	150.00	1921.0												
	3	150.00	1874.2												

EL= 83 NODES= 40 41 MAT= 1 PRESSURES[I,Y]= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , .5625 SHEAR CENTER= .8674-018 , .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	418.95												
	2	150.00	1513.1												
	3	150.00	2741.2												
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	4091.7												
	2	150.00	1195.3												
	3	150.00	-296.05												

EL= 84 NODES= 41 42 MAT= 1 PRESSURES[I,Y]= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , .5625 SHEAR CENTER= .8674-018 , .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	-2221.0												
	2	150.00	1354.4												
	3	150.00	2083.8												
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	3894.9												
	2	150.00	-92.100												
	3	150.00	-1237.2												

EL= 85 NODES= 42 43 MAT= 1 PRESSURES[I,Y]= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , .5625 SHEAR CENTER= .8674-018 , .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	660.65												
	2	150.00	-196.37												
	3	150.00	43.603												
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	-144.17												
	2	150.00	385.52												
	3	150.00	-275.45												

EL= 86 NODES= 43 44 MAT= 1 PRESSURES[I,Y]= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , .5625 SHEAR CENTER= .8674-018 , .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	580.95												
	2	150.00	355.68												
	3	150.00	-572.98												
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	404.50												
	2	150.00	484.50												
	3	150.00	-813.77												

SARGENT & LUNDY

EL= 87 NODES= 44 45 MAT= 1 PRESSURES[I,Y]= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , .5625 SHEAR CENTER= .8674-018 , .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	977.50												
	2	150.00	606.16												
	3	150.00	-1234.9												
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	223.16												
	2	150.00	881.80												
	3	150.00	-827.81												

EL= 88 NODES= 45 46 MAT= 1 PRESSURES[I,Y]= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , .5625 SHEAR CENTER= .8674-018 , .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	1458.6												
	2	150.00	721.34												
	3	150.00	-1278.8												
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	-171.17												
	2	150.00	886.65												
	3	150.00	21.783												

EL= 89 NODES= 46 47 MAT= 1 PRESSURES[I,Y]= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , .5625 SHEAR CENTER= .8674-018 , .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	.3750.6												
	2	150.00	1385.8												
	3	150.00	-3002.6												
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	-2443.2												
	2	150.00	743.01												
	3	150.00	4496.9												

EL= 90 NODES= 47 48 MAT= 1 PRESSURES[I,Y]= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , .5625 SHEAR CENTER= .8674-018 , .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	2816.5												
	2	150.00	273.52												
	3	150.00	3376.8												
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			
	1	150.00	-1803.8												
	2	150.00	-325.57												
	3	150.00	8997.1												

EL= 91 NODES= 48 49 MAT= 1 PRESSURES[I,Y]= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24
CENTROID= -.1875 , .5625 SHEAR CENTER= .8674-018 , .7500 AREA= .5385-001 J= .2313-004 IW= .2374-038
PRINCIPLE M OF I: IYP= .3155-002 IZP= .3155-002 THETAP= .0000

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX			

SARGENT & LUNDY

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         1   150.00      1009.2
         2   150.00     -580.40
         3   150.00     -580.40
END J  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00     -817.71
         2   150.00      51.892
         3   150.00      51.892


EL=   92  NODES=   48   50  MAT=  1  PRESSURES(Z,Y)=     .00000        .00000     AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.1875        .5625       SHEAR CENTER=   .8674-018,    .7500       AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I        TYP=  .3155-002   IZP=  .3155-002   THETAP=   .0000
END I  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00      389.65
         2   150.00     -105.18
         3   150.00     -109.16
END J  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00     -503.65
         2   150.00      181.96
         3   150.00      181.94


EL=   93  NODES=   50   33  MAT=  1  PRESSURES(Z,Y)=     .00000        .00000     AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.1875        .5625       SHEAR CENTER=   .8674-018,    .7500       AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I        TYP=  .3155-002   IZP=  .3155-002   THETAP=   .0000
END I  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00      1084.5
         2   150.00     -15.451
         3   150.00     -15.451
END J  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00     -529.44
         2   150.00      523.87
         3   150.00      523.87

EL=   94  NODES=   33   34   51   51      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
 XC,YC,ZC=   1.230      -8.001        .3334-002  PRESS=   .00000        .00000
 MX,MY,MXY=    .95853-001     .11585        -1.0061
 TOP SX,SY,SXY,SZ=   8592.1        1425.5       -811.15        .00000       SIG1,SIG2,SIG3=   8882.8        1334.9       -.28887-007
     S.I.=   8882.6        SIGE=   8094.3
 MID SX,SY,SXY,SZ=   8543.1        1368.7       -317.67        .00000       SIG1,SIG2,SIG3=   8557.2        1354.7       -.28296-007
     S.I.=   8557.2        SIGE=   7966.7
 BOT SX,SY,SXY,SZ=   8494.2        1311.9        176.80        .00000       SIG1,SIG2,SIG3=   8498.5        1307.6       -.28250-007
     S.I.=   8498.5        SIGE=   7926.0

EL=   95  NODES=   51   34   52   52      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
 XC,YC,ZC=   3.690      -7.998        -1.217     PRESS=   .00000        .00000
 MX,MY,MXY=     .73502        -1.5995        .23510
 TOP SX,SY,SXY,SZ=   5395.4        2941.2        3001.4        .00000       SIG1,SIG2,SIG3=   7410.9        825.71       -.25478-007
     S.I.=   7410.9        SIGE=   6894.1
 MID SX,SY,SXY,SZ=   5034.9        2725.4        2888.1        .00000       SIG1,SIG2,SIG3=   7339.7        1420.9       -.23253-007
     S.I.=   7339.7        SIGE=   6742.5
 BOT SX,SY,SXY,SZ=   4674.3        2770.8        .00000        .00000       SIG1,SIG2,SIG3=   7364.4        1820.3       -.21780-007
     S.I.=   7364.4        SIGE=   6843.9

EL=   96  NODES=   34   53   52   52      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
 XC,YC,ZC=   6.151      -7.896        -1.217     PRESS=   .00000        .00000
 MX,MY,MXY=    -.45221        1.0876        -.18088
 TOP SX,SY,SXY,SZ=   3260.2        9436.4       -2874.1        .00000       SIG1,SIG2,SIG3=   7421.5        1275.1       -.24147-007
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     S.I.=   7421.5        SIGE=   6873.2
 MID SX,SY,SXY,SZ=   3482.0        4902.9       -2795.2        .00000       SIG1,SIG2,SIG3=   7078.5        1308.4       -.22661-007
     S.I.=   7078.6        SIGE=   8521.6
 BOT SX,SY,SXY,SZ=   3703.6        4386.5       -2716.3        .00000       SIG1,SIG2,SIG3=   6773.3        1300.1       -.21502-007
     S.I.=   6773.3        SIGE=   6225.9

EL=   97  NODES=   34   35   53   53      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
 XC,YC,ZC=   6.611      -7.997        .3425-002  PRESS=   .00000        .00000
 MX,MY,MXY=    -.57301        .42323        -.44486
 TOP SX,SY,SXY,SZ=   8218.3        789.39       -1140.6        .00000       SIG1,SIG2,SIG3=   8389.0        588.85       -.30605-007
     S.I.=   8389.0        SIGE=   8106.3
 MID SX,SY,SXY,SZ=   8498.4        561.77        -922.41        .00000       SIG1,SIG2,SIG3=   8605.2        455.98       -.32015-007
     S.I.=   8605.2        SIGE=   8346.5
 BOT SX,SY,SXY,SZ=   8760.4        354.14        -704.21        .00000       SIG1,SIG2,SIG3=   8838.9        295.70       -.33563-007
     S.I.=   8838.8        SIGE=   8694.8

EL=   98  NODES=   35   36   53   53      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
 XC,YC,ZC=   11.07      -7.997        .3492-002  PRESS=   .00000        .00000
 MX,MY,MXY=    -.48270        .18400        -.18426
 TOP SX,SY,SXY,SZ=   8315.2        672.60       -2157.2        .00000       SIG1,SIG2,SIG3=   8882.0        105.78       -.34478-007
     S.I.=   8882.0        SIGE=   8829.8
 MID SX,SY,SXY,SZ=   8552.0        577.45       -2066.8        .00000       SIG1,SIG2,SIG3=   8956.8        73.625       -.35267-007
     S.I.=   8956.8        SIGE=   9019.2
 BOT SX,SY,SXY,SZ=   8788.7        482.29       -1976.4        .00000       SIG1,SIG2,SIG3=   9035.0        36.013       -.36139-007
     S.I.=   9235.0        SIGE=   9217.1

EL=   99  NODES=   53   36   54   54      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
 XC,YC,ZC=   13.53      -7.990        -1.217     PRESS=   .00000        .00000
 MX,MY,MXY=     .26813        .42842        -.31893
 TOP SX,SY,SXY,SZ=   6591.3        2007.6        1916.4        .00000       SIG1,SIG2,SIG3=   7287.0        1212.1       -.23473-007
     S.I.=   7287.0        SIGE=   6727.6
 MID SX,SY,SXY,SZ=   6460.8        1796.7        2072.9        .00000       SIG1,SIG2,SIG3=   7249.1        1010.3       -.24510-007
     S.I.=   7249.1        SIGE=   6800.5
 BOT SX,SY,SXY,SZ=   6330.2        1585.5        2229.3        .00000       SIG1,SIG2,SIG3=   7213.8        705.88       -.25567-007
     S.I.=   7213.8        SIGE=   6866.1

EL=  100  NODES=   36   55   54   54      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
 XC,YC,ZC=   15.89      -7.986        -1.217     PRESS=   .00000        .00000
 MX,MY,MXY=     .84783        -.15098        .25056
 TOP SX,SY,SXY,SZ=   1256.1        5685.7       -1555.6        .00000       SIG1,SIG2,SIG3=   6161.6        760.23       -.21220-007
     S.I.=   6161.6        SIGE=   5818.8
 MID SX,SY,SXY,SZ=   938.31        5738.8       -1682.6        .00000       SIG1,SIG2,SIG3=   6270.7        407.41       -.23034-007
     S.I.=   6270.7        SIGE=   6077.2
 BOT SX,SY,SXY,SZ=   620.54        5813.8       -1805.5        .00000       SIG1,SIG2,SIG3=   6379.9        54.634       -.24845-007
     S.I.=   6379.9        SIGE=   6352.8

EL=  101  NODES=   38   37   56   55      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
 XC,YC,ZC=   16.45      -7.989        .3593-002  PRESS=   .00000        .00000
 MX,MY,MXY=    -.18033        .15561        .49842
 TOP SX,SY,SXY,SZ=   8230.6        895.88       -2847.1        .00000       SIG1,SIG2,SIG3=   8206.0        .72956-007  -75.588
     S.I.=   9285.6        SIGE=   9246.1
 MID SX,SY,SXY,SZ=   8319.0        818.55       -3091.6        .00000       SIG1,SIG2,SIG3=   9429.2        .78370-007  -380.80
     S.I.=   9719.8        SIGE=   9577.8
 BOT SX,SY,SXY,SZ=   8407.5        743.22       -3336.1        .00000       SIG1,SIG2,SIG3=   9856.2        .79842-007  -805.45
     S.I.=   10162.        SIGE=   9918.8

EL=  102  NODES=   37   38   56   56      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
 XC,YC,ZC=   20.81      -7.984        .3502-002  PRESS=   .00000        .00000
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MX,MY,MXY=     .12524          .37706          .61897
TOP SX,SY,SXY,SZ=  7377.8          703.86         -2960.2          .00000      SIG1,SIG2,SIG3=  8501.5          .70089-007 -420.10
    S.I.=  8921.6          SIGE=  8719.2
MID SX,SY,SXY,SZ=  7316.3          516.70         -3282.9          .00000      SIG1,SIG2,SIG3=  8629.0          .74038-007 -793.97
    S.I.=  9423.0          SIGE=  9052.2
BOT SX,SY,SXY,SZ=  7254.9          333.75         -3565.5          .00000      SIG1,SIG2,SIG3=  8783.1          .78080-007 -1174.4
    S.I.=  9937.5          SIGE=  9405.4

EL=  103  NODES=    55    38    56    56       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  83
XC,YC,ZC=  23.37         -7.979         -1.217          PRESS=  .00000          .00000
MX,MY,MXY=   -.28718          1.1376         -.18930
TOP SX,SY,SXY,SZ=  8242.2         -1555.8          1178.2          .00000      SIG1,SIG2,SIG3=  8416.7          .84011-007 -1730.2
    S.I.=  8146.8          SIGE=  7434.3
MID SX,SY,SXY,SZ=  8383.1         -2113.8          1277.0          .00000      SIG1,SIG2,SIG3=  8570.9          .89712-007 -2301.5
    S.I.=  8872.4          SIGE=  7974.7
BOT SX,SY,SXY,SZ=  8523.9         -2671.8          1374.7          .00000      SIG1,SIG2,SIG3=  8725.1          .75413-007 -2872.9
    S.I.=  9598.0          SIGE=  8532.3

EL=  104  NODES=    38    57    58    56       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  83
XC,YC,ZC=  25.83         -7.977         -1.218          PRESS=  .00000          .00000
MX,MY,MXY=     .99337          -.24702          -.80414-001
TOP SX,SY,SXY,SZ= -2236.0          3236.7          -397.12          .00000      SIG1,SIG2,SIG3=  3285.4          .43450-007 -2284.6
    S.I.=  5530.0          SIGE=  4815.2
MID SX,SY,SXY,SZ= -2723.2          3357.9          -352.77          .00000      SIG1,SIG2,SIG3=  3378.3          .48101-007 -2743.8
    S.I.=  6121.9          SIGE=  5311.2
BOT SX,SY,SXY,SZ= -3210.5          3479.1          -308.42          .00000      SIG1,SIG2,SIG3=  3493.2          .52784-007 -3224.7
    S.I.=  6717.9          SIGE=  5819.4

EL=  105  NODES=    38    39    57    57       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  83
XC,YC,ZC=  28.29         -7.976          .2352-002  PRESS=  .00000          .00000
MX,MY,MXY=    .84768          .94881          .42090
TOP SX,SY,SXY,SZ=  4120.9         -3624.2         -2618.1          .00000      SIG1,SIG2,SIG3=  4921.7          .73439-007 -4425.1
    S.I.=  9346.8          SIGE=  8098.4
MID SX,SY,SXY,SZ=  3803.2         -4089.5         -2822.6          .00000      SIG1,SIG2,SIG3=  4708.7          .76244-007 -4995.0
    S.I.=  9703.7          SIGE=  8406.9
BOT SX,SY,SXY,SZ=  3485.5         -4554.8         -3028.0          .00000      SIG1,SIG2,SIG3=  4498.9          .79099-007 -5568.2
    S.I.=  10067           SIGE=  8734.7

EL=  106  NODES=    39    40    57    57       MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  83
XC,YC,ZC=  29.52         -8.640          .2336-002  PRESS=  .00000          .00000
MX,MY,MXY=    .85108          1.2201          .25177
TOP SX,SY,SXY,SZ=  2584.2         -3987.8         -635.32          .00000      SIG1,SIG2,SIG3=  2625.2          .52439-007 -4048.8
    S.I.=  6674.0          SIGE=  5823.5
MID SX,SY,SXY,SZ=  2148.7         -4586.2         -758.82          .00000      SIG1,SIG2,SIG3=  2231.2          .54229-007 -4670.7
    S.I.=  6901.9          SIGE=  6100.4
BOT SX,SY,SXY,SZ=  1729.3         -5184.7         -882.31          .00000      SIG1,SIG2,SIG3=  1840.1          .56086-007 -5295.5
    S.I.=  7135.6          SIGE=  6416.6

EL=  107  NODES=    57    40    58    58       MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  83
XC,YC,ZC=  29.52         -3.972         -1.218          PRESS=  .00000          .00000
MX,MY,MXY=    .49125          .50875          -.71055-001
TOP SX,SY,SXY,SZ=  457.58         -752.06         -67.883          .00000      SIG1,SIG2,SIG3=  461.39          .95842-006 -755.87
    S.I.=  1217.3          SIGE=  1064.4
MID SX,SY,SXY,SZ=  216.62         -1000.6         -33.131          .00000      SIG1,SIG2,SIG3=  217.52          .95783-006 -1001.5
    S.I.=  1219.1          SIGE=  1126.2
BOT SX,SY,SXY,SZ= -24.334         -1249.2          1.7215          .00000      SIG1,SIG2,SIG3=  .43340-014 -24.332          -1249.2
    S.I.=  1249.2          SIGE=  1237.2
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EL=  108  NODES=    40    59    58    58       MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  83
XC,YC,ZC=  29.52         -1.304         -1.217          PRESS=  .00000          .00000
MX,MY,MXY=    .36717          .29548          .94080-001
TOP SX,SY,SXY,SZ=  692.50         -606.45         -68.181          .00000      SIG1,SIG2,SIG3=  696.07          .10262-007 -610.01
    S.I.=  1306.1          SIGE=  1131.9
MID SX,SY,SXY,SZ=  522.21         -781.38         -114.33          .00000      SIG1,SIG2,SIG3=  532.38          .10167-007 -781.56
    S.I.=  1294.0          SIGE=  1126.4
BOT SX,SY,SXY,SZ=  351.93         -956.31         -160.48          .00000      SIG1,SIG2,SIG3=  372.23          .10127-007 -815.81
    S.I.=  1288.8          SIGE=  1148.9

EL=  109  NODES=    40    41    58    59       MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  83
XC,YC,ZC=  29.52          1.364          .3423-002  PRESS=  .00000          .00000
MX,MY,MXY=   -.67888-002          .21089          .18184
TOP SX,SY,SXY,SZ=  2331.2          367.46         -137.65          .00000      SIG1,SIG2,SIG3=  2340.8          357.85          -.77801-008
    S.I.=  2340.8          SIGE=  2164.0
MID SX,SY,SXY,SZ=  2334.5          263.87         -217.10          .00000      SIG1,SIG2,SIG3=  2357.0          241.45          -.83112-008
    S.I.=  2357.0          SIGE=  2246.1
BOT SX,SY,SXY,SZ=  2337.8          180.48         -298.55          .00000      SIG1,SIG2,SIG3=  2377.5          120.61          -.88858-008
    S.I.=  2377.5          SIGE=  2319.5

EL=  110  NODES=    41    42    58    59       MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  83
XC,YC,ZC=  29.52          4.033          .3468-002  PRESS=  .00000          .00000
MX,MY,MXY=    .32383-001          .13980          .81653-001
TOP SX,SY,SXY,SZ=  846.88         -118.53          589.02          .00000      SIG1,SIG2,SIG3=  1110.2          .11725-007 -382.05
    S.I.=  1492.2          SIGE=  1342.6
MID SX,SY,SXY,SZ=  630.80         -187.16          528.87          .00000      SIG1,SIG2,SIG3=  1055.8          .11538-007 -412.28
    S.I.=  1466.2          SIGE=  1311.6
BOT SX,SY,SXY,SZ=  414.93         -255.78          488.52          .00000      SIG1,SIG2,SIG3=  1004.6          .11383-007 -445.64
    S.I.=  1460.0          SIGE=  1286.5

EL=  111  NODES=    59    42    60    60       MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  83
XC,YC,ZC=  29.52          8.701         -1.217          PRESS=  .00000          .00000
MX,MY,MXY=   -.58047-001          -.17183-002          -.83173-001
TOP SX,SY,SXY,SZ=  416.78          41.703          116.50          .00000      SIG1,SIG2,SIG3=  69.808          .40407-008 -444.67
    S.I.=  514.27          SIGE=  483.24
MID SX,SY,SXY,SZ=  388.29          42.547          147.48          .00000      SIG1,SIG2,SIG3=  88.197          .41025-008 -433.84
    S.I.=  522.14          SIGE=  484.10
BOT SX,SY,SXY,SZ=  359.82          43.390          178.47          .00000      SIG1,SIG2,SIG3=  111.04          .42311-008 -427.46
    S.I.=  538.50          SIGE=  492.48

EL=  112  NODES=    42    61    60    60       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  83
XC,YC,ZC=  28.29          8.034         -1.217          PRESS=  .00000          .00000
MX,MY,MXY=    .23645-001          .50687-001          .43552-001
TOP SX,SY,SXY,SZ=  184.40         -288.40         -154.80          .00000      SIG1,SIG2,SIG3=  212.15          .43081-008 -338.15
    S.I.=  546.30          SIGE=  478.47
MID SX,SY,SXY,SZ=  152.80         -313.26         -175.86          .00000      SIG1,SIG2,SIG3=  211.77          .45886-008 -372.23
    S.I.=  584.01          SIGE=  512.09
BOT SX,SY,SXY,SZ=  141.20         -338.12         -197.33          .00000      SIG1,SIG2,SIG3=  211.98          .48784-008 -406.90
    S.I.=  620.48          SIGE=  546.65

EL=  113  NODES=    42    43    61    61       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  83
XC,YC,ZC=  29.83          8.033          .3434-002  PRESS=  .00000          .00000
MX,MY,MXY=   -.37704-001          .18102          -.55885-002
TOP SX,SY,SXY,SZ=  218.16          7.0025          141.80          .00000      SIG1,SIG2,SIG3=  288.21          .27756-008 -84.051
    S.I.=  353.26          SIGE=  325.99
MID SX,SY,SXY,SZ=  236.85         -71.876          144.34          .00000      SIG1,SIG2,SIG3=  293.64          .33204-008 -128.88
    S.I.=  422.80          SIGE=  375.13
BOT SX,SY,SXY,SZ=  255.14         -150.85          147.08          .00000      SIG1,SIG2,SIG3=  302.82          .38400-008 -186.63
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SARGENT & LUNDY

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    S.I.=   501.45        SIGE=  437.38

E.=  114  NODES=    43    44    81    81       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   23.37        8.032        .3483-002  PRESS=    .00000        .00000
MX,MY,MXY=   -.16104          .79800-001   -.11122
TOP SX,SY,SXY,SZ=   415.33        44.466        185.15        .00000      SIG1,SIG2,SIG3=   491.94        .41178-008  -32.141
    S.I.=   524.08        SIGE=  506.77
MID SX,SY,SXY,SZ=   494.32        5.3238        239.70        .00000      SIG1,SIG2,SIG3=   582.22        .53805-008  -92.575
    S.I.=   684.79        SIGE=  643.52
BOT SX,SY,SXY,SZ=   573.31       -33.818        294.25        .00000      SIG1,SIG2,SIG3=   692.62        .68436-008  -153.03
    S.I.=   845.54        SIGE=  780.37

EL.=  115  NODES=    81    44    82    82       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   20.91        8.031       -1.217      PRESS=    .00000        .00000
MX,MY,MXY=     .12566          .99144-001   -.14201
TOP SX,SY,SXY,SZ=   29.554        385.85       -9.7000        .00000      SIG1,SIG2,SIG3=   380.12        29.387       -.14171-008
    S.I.=   380.12        SIGE=  376.28
MID SX,SY,SXY,SZ=  -31.977        341.23        59.856        .00000      SIG1,SIG2,SIG3=   350.82        .30800-008  -41.373
    S.I.=   391.99        SIGE=  373.03
BOT SX,SY,SXY,SZ=  -93.612        292.50        129.61        .00000      SIG1,SIG2,SIG3=   332.06        .36547-008  -133.08
    S.I.=   465.14        SIGE=  414.93

EL.=  116  NODES=    44    83    82    82       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   18.45        8.029       -1.217      PRESS=    .00000        .00000
MX,MY,MXY=     .15229         -.13833-001     .21883
TOP SX,SY,SXY,SZ=   586.10        56.254       -13.076        .00000      SIG1,SIG2,SIG3=   596.44        55.913       -.19884-008
    S.I.=   556.44        SIGE=  530.70
MID SX,SY,SXY,SZ=   461.40        63.040       -120.32        .00000      SIG1,SIG2,SIG3=   513.54        30.906       -.18980-008
    S.I.=   513.54        SIGE=  496.80
BOT SX,SY,SXY,SZ=   406.70        69.825       -227.56        .00000      SIG1,SIG2,SIG3=   521.38        .44480-008  -44.851
    S.I.=   566.23        SIGE=  545.19

EL.=  117  NODES=    44    45    83    83       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   15.99        8.027        .3485-002  PRESS=    .00000        .00000
MX,MY,MXY=    .52906-001     .67899        -.92573-001
TOP SX,SY,SXY,SZ=   634.41        380.14        137.07        .00000      SIG1,SIG2,SIG3=   691.17        303.38       -.15235-008
    S.I.=   691.17        SIGE=  600.05
MID SX,SY,SXY,SZ=   606.46        27.090        182.48        .00000      SIG1,SIG2,SIG3=   680.99        .53934-008  -25.441
    S.I.=   886.43        SIGE=  674.07
BOT SX,SY,SXY,SZ=   582.51       -305.98        227.89        .00000      SIG1,SIG2,SIG3=   837.55        .78458-008  -361.00
    S.I.=   898.55        SIGE=  675.75

EL.=  118  NODES=    45    46    83    83       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   13.53        8.025        .3454-002  PRESS=    .00000        .00000
MX,MY,MXY=    -.80831-001     .76298        -.22144
TOP SX,SY,SXY,SZ=   618.60        416.54        45.213        .00000      SIG1,SIG2,SIG3=   617.74        414.49       -.79847-009
    S.I.=   617.74        SIGE=  545.31
MID SX,SY,SXY,SZ=   656.15        41.397        123.63        .00000      SIG1,SIG2,SIG3=   680.15        17.391       -.26037-008
    S.I.=   680.15        SIGE=  671.63
BOT SX,SY,SXY,SZ=   695.70       -332.84        232.45        .00000      SIG1,SIG2,SIG3=   745.79        .88686-008  -382.84
    S.I.=  1128.7         SIGE=  894.20

EL.=  119  NODES=    83    46    84    84       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   11.07        8.022       -1.217      PRESS=    .00000        .00000
MX,MY,MXY=     .62572          1.1291        -.57848
TOP SX,SY,SXY,SZ=   610.76        852.41       -49.165        .00000      SIG1,SIG2,SIG3=   859.34        803.82       -.13967-008
    S.I.=   859.34        SIGE=  840.04
MID SX,SY,SXY,SZ=   206.74        398.60        234.58        .00000      SIG1,SIG2,SIG3=   555.80        48.538       -.19828-008
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    S.I.=   855.80        SIGE=  533.19
BOT SX,SY,SXY,SZ=  -188.28       -155.20        516.33        .00000      SIG1,SIG2,SIG3=   341.56        .81626-008  -696.04
    S.I.=  1037.8         SIGE=  915.91

EL.=  120  NODES=    46    85    84    84       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   8.609        8.019       -1.217      PRESS=    .00000        .00000
MX,MY,MXY=     1.2859          .93535        .65847
TOP SX,SY,SXY,SZ=   1056.6        598.90        70.618        .00000      SIG1,SIG2,SIG3=   1070.0        585.46       -.15107-008
    S.I.=   1070.0        SIGE=  938.78
MID SX,SY,SXY,SZ=   435.86        240.11       -252.36        .00000      SIG1,SIG2,SIG3=   608.52        87.242       -.21265-008
    S.I.=   608.52        SIGE=  577.84
BOT SX,SY,SXY,SZ=  -185.25       -218.68       -576.34        .00000      SIG1,SIG2,SIG3=   373.62        .80448-008  -777.55
    S.I.=  1161.2         SIGE=  1011.2

EL.=  121  NODES=    48    47    85    85       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   8.148        8.016        .3426-002  PRESS=    .00000        .00000
MX,MY,MXY=     .72772          2.4466        -.49390-001
TOP SX,SY,SXY,SZ=   1020.1        1232.6        86.072        .00000      SIG1,SIG2,SIG3=   1251.6        1001.3       -.88310-009
    S.I.=   1251.6        SIGE=  1147.0
MID SX,SY,SXY,SZ=   663.17        31.595        90.298        .00000      SIG1,SIG2,SIG3=   675.83        18.938       -.25805-008
    S.I.=   875.83        SIGE=  864.56
BOT SX,SY,SXY,SZ=   306.23       -1185.4        114.52        .00000      SIG1,SIG2,SIG3=   315.06        .11733-007  -1178.3
    S.I.=  1493.3         SIGE=  1363.4

EL.=  122  NODES=    47    48    85    85       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   3.690        8.013        .3420-002  PRESS=    .00000        .00000
MX,MY,MXY=     1.8295          2.9591        .59880
TOP SX,SY,SXY,SZ=   1557.7        1467.5        307.60        .00000      SIG1,SIG2,SIG3=   1823.4        1201.8       -.24413-008
    S.I.=   1823.4        SIGE=  1605.5
MID SX,SY,SXY,SZ=   611.28        16.029        13.294        .00000      SIG1,SIG2,SIG3=   611.58        15.732       -.33408-008
    S.I.=   611.58        SIGE=  803.87
BOT SX,SY,SXY,SZ=  -335.15       -1435.4       -280.81        .00000      SIG1,SIG2,SIG3=    .00000      -287.58       -1503.0
    S.I.=  1503.0         SIGE=  1288.7

EL.=  123  NODES=    85    48    86    86       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=   1.230        8.010       -1.217      PRESS=    .00000        .00000
MX,MY,MXY=     1.2206          .34275        .51053-001
TOP SX,SY,SXY,SZ=   919.10        552.25        254.70        .00000      SIG1,SIG2,SIG3=   1052.8        418.50       -.24821-008
    S.I.=   1052.8        SIGE=  918.16
MID SX,SY,SXY,SZ=   320.41        384.13        233.72        .00000      SIG1,SIG2,SIG3=   586.15        118.40       -.18533-008
    S.I.=   586.15        SIGE=  538.45
BOT SX,SY,SXY,SZ=  -278.27        216.01        208.87        .00000      SIG1,SIG2,SIG3=   282.33        .50829-008  -354.59
    S.I.=   846.92        SIGE=  681.11

EL.=  124  NODES=    48    87    86    86       MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=    .0000        6.675       -1.217      PRESS=    .00000        .00000
MX,MY,MXY=     .00000          .00000        .00000
TOP SX,SY,SXY,SZ=   100.29       -6.9097       -64.460        .00000      SIG1,SIG2,SIG3=   130.52        .13174-008  -37.144
    S.I.=   167.66        SIGE=  152.52
MID SX,SY,SXY,SZ=   100.29       -6.9097       -64.460        .00000      SIG1,SIG2,SIG3=   130.52        .13174-008  -37.144
    S.I.=   167.66        SIGE=  152.52
BOT SX,SY,SXY,SZ=   100.29       -6.9097       -64.460        .00000      SIG1,SIG2,SIG3=   130.52        .13174-008  -37.144
    S.I.=   167.66        SIGE=  152.52

EL.=  125  NODES=    48    49    87    87       MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=    .0000        4.005        .3361-002  PRESS=    .00000        .00000
MX,MY,MXY=     .00000          .00000        .00000
TOP SX,SY,SXY,SZ=   56.087        34.473        53.619        .00000      SIG1,SIG2,SIG3=   88.885        .85950-008  -8.4253
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    S.I.=    109.38        SIGE=   105.00
MID SX,SY,SXY,SZ=   56.067        34.473        53.819        .00000        SIG1,SIG2,SIG3=   99.965        .85950-009  -9.4253
    S.I.=    109.38        SIGE=   105.00
BOT SX,SY,SXY,SZ=   56.067        34.473        53.819        .00000        SIG1,SIG2,SIG3=   99.965        .85950-009  -9.4253
    S.I.=    109.38        SIGE=   105.00

EL=  126  NODES=   49    50    67    67       MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=    .0000       1.340       .3334-002  PRESS=    .00000        .00000
MX,MY,MXY=    .00000        .00000        .00000
TOP SX,SY,SXY,SZ=  -67.812       -2.6903        23.026        .00000        SIG1,SIG2,SIG3=   4.8286        .52668-009  -75.131
    S.I.=    78.759        SIGE=   77.549
MID SX,SY,SXY,SZ=  -67.812       -2.6903        23.026        .00000        SIG1,SIG2,SIG3=   4.8286        .52668-009  -75.131
    S.I.=    78.759        SIGE=   77.549
BOT SX,SY,SXY,SZ=  -67.812       -2.6903        23.026        .00000        SIG1,SIG2,SIG3=   4.8286        .52668-009  -75.131
    S.I.=    78.759        SIGE=   77.549

EL=  127  NODES=   50    66    67    67       MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=    .0000       4359-002  -1.217       PRESS=    .00000        .00000
MX,MY,MXY=    .00000        .00000        .00000
TOP SX,SY,SXY,SZ=  -83.785        184.81       -84.445        .00000        SIG1,SIG2,SIG3=   209.15        .24929-008  -108.13
    S.I.=    317.28        SIGE=   279.38
MID SX,SY,SXY,SZ=  -83.785        184.81       -84.445        .00000        SIG1,SIG2,SIG3=   209.15        .24929-008  -108.13
    S.I.=    317.28        SIGE=   279.38
BOT SX,SY,SXY,SZ=  -83.785        184.81       -84.445        .00000        SIG1,SIG2,SIG3=   209.15        .24929-008  -108.13
    S.I.=    317.28        SIGE=   279.38

EL=  128  NODES=   50    51    68    68       MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=    .0000      -4.000      -1.217       PRESS=    .00000        .00000
MX,MY,MXY=    .00000        .00000        .00000
TOP SX,SY,SXY,SZ=  -75.138        128.90       -131.06        .00000        SIG1,SIG2,SIG3=   192.96        .26099-008  -139.20
    S.I.=    332.16        SIGE=   288.92
MID SX,SY,SXY,SZ=  -75.138        128.90       -131.06        .00000        SIG1,SIG2,SIG3=   192.96        .26099-008  -139.20
    S.I.=    332.16        SIGE=   288.92
BOT SX,SY,SXY,SZ=  -75.138        128.90       -131.06        .00000        SIG1,SIG2,SIG3=   192.96        .26099-008  -139.20
    S.I.=    332.16        SIGE=   288.92

EL=  129  NODES=   50    33    51    51       MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=    .0000      -6.667       .3324-002  PRESS=    .00000        .00000
MX,MY,MXY=    .00000        .00000        .00000
TOP SX,SY,SXY,SZ=  -86.515       -1220.2        215.22        .00000        SIG1,SIG2,SIG3=   .37042-014  -47.032       -1259.7
    S.I.=    1259.7        SIGE=   1236.6
MID SX,SY,SXY,SZ=  -86.515       -1220.2        215.22        .00000        SIG1,SIG2,SIG3=   .37042-014  -47.032       -1259.7
    S.I.=    1259.7        SIGE=   1236.6
BOT SX,SY,SXY,SZ=  -86.515       -1220.2        215.22        .00000        SIG1,SIG2,SIG3=   .37042-014  -47.032       -1259.7
    S.I.=    1258.7        SIGE=   1236.6

EL=  130  NODES=   51    52  MAT=  1  PRESSURES[I,Y]=    .00000        .00000       AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      -.5625       SHEAR CENTER=   .8874-018,  -.7500       AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
 PRINCIPLE M OF I:       IYP=   .3155-002   IZP=   .3155-002   THETAP=    .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     9058.1
        2   150.00     8261.9
        3   150.00    -2291.1
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     4590.8
        2   150.00     5465.6
        3   150.00     6968.7
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SARGENT & LUNDY


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EL=  131  NODES=   52    53  MAT=  1  PRESSURES[I,Y]=    .00000        .00000       AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      -.5625       SHEAR CENTER=   .8874-018,  -.7500       AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
 PRINCIPLE M OF I:       IYP=   .3155-002   IZP=   .3155-002   THETAP=    .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     6056.0
        2   150.00     5525.5
        3   150.00     7178.8
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     7067.0
        2   150.00     8126.5
        3   150.00     4866.5

EL=  132  NODES=   53    54  MAT=  1  PRESSURES[I,Y]=    .00000        .00000       AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      -.5625       SHEAR CENTER=   .8874-018,  -.7500       AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
 PRINCIPLE M OF I:       IYP=   .3155-002   IZP=   .3155-002   THETAP=    .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     2799.5
        2   150.00     5953.9
        3   150.00     7266.7
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     8417.1
        2   150.00     4807.4
        3   150.00     3742.2

EL=  133  NODES=   54    55  MAT=  1  PRESSURES[I,Y]=    .00000        .00000       AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      -.5625       SHEAR CENTER=   .8874-018,  -.7500       AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
 PRINCIPLE M OF I:       IYP=   .3155-002   IZP=   .3155-002   THETAP=    .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     1788.7
        2   150.00     5214.8
        3   150.00     5882.6
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     7214.1
        2   150.00     3880.7
        3   150.00     2815.5

EL=  134  NODES=   55    56  MAT=  1  PRESSURES[I,Y]=    .00000        .00000       AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      -.5625       SHEAR CENTER=   .8874-018,  -.7500       AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
 PRINCIPLE M OF I:       IYP=   .3155-002   IZP=   .3155-002   THETAP=    .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00    -1481.5
        2   150.00     4310.2
        3   150.00     5912.0
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     7873.8
        2   150.00     1861.9
        3   150.00     1413.2

EL=  135  NODES=   56    57  MAT=  1  PRESSURES[I,Y]=    .00000        .00000       AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      -.5625       SHEAR CENTER=   .8874-018,  -.7500       AREA=   .5385-001  J=   .2313-004  IW=   .2374-038
 PRINCIPLE M OF I:       IYP=   .3155-002   IZP=   .3155-002   THETAP=    .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
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SARGENT & LUNDY

```
        2   150.00    -5830.1
        3   150.00     2566.4
        4   150.00     5739.9
END J   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00     7132.9
        2   150.00    -605.85
        3   150.00    -884.74


EL=  136  NODES=   57   58  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      -.5625       SHEAR CENTER=   .8674-018,  -.7500       AREA=  .5385-001  JX=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002    IZP=  .3155-002    THETAP=   .0000
END I   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00     863.70
        2   150.00    -700.62
        3   150.00     1161.2
END J   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00    -1378.1
        2   150.00     285.86
        3   150.00     1489.7


EL=  137  NODES=   58   59  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      -.5625       SHEAR CENTER=   .8674-018,  -.7500       AREA=  .5385-001  JX=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002    IZP=  .3155-002    THETAP=   .0000
END I   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00    -611.70
        2   150.00     224.98
        3   150.00     1182.6
END J   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00     895.09
        2   150.00     421.94
        3   150.00    -339.72


EL=  138  NODES=   59   60  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      -.5625       SHEAR CENTER=   .8674-018,  -.7500       AREA=  .5385-001  JX=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002    IZP=  .3155-002    THETAP=   .0000
END I   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00    -857.73
        2   150.00     407.85
        3   150.00     358.50
END J   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00     948.05
        2   150.00     178.80
        3   150.00    -590.37


EL=  139  NODES=   60   61  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      -.5625       SHEAR CENTER=   .8674-018,  -.7500       AREA=  .5385-001  JX=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002    IZP=  .3155-002    THETAP=   .0000
END I   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00     271.88
        2   150.00     231.81
        3   150.00    -782.40
END J   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00     77.848
        2   150.00     172.06
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SARGENT & LUNDY


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        3   150.00    -468.87


EL=  140  NODES=   61   62  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      -.5625       SHEAR CENTER=   .8674-018,  -.7500       AREA=  .5385-001  JX=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002    IZP=  .3155-002    THETAP=   .0000
END I   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00     258.80
        2   150.00     205.54
        3   150.00    -841.89
END J   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00     111.92
        2   150.00     312.20
        3   150.00    -702.35


EL=  141  NODES=   62   63  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      -.5625       SHEAR CENTER=   .8674-018,  -.7500       AREA=  .5385-001  JX=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002    IZP=  .3155-002    THETAP=   .0000
END I   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00     724.13
        2   150.00     313.48
        3   150.00    -876.50
END J   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00    -26.129
        2   150.00     490.81
        3   150.00    -580.88


EL=  142  NODES=   63   64  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      -.5625       SHEAR CENTER=   .8674-018,  -.7500       AREA=  .5385-001  JX=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002    IZP=  .3155-002    THETAP=   .0000
END I   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00     1584.2
        2   150.00     674.85
        3   150.00    -1759.1
END J   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00    -653.14
        2   150.00     722.41
        3   150.00     282.69


EL=  143  NODES=   64   65  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      -.5625       SHEAR CENTER=   .8674-018,  -.7500       AREA=  .5385-001  JX=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002    IZP=  .3155-002    THETAP=   .0000
END I   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00     3013.9
        2   150.00     673.01
        3   150.00    -1170.0
END J   PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX          PT    TEMP       SIGX
        1   150.00    -1882.8
        2   150.00     1145.1
        3   150.00     2782.6


EL=  144  NODES=   65   66  MAT=  1  PRESSURES(Z,Y)=    .00000        .00000      AVE. TEMP=  150.00          3-D THIN-WALL BEAM  24
 CENTROID=  -.1875      -.5625       SHEAR CENTER=   .8674-018,  -.7500       AREA=  .5385-001  JX=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002    IZP=  .3155-002    THETAP=   .0000
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SARGENT & LUNDY

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END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
          1   150.00     3195.7
          2   150.00     734.30
          3   150.00     1826.0
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
          1   150.00    -2085.5
          2   150.00    -862.48
          3   150.00     10151.

EL=  145  NODES=    67    68  MAT=  1  PRESSURES(I,Y)=     .00000          .00000      AVE. TEMP=  150.00          THIN-WALL BEAM  24
 CENTROID= -.1875      ,  -.5625       SHEAR CENTER=    .8674-018,  -.7500      AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
          1   150.00     469.00
          2   150.00    -59.043
          3   150.00    -59.043
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
          1   150.00    -49.103
          2   150.00     113.66
          3   150.00     113.66

EL=  146  NODES=    68    51  MAT=  1  PRESSURES(I,Y)=     .00000          .00000      AVE. TEMP=  150.00          THIN-WALL BEAM  24
 CENTROID= -.1875      ,  -.5625       SHEAR CENTER=    .8674-018,  -.7500      AREA=  .5385-001  J=  .2313-004  IW=  .2374-038
 PRINCIPLE M OF I:       IYP=  .3155-002   IZP=  .3155-002   THETAP=  .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
          1   150.00     116.02
          2   150.00     93.227
          3   150.00     93.227
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
          1   150.00     237.70
          2   150.00     52.866
          3   150.00     52.866

EL=  147  NODES=    51    70    69    69      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
 XC,YC,ZC=   1.230      -7.998      -5.439       PRESS=   .00000          .00000
 MX,MY,MXY=    1.7551          2.5086          2.1420
TOP SX,SY,SXY,SZ=  6142.1       5982.4       -30.599       .00000      SIG1,SIG2,SIG3=  6147.7       5976.7       -[illegible]
    S.I.=   6147.7       SIGE=  6084.0
MID SX,SY,SXY,SZ=  4254.9       3285.0       -2333.7       .00000      SIG1,SIG2,SIG3=  6153.5       1386.3       -[illegible]
    S.I.=   6153.5       SIGE=  5590.8
BOT SX,SY,SXY,SZ=  2367.8       587.61       -4638.9       .00000      SIG1,SIG2,SIG3=  6198.2       [illegible]
    S.I.=   9443.1       SIGE=  8310.4

EL=  148  NODES=    51    52    70    70      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
 XC,YC,ZC=   3.690      -7.994      -4.439       PRESS=   .00000          .00000
 MX,MY,MXY=    1.3423          1.9268         .38498
TOP SX,SY,SXY,SZ=  8954.7       4361.4       -1061.5       .00000      SIG1,SIG2,SIG3=  9188.1       4128.0       -[illegible]
    S.I.=   9188.1       SIGE=  7970.8
MID SX,SY,SXY,SZ=  7511.3       2288.6       -689.04       .00000      SIG1,SIG2,SIG3=  7595.7       2205.3       -[illegible]
    S.I.=   7595.7       SIGE=  6766.1
BOT SX,SY,SXY,SZ=  6064.0       217.62       -276.57       .00000      SIG1,SIG2,SIG3=  6081.0       204.78       -[illegible]
    S.I.=   6081.0       SIGE=  5881.3

EL=  149  NODES=    52    53    70    70      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
 XC,YC,ZC=   6.150      -7.991      -4.439       PRESS=   .00000          .00000
 MX,MY,MXY=    1.3980          2.5896         .38415
```



```
TOP SX,SY,SXY,SZ=  8725.5       5094.8       -351.13       .00000      SIG1,SIG2,SIG3=  8759.2       5061.0       -[illegible]
    S.I.=   8759.2       SIGE=  7616.2
MID SX,SY,SXY,SZ=  7222.4       2202.9       -784.18       .00000      SIG1,SIG2,SIG3=  7336.1       2089.1       -[illegible]
    S.I.=   7336.1       SIGE=  6548.5
BOT SX,SY,SXY,SZ=  5719.2      -688.09       -1177.2       .00000      SIG1,SIG2,SIG3=  5928.6       5[illegible]
    S.I.=   6627.1       SIGE=  6425.2

EL=  150  NODES=    53    71    70    70      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
 XC,YC,ZC=   7.380      -7.989      -5.439       PRESS=   .00000          .00000
 MX,MY,MXY=    2.0754         .18319         .50681
TOP SX,SY,SXY,SZ=  4780.3       5803.2       1823.4       .00000      SIG1,SIG2,SIG3=  7248.7       3435.5       -[illegible]
    S.I.=   7249.7       SIGE=  6281.3
MID SX,SY,SXY,SZ=  2548.7       5706.3       1278.5       .00000      SIG1,SIG2,SIG3=  6158.7       2095.3       -[illegible]
    S.I.=   6159.7       SIGE=  5424.5
BOT SX,SY,SXY,SZ=  317.07       5508.3       735.67       .00000      SIG1,SIG2,SIG3=  5811.5       214.[illegible]       -[illegible]
    S.I.=   5811.5       SIGE=  5507.2

EL=  151  NODES=    53    72    71    71      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
 XC,YC,ZC=   11.07      -7.984      -5.439       PRESS=   .00000          .00000
 MX,MY,MXY=    1.2048          1.5582         .86457
TOP SX,SY,SXY,SZ=  4078.1       6423.2       -575.08       .00000      SIG1,SIG2,SIG3=  6556.8       3942.4       -[illegible]
    S.I.=   6556.8       SIGE=  5717.1
MID SX,SY,SXY,SZ=  2780.5       4737.0       -1613.0       .00000      SIG1,SIG2,SIG3=  5645.3       1872.0       -[illegible]
    S.I.=   5645.3       SIGE=  4880.4
BOT SX,SY,SXY,SZ=  1485.0       3050.8       -2650.2       .00000      SIG1,SIG2,SIG3=  6031.3       .43[illegible]       -[illegible]
    S.I.=   6526.8       SIGE=  5298.5

EL=  152  NODES=    53    54    72    72      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
 XC,YC,ZC=   13.53      -7.983      -4.439       PRESS=   .00000          .00000
 MX,MY,MXY=    .82800          1.4480         .17387-001
TOP SX,SY,SXY,SZ=  7196.1       4589.3       -1804.4       .00000      SIG1,SIG2,SIG3=  8202.7       3582.[illegible]       -[illegible]
    S.I.=   8202.7       SIGE=  7121.9
MID SX,SY,SXY,SZ=  6520.8       3042.3       -1923.1       .00000      SIG1,SIG2,SIG3=  7374.8       2184.[illegible]       -[illegible]
    S.I.=   7374.8       SIGE=  6560.1
BOT SX,SY,SXY,SZ=  5845.8       1485.3       -1941.8       .00000      SIG1,SIG2,SIG3=  6585.0       746.[illegible]       -[illegible]
    S.I.=   6585.0       SIGE=  6245.8

EL=  153  NODES=    54    55    72    72      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
 XC,YC,ZC=   15.98      -7.981      -4.439       PRESS=   .00000          .00000
 MX,MY,MXY=     .57180          1.4581         .19749
TOP SX,SY,SXY,SZ=  5818.3       4245.1       -1805.5       .00000      SIG1,SIG2,SIG3=  7072.4       3082.1       -[illegible]
    S.I.=   7072.4       SIGE=  6140.9
MID SX,SY,SXY,SZ=  5304.5       2677.4       -2017.9       .00000      SIG1,SIG2,SIG3=  6398.7       1583.2       -[illegible]
    S.I.=   6398.7       SIGE=  5772.3
BOT SX,SY,SXY,SZ=  4689.7       1109.6       -2230.2       .00000      SIG1,SIG2,SIG3=  5759.4       38.[illegible]       -[illegible]
    S.I.=   5759.4       SIGE=  5739.5

EL=  154  NODES=    55    73    72    72      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
 XC,YC,ZC=   17.22      -7.979      -5.439       PRESS=   .00000          .00000
 MX,MY,MXY=     .92682         .18676         .10190
TOP SX,SY,SXY,SZ=  3639.6       4236.6       2580.6       .00000      SIG1,SIG2,SIG3=  6626.3       1449.[illegible]       -[illegible]
    S.I.=   6626.3       SIGE=  6033.5
MID SX,SY,SXY,SZ=  2842.9       4033.5       2471.1       .00000      SIG1,SIG2,SIG3=  5980.1       895.[illegible]       -[illegible]
    S.I.=   5980.1       SIGE=  5586.0
BOT SX,SY,SXY,SZ=  1846.3       3830.7       2361.5       .00000      SIG1,SIG2,SIG3=  5400.0       277.[illegible]       -[illegible]
    S.I.=   5400.0       SIGE=  5268.8

EL=  155  NODES=    56    74    73    73      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
```

```
XC,YC,ZC= 20.91      -7.877      -5.439      PRESS=  .00000      .00000
MX,MY,MXY=  .57711      .69587      .31176
TOP SX,SY,SXY,S2=  190.25      5227.6      -5.5840      .00000      SIG1,SIG2,SIG3=  5227.6      190.25      -.13780-007
    S.I.=  5227.6      SIGE=  5135.1
MID SX,SY,SXY,S2= -430.28      4479.6      -340.80      .00000      SIG1,SIG2,SIG3=  4503.1      .38948-007  -453.83
    S.I.=  4957.0      SIGE=  4746.4
BOT SX,SY,SXY,S2= -1050.8      3731.6      -676.02      .00000      SIG1,SIG2,SIG3=  3825.3      .39049-007  -1144.5
    S.I.=  4969.9      SIGE=  4607.9

EL=  156  NODES=  55   56   74   74      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                    QUAD SHELL  63
XC,YC,ZC=  23.37      -7.877      -4.439      PRESS=  .00000      .00000
MX,MY,MXY=  .12313      .53789      .14804
TOP SX,SY,SXY,S2=  3232.8      223.36      -2344.8      .00000      SIG1,SIG2,SIG3=  4513.9      .43779-007  -1057.9
    S.I.=  5571.8      SIGE=  5125.4
MID SX,SY,SXY,S2=  3089.5      -355.01      -2503.8      .00000      SIG1,SIG2,SIG3=  4406.2      .47755-007  -1671.7
    S.I.=  6077.9      SIGE=  5436.3
BOT SX,SY,SXY,S2=  2946.3      -933.38      -2663.0      .00000      SIG1,SIG2,SIG3=  4301.1      .51773-007  -2288.2
    S.I.=  6589.3      SIGE=  5784.6

EL=  157  NODES=  56   57   74   74      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                    QUAD SHELL  63
XC,YC,ZC=  25.63      -7.975      -4.439      PRESS=  .00000      .00000
MX,MY,MXY=  .19495      .34465      .12315
TOP SX,SY,SXY,S2=  902.65      -823.16      -1173.4      .00000      SIG1,SIG2,SIG3=  1187.6      .21178-007  -1507.9
    S.I.=  2695.4      SIGE=  2339.8
MID SX,SY,SXY,S2=  292.23      -1193.7      -1305.8      .00000      SIG1,SIG2,SIG3=  1052.3      .23612-007  -1952.8
    S.I.=  3005.2      SIGE=  2841.2
BOT SX,SY,SXY,S2=  -83.815      -1564.3      -1438.2      .00000      SIG1,SIG2,SIG3=  917.14      .26046-007  -2397.9
    S.I.=  3315.0      SIGE=  2984.8

EL=  158  NODES=  57   75   74   74      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                    QUAD SHELL  63
XC,YC,ZC=  27.06      -7.974      -5.440      PRESS=  .00000      .00000
MX,MY,MXY=  .57098-001      -.33425-002      -.68356-002
TOP SX,SY,SXY,S2=  -7884.3      -75.372      2808.7      .00000      SIG1,SIG2,SIG3=  707.57      .74445-007  -8767.2
    S.I.=  9474.8      SIGE=  9141.6
MID SX,SY,SXY,S2=  -8045.7      -71.778      2616.0      .00000      SIG1,SIG2,SIG3=  708.86      .74935-007  -8827.3
    S.I.=  9537.2      SIGE=  9202.8
BOT SX,SY,SXY,S2=  -8107.1      -68.184      2623.4      .00000      SIG1,SIG2,SIG3=  712.17      .75425-007  -8887.4
    S.I.=  9599.6      SIGE=  9264.1

EL=  159  NODES=  57   76   75   75      MAT=  1  AREA=  10.7      TTOP,TBOT=  150.0  150.0                    QUAD SHELL  63
XC,YC,ZC=  29.52      -5.440      -5.440      PRESS=  .00000      .00000
MX,MY,MXY=  .55457-001      -.62669-001      .44119-001
TOP SX,SY,SXY,S2=  -3721.4      -5701.6      -3471.3      .00000      SIG1,SIG2,SIG3=  -.98906-014  -1101.8      -8321.2
    S.I.=  8321.2      SIGE=  7828.7
MID SX,SY,SXY,S2=  -3781.0      -5634.2      -3518.7      .00000      SIG1,SIG2,SIG3=  -.97737-014  -1098.9      -8346.3
    S.I.=  8346.3      SIGE=  7866.5
BOT SX,SY,SXY,S2=  -3840.6      -5566.7      -3566.2      .00000      SIG1,SIG2,SIG3=  -.48284-014  -1034.6      -8372.8
    S.I.=  8372.8      SIGE=  7904.4

EL=  160  NODES=  57   58   76   76      MAT=  1  AREA=  10.7      TTOP,TBOT=  150.0  150.0                    QUAD SHELL  63
XC,YC,ZC=  29.52      -3.871      -4.439      PRESS=  .00000      .00000
MX,MY,MXY=  .76572-001      .60392-001      .12810-001
TOP SX,SY,SXY,S2=  -731.06      -1822.3      -1060.5      .00000      SIG1,SIG2,SIG3=  -.47418-014  -84.081      -2465.3
    S.I.=  2465.3      SIGE=  2428.3
MID SX,SY,SXY,S2=  -813.39      -1887.2      -1074.2      .00000      SIG1,SIG2,SIG3=  -.57282-014  -149.37      -2551.3
    S.I.=  2551.3      SIGE=  2479.9
BOT SX,SY,SXY,S2=  -895.73      -1952.2      -1088.0      .00000      SIG1,SIG2,SIG3=  .33865-014  -214.48      -2633.4
    S.I.=  2623.4      SIGE=  2533.0
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SARGENT & LUNDY

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EL=  161  NODES=  58   59   76   76      MAT=  1  AREA=  10.7      TTOP,TBOT=  150.0  150.0                    QUAD SHELL  63
XC,YC,ZC=  29.52      -1.303      -4.439      PRESS=  .00000      .00000
MX,MY,MXY=  -.65492-002      .50450-001      -.47388-002
TOP SX,SY,SXY,S2=  -383.59      -1704.8      155.38      .00000      SIG1,SIG2,SIG3=  .00000      -375.43      -1723.1
    S.I.=  1723.1      SIGE=  1569.4
MID SX,SY,SXY,S2=  -386.55      -1759.1      180.48      .00000      SIG1,SIG2,SIG3=  -.30518-014  -368.03      -1777.7
    S.I.=  1777.7      SIGE=  1626.2
BOT SX,SY,SXY,S2=  -379.61      -1813.4      185.57      .00000      SIG1,SIG2,SIG3=  -.23583-014  -360.84      -1832.3
    S.I.=  1832.3      SIGE=  1681.2

EL=  162  NODES=  59   77   76   76      MAT=  1  AREA=  10.7      TTOP,TBOT=  150.0  150.0                    QUAD SHELL  63
XC,YC,ZC=  29.52      .3077-001  -5.439      PRESS=  .00000      .00000
MX,MY,MXY=  -.10762-001      -.84174-002      -.38208-003
TOP SX,SY,SXY,S2=  182.01      -894.12      -211.68      .00000      SIG1,SIG2,SIG3=  222.15      .80851-008  -934.26
    S.I.=  1156.4      SIGE=  1062.5
MID SX,SY,SXY,S2=  193.61      -883.99      -211.29      .00000      SIG1,SIG2,SIG3=  233.55      .80846-008  -923.84
    S.I.=  1157.5      SIGE=  1060.2
BOT SX,SY,SXY,S2=  205.20      -873.86      -210.90      .00000      SIG1,SIG2,SIG3=  244.96      .81031-008  -913.62
    S.I.=  1158.8      SIGE=  1057.6

EL=  163  NODES=  60   78   77   77      MAT=  1  AREA=  10.7      TTOP,TBOT=  150.0  150.0                    QUAD SHELL  63
XC,YC,ZC=  29.52      4.033      -5.439      PRESS=  .00000      .00000
MX,MY,MXY=  -.28103-001      .62198-002      .42804-002
TOP SX,SY,SXY,S2=  163.69      -32.352      383.07      .00000      SIG1,SIG2,SIG3=  441.74      .59087-008  -310.40
    S.I.=  752.14      SIGE=  654.68
MID SX,SY,SXY,S2=  191.76      -39.039      358.46      .00000      SIG1,SIG2,SIG3=  452.94      .59177-008  -300.22
    S.I.=  753.15      SIGE=  656.71
BOT SX,SY,SXY,S2=  219.82      -45.727      333.85      .00000      SIG1,SIG2,SIG3=  464.98      .59380-008  -290.89
    S.I.=  755.88      SIGE=  660.37

EL=  164  NODES=  59   80   78   78      MAT=  1  AREA=  10.7      TTOP,TBOT=  150.0  150.0                    QUAD SHELL  63
XC,YC,ZC=  29.52      5.701      -4.439      PRESS=  .00000      .00000
MX,MY,MXY=  -.27089-001      .12086-001      -.11068-001
TOP SX,SY,SXY,S2=  -101.64      -378.23      234.85      .00000      SIG1,SIG2,SIG3=  32.381      .42858-008  -513.23
    S.I.=  545.59      SIGE=  530.15
MID SX,SY,SXY,S2=  -72.516      -382.23      246.75      .00000      SIG1,SIG2,SIG3=  61.634      .48201-008  -526.38
    S.I.=  588.02      SIGE=  559.75
BOT SX,SY,SXY,S2=  -43.380      -405.24      258.65      .00000      SIG1,SIG2,SIG3=  91.337      .49602-008  -539.96
    S.I.=  631.30      SIGE=  590.95

EL=  165  NODES=  60   61   78   78      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                    QUAD SHELL  63
XC,YC,ZC=  28.25      8.034      -4.439      PRESS=  .00000      .00000
MX,MY,MXY=  -.37614-001      -.17205-001      -.28418-002
TOP SX,SY,SXY,S2=  29.568      -367.97      137.38      .00000      SIG1,SIG2,SIG3=  72.425      .37970-008  -410.83
    S.I.=  483.26      SIGE=  451.42
MID SX,SY,SXY,S2=  70.012      -349.47      140.44      .00000      SIG1,SIG2,SIG3=  112.89      .39666-008  -392.15
    S.I.=  504.84      SIGE=  458.98
BOT SX,SY,SXY,S2=  110.46      -330.97      143.50      .00000      SIG1,SIG2,SIG3=  153.00      .41370-008  -373.53
    S.I.=  526.52      SIGE=  469.12

EL=  166  NODES=  61   79   78   78      MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                    QUAD SHELL  63
XC,YC,ZC=  27.06      8.034      -5.439      PRESS=  .00000      .00000
MX,MY,MXY=  .45823-001      -.18670-001      -.16155-001
TOP SX,SY,SXY,S2=  37.197      -120.49      -150.96      .00000      SIG1,SIG2,SIG3=  128.66      .26763-008  -211.86
    S.I.=  340.82      SIGE=  297.81
MID SX,SY,SXY,S2=  -12.074      -100.41      -133.59      .00000      SIG1,SIG2,SIG3=  84.458      .22110-008  -186.85
    S.I.=  281.40      SIGE=  250.11
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SARGENT & LUNDY

3308

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BOT SX,SY,SXY,S2= -81.346      -80.338      -116.22       00000      SIG1,SIG2,SIG3= 45.784      .18324-008 -187.45
    S.I.=   233.31        SIGE=  214.03

EL= 187  NODES=  61   80   79   78      MAT= 1  AREA=  9.83      TTOP,TBOT= 150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  23.37       8.032       -5.439      PRESS=  00000      00000
MX,MY,MXY=    .33834-001    -.16788-001     .21143-001
TOP SX,SY,SXY,S2=  231.85      -93.600       31.219       00000      SIG1,SIG2,SIG3=  234.92      .28045-008 -85.567
    S.I.=   331.45        SIGE=  295.29
MID SX,SY,SXY,S2=  195.69      -73.419       8.4850       00000      SIG1,SIG2,SIG3=  196.16      .21202-008 -73.686
    S.I.=   269.84        SIGE=  241.58
BOT SX,SY,SXY,S2=  159.83      -53.237      -14.248       00000      SIG1,SIG2,SIG3=  160.74      .16850-008 -54.188
    S.I.=   214.56        SIGE=  193.84

EL= 188  NODES=  81   62   80   60      MAT= 1  AREA=  9.83      TTOP,TBOT= 150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  20.91       8.031       -4.439      PRESS=  00000      00000
MX,MY,MXY=   -.28746-001     .50474-001     .28372-001
TOP SX,SY,SXY,S2=  193.26      185.02       85.068       00000      SIG1,SIG2,SIG3=  290.26      100.04      -.74730-008
    S.I.=   290.26        SIGE=  255.39
MID SX,SY,SXY,S2=  224.25      133.00       63.465       00000      SIG1,SIG2,SIG3=  256.81      100.45      -.61430-008
    S.I.=   256.81        SIGE=  224.16
BOT SX,SY,SXY,S2=  256.25      87.974       31.903       00000      SIG1,SIG2,SIG3=  261.51      82.715      -.78087-009
    S.I.=   261.51        SIGE=  238.47

EL= 189  NODES=  62   63   60   40      MAT= 1  AREA=  9.83      TTOP,TBOT= 150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  18.45       8.029       -4.439      PRESS=  00000      00000
MX,MY,MXY=   -.47161-001     .48668-001     .24158-001
TOP SX,SY,SXY,S2=  354.48      237.45       120.53       00000      SIG1,SIG2,SIG3=  429.95      161.99      -.10527-008
    S.I.=   429.95        SIGE=  376.10
MID SX,SY,SXY,S2=  405.16      187.27       82.757       00000      SIG1,SIG2,SIG3=  433.68      158.78      -.10800-008
    S.I.=   433.65        SIGE=  380.04
BOT SX,SY,SXY,S2=  455.87      137.09       47.068       00000      SIG1,SIG2,SIG3=  462.67      130.29      -.13058-008
    S.I.=   462.67        SIGE=  413.23

EL= 170  NODES=  63   61   60   40      MAT= 1  AREA=  9.83      TTOP,TBOT= 150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  17.22       8.029       -5.439      PRESS=  00000      00000
MX,MY,MXY=    .57187-001     .56510-001     .10162
TOP SX,SY,SXY,S2=  202.07      353.54      -142.90       00000      SIG1,SIG2,SIG3=  439.53      116.08      -.12707-008
    S.I.=   439.53        SIGE=  394.52
MID SX,SY,SXY,S2=  140.60      293.86      -33.632       00000      SIG1,SIG2,SIG3=  300.91      133.54      -.85753-009
    S.I.=   300.91        SIGE=  261.15
BOT SX,SY,SXY,S2=  79.127      234.17       75.832       00000      SIG1,SIG2,SIG3=  264.85      48.345      -.85098-009
    S.I.=   264.85        SIGE=  244.38

EL= 171  NODES=  63   62   41   61      MAT= 1  AREA=  9.83      TTOP,TBOT= 150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  13.53       8.027       -5.439      PRESS=  00000      00000
MX,MY,MXY=    .64012-001    -.44840-001     .71238-001
TOP SX,SY,SXY,S2=  472.00      212.27      -195.31       00000      SIG1,SIG2,SIG3=  580.02      104.25      -.18881-008
    S.I.=   580.02        SIGE=  535.56
MID SX,SY,SXY,S2=  381.67      260.27      -122.71       00000      SIG1,SIG2,SIG3=  457.87      184.07      -.10757-008
    S.I.=   457.87        SIGE=  389.06
BOT SX,SY,SXY,S2=  291.34      308.27       -46.110      00000      SIG1,SIG2,SIG3=  348.88      252.93      -.36835-009
    S.I.=   348.88        SIGE=  310.91

EL= 172  NODES=  63   64   62   62      MAT= 1  AREA=  9.83      TTOP,TBOT= 150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  11.07       8.028       -4.439      PRESS=  00000      00000
MX,MY,MXY=   -.23705      .53560-002     .22327
TOP SX,SY,SXY,S2=  295.56      122.36       250.06       00000      SIG1,SIG3,SIG3=  473.81      .41526-008 -85.987
    S.I.=   529.28        SIGE=  503.76
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MID SX,SY,SXY,S2=  550.51      118.80       5.9902       00000      SIG1,SIG2,SIG3=  550.74      118.57      -.17085-008
    S.I.=   550.74        SIGE=  503.76
BOT SX,SY,SXY,S2=  805.44      110.84      -230.08       00000      SIG1,SIG2,SIG3=  874.74      41.538      -.32733-008
    S.I.=   874.74        SIGE=  854.73

EL= 173  NODES=  64   65   62   62      MAT= 1  AREA=  9.83      TTOP,TBOT= 150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  8.509       8.022       -4.439      PRESS=  00000      00000
MX,MY,MXY=   -.20884      .88840-001     .44082-001
TOP SX,SY,SXY,S2=  380.04      228.71       51.552       00000      SIG1,SIG2,SIG3=  395.83      212.82      -.71837-009
    S.I.=   395.83        SIGE=  343.21
MID SX,SY,SXY,S2=  805.45      133.08       4.1822       00000      SIG1,SIG2,SIG3=  805.49      133.04      -.18580-008
    S.I.=   805.49        SIGE=  551.15
BOT SX,SY,SXY,S2=  830.87      37.447      -43.347       00000      SIG1,SIG2,SIG3=  833.22      35.096      -.31385-008
    S.I.=   833.22        SIGE=  816.24

EL= 174  NODES=  65   63   62   62      MAT= 1  AREA=  9.83      TTOP,TBOT= 150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  7.379       8.023       -5.439      PRESS=  00000      00000
MX,MY,MXY=   -.29915      .27452     -.31127
TOP SX,SY,SXY,S2= -243.80      849.91      -310.17       00000      SIG1,SIG2,SIG3=  931.74      .96801-008 -325.73
    S.I.=  1257.5         SIGE= 1130.4
MID SX,SY,SXY,S2=  77.785      564.73       24.526       00000      SIG1,SIG2,SIG3=  565.89      78.507      -.14837-008
    S.I.=   565.89        SIGE=  521.96
BOT SX,SY,SXY,S2=  388.43      259.56       358.22       00000      SIG1,SIG2,SIG3=  745.46      .57508-008 -38.477
    S.I.=   731.94        SIGE=  714.40

EL= 175  NODES=  65   64   63   63      MAT= 1  AREA=  9.83      TTOP,TBOT= 150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  3.690       8.023       -5.439      PRESS=  00000      00000
MX,MY,MXY=   -.57317-001    -.78168-001     .44805
TOP SX,SY,SXY,S2=  314.05      238.41      -734.33       00000      SIG1,SIG2,SIG3= 1006.8       .11559-007 -484.35
    S.I.=  1471.2         SIGE= 1302.8
MID SX,SY,SXY,S2=  375.86      310.30      -261.49       00000      SIG1,SIG2,SIG3=  596.80      48.383      -.19837-008
    S.I.=   596.80        SIGE=  567.31
BOT SX,SY,SXY,S2=  437.31      392.20       231.34       00000      SIG1,SIG2,SIG3=  847.20      182.32      -.16283-008
    S.I.=   847.20        SIGE=  674.02

EL= 176  NODES=  65   66   64   64      MAT= 1  AREA=  9.83      TTOP,TBOT= 150.0  150.0                          QUAD SHELL  83
XC,YC,ZC=  1.230       8.018       -4.439      PRESS=  00000      00000
MX,MY,MXY=   -.28347      .31048      .32897
TOP SX,SY,SXY,S2=  263.22      426.48       341.08       00000      SIG1,SIG2,SIG3=  895.16      .55126-008 -8.4814
    S.I.=   701.82        SIGE=  656.42
MID SX,SY,SXY,S2=  577.77      92.237      -12.695       00000      SIG1,SIG2,SIG3=  578.10      91.895      -.19101-008
    S.I.=   578.10        SIGE=  536.07
BOT SX,SY,SXY,S2=  893.32     -242.03      -386.39       00000      SIG1,SIG2,SIG3= 1001.3       .10617-007 -350.00
    S.I.=  1361.3         SIGE= 1214.7


EL= 177  NODES=  69   70  MAT= 1  PRESSURES(I,J)=  00000       00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.4844        1.453        SHEAR CENTER=  0000        1.837      AREA=  4844       J=  2823-002  IW=  5700-038
 PRINCIPLE M OF I       TYP=  .1894       IZP=  .1894       THETAP=  0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
         1   150.00     5867.9
         2   150.00     4753.3
         3   150.00     5358.1
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
         1   150.00     5807.4
         2   150.00     5218.1
         3   150.00     5885.0
FORCES ON MEMBER AT NODE   69  -2831.88      -22.3884      -14.3584      -24.8830      104.868      -188.488
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                    70   2631.68        22.3654        14.3594        24.5630       -38.3579        45.8212

EL= 178  NODES= 70  71  MAT= 1  PRESSURES(Z,Y)=  .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.4844      1.453      SHEAR CENTER=  .0000      1.937      AREA=  .4844      J=  .2523-002  IW=  .5700-036
 PRINCIPLE M OF I:     IYP=  .1894      IZP=  .1894      THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     2801.3
        2   150.00     5380.6
        3   150.00     8548.2
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     7082.1
        2   150.00     4605.5
        3   150.00     3817.7
FORCES ON MEMBER AT NODE   70  -2435.28       -38.8793        100.525       -18.3702       -252.141       -114.146
                           71   2435.28        38.8793       -100.525        18.3702       -242.107       -77.0111

EL= 179  NODES= 71  72  MAT= 1  PRESSURES(Z,Y)=  .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.4844      1.453      SHEAR CENTER=  .0000      1.937      AREA=  .4844      J=  .2523-002  IW=  .5700-036
 PRINCIPLE M OF I:     IYP=  .1894      IZP=  .1894      THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     1508.5
        2   150.00     4605.6
        3   150.00     5789.6
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     7342.5
        2   150.00     3626.8
        3   150.00     2323.3
FORCES ON MEMBER AT NODE   71  -2048.83       -45.8794        139.436       -10.6887       -322.317       -97.1658
                           72   2048.83        45.8794       -139.436        10.6887       -363.245       -127.424

EL= 180  NODES= 72  73  MAT= 1  PRESSURES(Z,Y)=  .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.4844      1.453      SHEAR CENTER=  .0000      1.937      AREA=  .4844      J=  .2523-002  IW=  .5700-036
 PRINCIPLE M OF I:     IYP=  .1894      IZP=  .1894      THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     -714.90
        2   150.00     3888.9
        3   150.00     6242.8
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     7076.8
        2   150.00     2149.8
        3   150.00      925.26
FORCES ON MEMBER AT NODE   72  -1490.13       -51.1868        189.501       -7.90387       -450.054       -132.365
                           73   1490.13        51.1868       -189.501        7.90387       -681.659       -119.314

EL= 181  NODES= 73  74  MAT= 1  PRESSURES(Z,Y)=  .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.4844      1.453      SHEAR CENTER=  .0000      1.937      AREA=  .4844      J=  .2523-002  IW=  .5700-036
 PPINCIPLE M OF I:     IYP=  .1894      IZP=  .1894      THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     -1345.4
        2   150.00     2401.0
        3   150.00     4033.6
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     3748.2
        2   150.00     1575.0
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        3   150.00      581.07
FORCES ON MEMBER AT NODE   73   -907.023       -52.0239        117.721       -4.17093       -366.246       -159.800
                           74    907.023        52.0239       -117.721        4.17093       -212.651       -96.1843

EL= 182  NODES= 74  75  MAT= 1  PRESSURES(Z,Y)=  .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.4844      1.453      SHEAR CENTER=  .0000      1.937      AREA=  .4844      J=  .2523-002  IW=  .5700-036
 PRINCIPLE M OF I:     IYP=  .1894      IZP=  .1894      THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     -2184.2
        2   150.00     1754.6
        3   150.00     2770.5
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     6868.5
        2   150.00     -391.98
        3   150.00     -1988.1
FORCES ON MEMBER AT NODE   74   -495.930       -51.8545        222.678       -1.75562       -385.054       -88.3089
                           75    495.930        51.8545       -222.678        1.75562       -709.770       -158.134

EL= 183  NODES= 75  76  MAT= 1  PRESSURES(Z,Y)=  .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.4844      1.453      SHEAR CENTER=  .0000      1.937      AREA=  .4844      J=  .2523-002  IW=  .5700-036
 PRINCIPLE M OF I:     IYP=  .1894      IZP=  .1894      THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     1812.9
        2   150.00     -40.368
        3   150.00     -139.76
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     1053.7
        2   150.00     125.04
        3   150.00     286.64
FORCES ON MEMBER AT NODE   75   -192.635        4.82034       -16.9480       -.521648       181.175        8.71606
                           76    192.635       -4.82034        16.9480        .521648       -80.7853        16.9824

EL= 184  NODES= 76  77  MAT= 1  PRESSURES(Z,Y)=  .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.4844      1.453      SHEAR CENTER=  .0000      1.937      AREA=  .4844      J=  .2523-002  IW=  .5700-036
 PRINCIPLE M OF I:     IYP=  .1894      IZP=  .1894      THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     -1979.7
        2   150.00     211.74
        3   150.00     1415.3
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     85.554
        2   150.00     -676.78
        3   150.00     817.05
FORCES ON MEMBER AT NODE   76    17.0690        5.32145        52.4918       -.130297       -214.231       -117.853
                           77   -17.0690       -5.32145       -52.4918        .130297       -85.7262        148.034

EL= 185  NODES= 77  78  MAT= 1  PRESSURES(Z,Y)=  .00000          .00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
 CENTROID= -.4844      1.453      SHEAR CENTER=  .0000      1.937      AREA=  .4844      J=  .2523-002  IW=  .5700-036
 PRINCIPLE M OF I:     IYP=  .1894      IZP=  .1894      THETAP=  .0000
END I  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
        1   150.00     -86.887
        2   150.00     -871.36
        3   150.00     985.23
END J  PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX          PT    TEMP        SIGX
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                3   150.00    -815.12
                1   150.00    -497.09
                2   150.00     1363.1
FORCES ON MEMBER AT NODE    77    29.8105        5.56541        -11.0105       -.899511-001    47.1849        -152.189
                            78   -29.8105       -5.56541        11.0105        .899511-001     11.5377        181.851


EL=  186  NODES=    78    79  MAT=   1  PRESSURES(Z,Y)=     .00000          .00000       AVE. TEMP=  150.00          3-D THIN-WALL BEAM   24
 CENTROID=  -.4844       1.453        SHEAR CENTER=     .0000       1.937        AREA=   .4844        J=   .2523-002  IW=   .5700-036
 PRINCIPLE M OF I:        IYP=    .1894        IZP=    .1894        THETAP=    .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      163.79
        2   150.00     -471.15
        3   150.00      1068.7
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00     -357.37
        2   150.00     -30.484
        3   150.00      709.53
FORCES ON MEMBER AT NODE    78   -35.2615       -15.9232       -18.1238        .874759        82.0700        -150.631
                            79    35.2615        15.9232        18.1238       -.874759        31.9552        72.3418


EL=  187  NODES=    79    80  MAT=   1  PRESSURES(Z,Y)=     .00000          .00000       AVE. TEMP=  150.00          3-D THIN-WALL BEAM   24
 CENTROID=  -.4844       1.453        SHEAR CENTER=     .0000       1.937        AREA=   .4844        J=   .2523-002  IW=   .5700-036
 PRINCIPLE M OF I:        IYP=    .1894        IZP=    .1894        THETAP=    .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00     -39.284
        2   150.00     -40.404
        3   150.00      593.42
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      174.83
        2   150.00      157.86
        3   150.00     -16.999
FORCES ON MEMBER AT NODE    79   -57.3197       -16.0791        .310636        1.00984        .111523        -61.9518
                            80    57.3197        16.0791       -.310636       -1.00984       -1.83882        -17.0940


EL=  188  NODES=    80    81  MAT=   1  PRESSURES(Z,Y)=     .00000          .00000       AVE. TEMP=  150.00          3-D THIN-WALL BEAM   24
 CENTROID=  -.4844       1.453        SHEAR CENTER=     .0000       1.937        AREA=   .4844        J=   .2523-002  IW=   .5700-036
 PRINCIPLE M OF I:        IYP=    .1894        IZP=    .1894        THETAP=    .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      102.88
        2   150.00      158.19
        3   150.00      13.996
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      400.48
        2   150.00      325.77
        3   150.00     -618.75
FORCES ON MEMBER AT NODE    80   -52.4649       -15.9126        2.58522        .919571       -5.40730        14.0983
                            81    52.4649        15.9126       -2.58522       -.919571       -7.30338        -82.3344


EL=  189  NODES=    81    82  MAT=   1  PRESSURES(Z,Y)=     .00000          .00000       AVE. TEMP=  150.00          3-D THIN-WALL BEAM   24
 CENTROID=  -.4844       1.453        SHEAR CENTER=     .0000       1.937        AREA=   .4844        J=   .2523-002  IW=   .5700-036
 PRINCIPLE M OF I:        IYP=    .1894        IZP=    .1894        THETAP=    .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      235.54
        2   150.00      328.47
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        3   150.00    -554.86
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      558.30
        2   150.00      472.81
        3   150.00     -1163.9
FORCES ON MEMBER AT NODE    81   -41.1231       -14.9554        3.57126        1.23325       -8.18176        68.4517
                            82    41.1231        14.9554       -3.57126       -1.23325       -8.37691        -159.983


EL=  190  NODES=    82    83  MAT=   1  PRESSURES(Z,Y)=     .00000          .00000       AVE. TEMP=  150.00          3-D THIN-WALL BEAM   24
 CENTROID=  -.4844       1.453        SHEAR CENTER=     .0000       1.937        AREA=   .4844        J=   .2523-002  IW=   .5700-036
 PRINCIPLE M OF I:        IYP=    .1894        IZP=    .1894        THETAP=    .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      377.03
        2   150.00      477.34
        3   150.00     -1095.8
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      885.78
        2   150.00      570.22
        3   150.00     -1590.1
FORCES ON MEMBER AT NODE    82   -28.5920       -11.6788        4.29222        .305178       -9.80848        153.758
                            83    28.5920        11.6788       -4.29222       -.305178       -11.2970        -211.169


EL=  191  NODES=    83    84  MAT=   1  PRESSURES(Z,Y)=     .00000          .00000       AVE. TEMP=  150.00          3-D THIN-WALL BEAM   24
 CENTROID=  -.4844       1.453        SHEAR CENTER=     .0000       1.937        AREA=   .4844        J=   .2523-002  IW=   .5700-036
 PRINCIPLE M OF I:        IYP=    .1894        IZP=    .1894        THETAP=    .0000
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      480.79
        2   150.00      575.60
        3   150.00     -1512.9
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      858.88
        2   150.00      814.77
        3   150.00     -1767.3
FORCES ON MEMBER AT NODE    83   -14.4206       -5.83739        2.72273       -.841128-002    9.28842        204.170
                            84    14.4206        5.83739       -2.72273        .841128-002    4.11831        -232.870

      DISPLACEMENT INCREMENT  =   .37014-003 AT NODE     72      CRITERION =   .10000-002
            PLASTICITY RATIO  =   .48755-002 AT ELEM      6      CRITERION =   .10000-001
*** LOAD STEP    1   ITER    20  COMPLETED.  TIME=    .000000       TIME INC=    .000000      NEW TRIANG MATRIX  CUM. ITER =     7
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3308

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8855

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.0539 1/18/86 CP= 658.974

LOAD STEP NUMBER= 2

*** LOAD OPTIONS SUMMARY ***

TIME = .00000 (TIME AT END OF LOAD STEP)
NITTER= 20 (NUMBER OF ITERATIONS)
TUNIF = 150.0000 (UNIFORM TEMPERATURE) (TREF= 70.0000)
KTEMP = 1 (USE SPECIFIED NODAL OR ELEMENT TEMPERATURES)
KBC = 1 (LOADS STEPPED TO FINAL VALUES FOR ALL ITERATIONS)
PLCR = .0100 (PLASTICITY CONVERGENCE CRITERION)
CRCR = .1000 (CREEP OPTIMIZATION CRITERION)
LDCR = .001000 (LARGE DEFLECTION CONVERGENCE CRITERION)

NPRINT= 20 (OVERALL PRINT FREQUENCY)
NPOST = 1 (OVERALL POST FREQUENCY)

DISPLACEMENT PRINT FREQUENCIES

FREQ	NSTRT	NSTOP	NINC
1	1	84	1

ELEMENT PRINT AND POST FREQUENCIES

TYPE	STIFF NO	STRESS PRINT	FORCE PRINT	STRESS POST	STRESS LEVEL	FORCE POST
1	24	20	20	1	3	1
2	48	20	20	1	3	1
3	24	20	20	1	3	1
4	63	20	20	1	3	1

***** LOAD SUMMARY - 63 DISPLACEMENTS 0 FORCES 0 PRESSURES *****

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SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8855

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.0864 1/18/86 CP= 975.329

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 2 ITERATION= 1 CUM ITER.= 8

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	.000000	.000000	.827006-002	-.188845-001	.000000	.000000
2	.482294-002	-.487617-002	.767345-002	-.155184-001	.422888-005	.702943-003
3	.858542-002	-.172069-001	.832545-002	-.635314-002	-.911317-004	.158239-002
4	.148373-001	-.134890-001	.786430-002	-.310931-002	-.165167-003	.254436-002
5	.203244-001	-.333760-002	.844501-002	-.958055-003	-.147722-003	.334551-002
6	.269539-001	.137291-001	.722228-002	-.859317-003	-.129862-003	.365406-002
7	.336457-001	.278598-001	.578736-002	-.887895-003	-.137418-003	.278777-002
8	.241019-001	.342312-001	.681025-002	.404286-003	-.762680-003	.140458-002
9	.185877-001	.390617-001	.717235-002	.105028-003	-.284775-003	.774543-003
10	.170831-001	.424741-001	.684627-002	.804443-004	-.109710-004	.517967-003
11	.141422-001	.405527-001	.700239-002	-.276332-003	-.772849-005	.523501-003
12	.112586-001	.365565-001	.700204-002	-.588539-003	.185185-004	.517409-003
13	.841845-002	.387264-001	.700781-002	-.920308-003	.209770-004	.488631-003
14	.560042-002	.349316-001	.683245-002	-.107307-002	.189746-004	.363715-003
15	.279202-002	.341006-001	.691785-002	-.137975-002	.159205-004	.202022-003
16	.000000	.322837-001	.685545-002	-.708716-003	.000000	.000000
17	.000000	.000000	.523580-002	.261500-002	.000000	.000000
18	.458428-002	-.140273-001	.564902-002	.125716-002	-.598160-004	-.380756-002
19	.820902-002	-.178195-001	.526828-002	.318346-002	-.262211-003	-.118976-002
20	.138754-001	-.127626-001	.583997-002	.311266-002	-.902432-004	.343331-002
21	.189481-001	.770973-003	.560731-002	.327384-002	.118267-003	.231017-002
22	.242377-001	.157563-001	.522868-002	.228191-002	.780897-003	.418867-002
23	.291580-001	.291624-001	.310315-002	.995637-003	.245038-002	.155898-002
24	.234081-001	.345438-001	.523989-002	.386341-003	.953695-003	.804071-003
25	.194885-001	.386827-001	.585230-002	.502485-004	.253886-003	.413338-005
26	.167750-001	.418984-001	.566848-002	-.253818-003	.165714-003	.587991-003
27	.139810-001	.387603-001	.581830-002	-.417166-003	.298454-004	.332656-003
28	.111726-001	.372465-001	.585518-002	-.627787-003	.530087-005	.677887-003
29	.838978-002	.338179-001	.580682-002	-.158084-002	.539343-005	.724215-003
30	.557188-003	.302036-001	.579213-002	-.294268-002	.228008-004	.816424-003
31	.278007-002	.248543-001	.575252-002	-.518500-002	.470858-004	.146178-002
32	.000000	.204110-001	.574013-002	-.788049-002	.000000	.000000
33	.000000	.000000	.444091-003	-.278155-004	.000000	.000000
34	.426586-002	-.616146-002	.461578-002	.384403-002	.178475-003	-.833888-003
35	.877748-002	-.822161-002	.444539-002	.495137-002	.109405-004	.404813-003
36	.131885-001	-.311281-002	.497800-002	.495426-002	.108290-005	.170218-002
37	.175475-001	.789248-002	.487748-002	.360811-002	.181750-003	.241409-002
38	.217036-001	.211736-001	.450341-002	.211998-002	.802202-003	.284757-002
39	.254162-001	.313975-001	.228176-002	.128460-002	.178861-002	.140886-002
40	.208720-001	.350739-001	.442526-002	.968352-004	.870247-003	.371589-003
41	.187891-001	.384589-001	.476283-002	-.177835-003	.316739-003	.404219-003
42	.165308-001	.416300-001	.485409-002	-.254467-003	.745875-004	.472090-003
43	.138330-001	.390984-001	.474945-002	-.180216-003	.289316-004	.535091-003
44	.110883-001	.360169-001	.478255-002	-.498189-003	.387488-005	.821434-003
45	.831799-002	.310673-001	.474925-002	-.837860-003	.135238-004	.126919-002
46	.554236-002	.244469-001	.473895-002	-.184165-002	.814045-004	.167486-002
47	.276785-002	.155268-001	.489805-002	-.250928-002	.176780-003	.175494-002
48	.000000	.888500-002	.470170-002	-.100529-003	.000000	.000000

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3308

49	.000000	578781-002	482652-002	-.340626-005	.000000	.000000
50	.000000	293128-002	456956-002	-.353128-004	.000000	.000000
51	.000000	.000000	206897-002	-.371352-004	.000000	.000000

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SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-6655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.0884 1/18/86 CP= 975.501

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 2 ITERATION= 1 CUM. ITER = 8

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	.408628-002	.743140-003	.215532-002	.374006-002	-.891788-004	.122075-002
53	.611831-002	.138571-001	.229133-002	.407297-002	-.138362-003	.124807-002
54	.119510-001	.224757-001	.233853-002	.407487-002	-.188470-003	.124142-002
55	.155491-001	.247815-001	.243414-002	.298699-002	-.157721-003	.122820-002
56	.188716-001	.285398-001	.193875-002	.141136-002	-.185[illegible]3-003	.117858-002
57	.218541-001	.329378-001	.763413-003	.126156-003	-.10[illegible]53-003	.753506-003
58	.188572-001	.357482-001	.186503-002	.120370-003	.148249-003	.260404-003
59	.178947-001	.386488-001	.223006-002	.848809-004	.159459-004	.226462-003
60	.163402-001	.415265-001	.204899-002	-.133783-004	.153501-004	.416024-003
61	.138602-001	.388908-001	.215468-002	.442783-004	.628878-005	.655132-003
62	.108786-001	.350266-001	.218202-002	.389708-004	-.151511-004	.921888-003
63	.826350-002	.289906-001	.215783-002	.508842-003	-.301782-004	.125784-002
64	.551508-002	.229738-001	.213266-002	.105010-002	-.820421-004	.165844-002
65	.275702-002	.149592-001	.210884-002	.193271-002	-.178508-003	.169628-002
66	.000000	.872148-002	.208830-002	.757088-003	.000000	.000000
67	.000000	.582721-002	.198436-002	.502208-004	.000000	.000000
68	.000000	.292697-002	.197451-002	-.588803-005	.000000	.000000
69	.000000	.000000	.000000	-.148670-001	.000000	.000000
70	.385051-002	.109320-001	.000000	-.942308-002	-.718381-004	.117140-003
71	.753637-002	.195484-001	.000000	-.534818-002	-.603722-004	.138883-003
72	.111181-001	.248922-001	.000000	-.297541-002	-.815478-004	.131914-003
73	.144362-001	.289056-001	.000000	-.128111-002	-.979945-004	.128479-003
74	.173351-001	.313789-001	.000000	-.438757-003	-.113078-004	.163840-003
75	.204775-001	.328843-001	.000000	-.917215-004	-.193537-003	.130989-003
76	.195429-001	.360930-001	.000000	.735585-004	-.885447-004	.133815-003
77	.183602-001	.387442-001	.000000	-.168415-004	-.388163-004	.293848-003
78	.182239-001	.415311-001	.000000	.501714-005	-.172581-004	.487313-003
79	.138011-001	.391139-001	.000000	.187836-003	-.178350-004	.622800-003
80	.109438-001	.363822-001	.000000	.420557-003	.830649-004	.648494-003
81	.824732-002	.336962-001	.000000	.623260-003	.205316-005	.586773-003
82	.551586-002	.316305-001	.000000	.893867-003	.178266-005	.450430-003
83	.276399-002	.300184-001	.000000	.856734-003	.274415-005	.245504-003
84	.000000	.293804-001	.000000	.863068-003	.000000	.000000

MAXIMUMS

NODE	7	10	5	1	23	22
VALUE	.338457-001	.424741-001	.844501-002	-.188645-001	.245036-002	.418687-002

DISPLACEMENT INCREMENT = 87573-002 AT NODE 10 CRITERION = .10000-002
PLASTICITY RATIO = 23714 AT ELEM 5 CRITERION = .10000-001
*** LOAD STEP 2 ITER 1 COMPLETED. TIME= .000000 TIME INC= .000000 NEW TRIANG MATRIX CUM. ITER = 8

3108

SARGENT & LUNDY

100

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8855

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14 1222 1/18/86 CP= 1164.783

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 2 ITERATION= 2 CUM. ITER.= 9

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	.000000	.000000	.831533-002	-.188559-001	.000000	.000000
2	.478407-002	-.515845-002	.764949-002	-.152213-001	-.164801-004	.730936-003
3	.959658-002	-.180171-001	.837677-002	-.573142-002	-.116828-003	.161025-002
4	.145732-001	-.343498-001	.791762-002	-.249322-002	-.211332-003	.260504-002
5	.203244-001	-.365272-002	.846053-002	-.503055-003	-.180554-003	.337702-002
6	.268388-001	.137767-001	.722887-002	-.778567-003	-.270850-003	.384886-002
7	.333195-001	.277782-001	.568625-002	-.703501-003	-.180436-002	.378886-002
8	.238749-001	.341449-001	.682759-002	.359242-003	-.822472-003	.141548-002
9	.194811-001	.389725-001	.717438-002	.104152-003	-.328914-003	.772121-003
10	.170820-001	.423840-001	.684087-002	.798628-004	-.940727-005	.513381-003
11	.141413-001	.404730-001	.700076-002	-.272242-003	-.719055-005	.521581-003
12	.112557-001	.384648-001	.700177-002	-.578121-003	-.184278-004	.516713-003
13	.841751-002	.366317-001	.700778-002	-.906430-003	-.211008-004	.468391-003
14	.558853-002	.348207-001	.693182-002	-.105051-002	-.201984-004	.383573-003
15	.278136-002	.328952-001	.691630-002	-.135848-002	-.161835-004	.201953-003
16	.000000	.321635-001	.685368-002	-.881201-003	.000000	.000000
17	.000000	.000000	.525905-002	.255202-002	.000000	.000000
18	.456284-002	-.136767-001	.557646-002	.143759-002	-.104888-003	-.380621-002
19	.918774-002	-.172388-001	.530009-002	.387103-002	-.350027-003	-.120469-002
20	.138256-001	-.121413-001	.581152-002	.376546-002	-.136348-003	.348376-002
21	.189004-001	.148128-002	.561579-002	.369252-002	.745381-004	.235851-002
22	.240988-001	.182281-001	.522203-002	.251153-002	.713829-003	.406583-002
23	.288325-001	.297700-001	.316052-002	.100421-002	.243891-002	.140925-002
24	.234868-001	.344492-001	.525685-002	.388620-003	.846767-003	.810558-003
25	.195136-001	.385867-001	.565424-002	.804878-004	.181877-003	.418636-003
26	.167737-001	.418023-001	.586314-002	-.259045-003	.188585-003	.551167-003
27	.139788-001	.396528-001	.581663-002	-.435031-003	.305377-004	.773849-003
28	.111715-001	.371444-001	.585491-002	-.641220-003	.533888-005	.678007-003
29	.838881-002	.337186-001	.580678-002	-.158625-002	.500522-005	.723514-003
30	.557120-002	.301210-001	.578174-002	-.293262-002	.223444-004	.612474-003
31	.277860-002	.248869-001	.573157-002	-.516528-002	.614874-004	.145886-002
32	.000000	.203675-001	.573818-002	-.784228-002	.000000	.000000
33	.000000	.000000	.445285-002	-.249703-004	.000000	.000000
34	.435142-002	-.577219-002	.451277-002	.378074-002	.163987-003	-.726698-003
35	.874935-002	-.728101-002	.447087-002	.491324-002	.723589-005	.508848-003
36	.131489-001	-.181843-002	.493590-002	.481835-002	.263548-005	.173998-002
37	.174767-001	.913870-002	.467953-002	.362377-002	.205325-003	.238589-002
38	.215871-001	.219658-001	.448135-002	.204729-002	.608183-003	.248019-002
39	.252465-001	.313004-001	.233369-002	.125564-002	.172527-002	.126445-002
40	.211842-001	.348701-001	.444021-002	.103088-003	.858187-003	.363843-003
41	.169153-001	.383586-001	.478482-002	-.174655-003	.297868-003	.432016-003
42	.165292-001	.414276-001	.464910-002	-.255136-003	.748000-004	.486603-003
43	.136315-001	.389595-001	.474789-002	-.187632-003	.268525-004	.536373-003
44	.110248-001	.358874-001	.478274-002	-.502303-003	.341412-005	.817048-003
45	.831696-002	.309623-001	.474926-002	-.838644-003	.180618-004	.128181-002
46	.554189-002	.243786-001	.473684-002	-.183479-002	.804919-004	.186595-002
47	.278773-002	.155081-001	.488781-002	-.249758-002	.177525-003	.175716-002
48	.000000	.868803-002	.410167-002	-.101184-003	.000000	.000000

SARGENT & LUNDY

101

49	.000000	.578839-002	.483081-002	-.420838-005	.000000	.000000
50	.000000	.283870-002	.457786-002	-.345041-004	.000000	.000000
51	.000000	.000000	.207467-002	-.388453-004	.000000	.000000

3308

SARGENT & LUNDY

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.1222 1/18/88 CP= 1104.954

***** DISPLACEMENT SOLUTION ***** TIME = 00000 LOAD STEP= 2 ITERATION= 2 CUM. ITER.= 9

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	.407267-002	.732782-002	.215472-002	.359401-002	.872628-004	.133495-002
53	.808854-002	.136495-001	.229766-002	.380865-002	-.133254-003	.130054-002
54	.119064-001	.187840-001	.233013-002	.379111-002	-.176980-003	.130465-002
55	.154804-001	.253279-001	.242545-002	.378741-002	-.153742-003	.131388-002
56	.188028-001	.298660-001	.192187-002	.127678-002	-.194452-003	.107725-002
57	.215861-001	.328216-001	.760058-003	.130182-003	-.103800-003	.680792-003
58	.189608-001	.356338-001	.187527-002	.115810-003	.186478-003	.250848-003
59	.178726-001	.385343-001	.223142-002	.598352-004	.399251-004	.242637-003
60	.183378-001	.414141-001	.208587-002	-.132688-004	.138314-004	.429228-003
61	.138574-001	.387533-001	.216370-002	.493786-004	.762118-005	.855318-003
62	.109766-001	.349052-001	.218180-002	.458935-004	-.145774-004	.916375-003
63	.826208-002	.299017-001	.215784-002	.510270-003	-.297848-004	.124980-002
64	.551422-002	.229250-001	.213268-002	.104913-002	-.814267-004	.165745-002
65	.275659-002	.149447-001	.210849-002	.192747-002	-.177797-003	.189041-002
66	.000000	.871880-002	.208787-002	.747763-003	.000000	.000000
67	.000000	.532458-002	.200299-002	.486814-004	.000000	.000000
68	.000000	.290588-002	.198149-002	-.610546-005	.000000	.000000
69	.000000	.000000	.000000	-.146842-001	.000000	.000000
70	.384470-002	.101659-001	.000000	-.962217-002	-.789200-004	.123314-003
71	.751347-002	.185134-001	.000000	-.570576-002	-.632218-004	.148839-003
72	.110759-001	.236792-001	.000000	-.335206-002	-.816317-004	.136071-003
73	.143908-001	.281707-001	.000000	-.155172-002	-.976386-004	.142880-003
74	.172891-001	.310358-001	.000000	-.536174-003	-.120859-004	.173678-003
75	.204248-001	.327781-001	.000000	-.895162-004	-.188848-003	.135114-003
76	.194933-001	.359725-001	.000000	.722088-004	-.692617-004	.132357-003
77	.183222-001	.366273-001	.000000	-.186576-004	-.359444-004	.288873-003
78	.162208-001	.414141-001	.000000	.502761-005	-.174726-004	.432143-003
79	.135982-001	.390107-001	.000000	.194063-003	-.138697-006	.618185-003
80	.109415-001	.362830-001	.000000	.410776-003	.914270-006	.845693-003
81	.524567-002	.335831-001	.000000	.605847-003	.204052-005	.588917-003
82	.551874-002	.315161-001	.000000	.866781-003	.185045-005	.449265-003
83	.278343-002	.298884-001	.000000	.925786-003	.278421-005	.244949-003
84	.000000	.292579-001	.000000	.314046-003	.000000	.000000

MAXIMUMS						
NODE	7	10	5	1	23	22
VALUE	.333195-001	.423840-001	.848063-002	-.188559-001	.743881-002	.408583-002

DISPLACEMENT INCREMENT = .12934-002 AT NODE 38 CRITERION = .10000-002
PLASTICITY RATIO = .88249-001 AT ELEM 8 CRITERION = .10000-001
*** LOAD STEP 2 ITER 2 COMPLETED. TIME= .000000 TIME INC= .000000 NEW TRIANG MATRIX CUM. ITER = 9

SARGENT & LUNDY

3

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 15.1892 1/18/88 CP= 1237.908

***** DISPLACEMENT SOLUTION ***** TIME = 00000 LOAD STEP= 2 ITERATION= 3 CUM. ITER.= 10

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	.000000	.000000	.832508-002	-.185835-001	.000000	.000000
2	.477857-002	-.524588-002	.764810-002	-.151152-001	-.221015-004	.736280-003
3	.880255-002	-.180545-001	.838685-002	-.884873-002	-.125601-003	.180830-002
4	.145686-001	-.144863-001	.790355-002	-.239322-002	-.224475-003	.261185-002
5	.203314-001	-.357074-002	.847473-002	-.511745-003	-.203577-003	.336318-002
6	.267718-001	.137586-001	.721626-002	-.650118-003	-.340647-003	.383268-002
7	.331451-001	.273923-001	.589845-002	-.711674-003	-.171248-002	.381535-002
8	.228460-001	.337558-001	.683489-002	.386943-003	-.875808-003	.142065-002
9	.194156-001	.365828-001	.717512-002	.103800-003	-.253774-003	.789239-003
10	.170816-001	.419847-001	.683870-002	.801502-004	-.691304-005	.506635-003
11	.141406-001	.401173-001	.899995-002	-.270938-003	-.888935-005	.513955-003
12	.112548-001	.381440-001	.700172-002	-.575259-003	-.182344-004	.509051-003
13	.841674-002	.363417-001	.700825-002	-.800758-003	-.209083-004	.461572-003
14	.559811-002	.345580-001	.893306-002	-.104351-002	-.189482-004	.358411-003
15	.278131-002	.337457-001	.891839-002	-.134939-002	-.158346-004	.199149-003
16	.000000	.319338-001	.884831-002	-.877261-003	.000000	.000000
17	.000000	.000000	.526553-002	.283707-003	.000000	.000000
18	.455875-002	-.137264-001	.553707-002	.142804-002	-.102648-003	-.381885-002
19	.818480-002	-.174110-001	.530710-002	.365783-002	-.349636-003	-.124580-002
20	.139174-001	-.124134-001	.540277-002	.359680-002	-.141453-003	.351735-002
21	.188884-001	.136438-002	.561986-002	.352177-002	.851028-004	.238422-002
22	.240437-001	.160859-001	.521188-002	.239408-002	.685991-003	.388458-002
23	.287282-001	.283786-001	.318393-002	.102688-002	.241569-002	.137148-002
24	.234219-001	.340567-001	.526355-002	.383925-003	.832656-003	.834750-003
25	.184629-001	.381940-001	.585510-002	.504263-004	.185713-003	.388868-003
26	.167730-001	.414088-001	.586088-002	-.260884-003	.189282-003	.590685-003
27	.139790-001	.392960-001	.581587-002	-.425566-003	.310127-004	.324891-003
28	.111706-001	.368311-001	.585484-002	-.638543-003	.853115-005	.867132-003
29	.838808-002	.334530-001	.580718-002	-.167339-002	.498826-005	.713894-003
30	.557079-002	.298011-001	.579273-002	-.280535-002	.230536-004	.804721-003
31	.277844-002	.247274-001	.573222-002	-.511436-002	.508778-004	.144175-002
32	.000000	.202515-001	.574119-002	-.770534-002	.000000	.000000
33	.000000	.000000	.445587-002	-.256330-004	.000000	.000000
34	.434801-002	-.586963-002	.461454-002	.375863-002	.188335-003	-.767032-003
35	.874253-002	-.761853-002	.447380-002	.488405-002	.152484-004	.455249-003
36	.131371-001	-.235574-002	.492918-002	.488654-002	.838952-005	.172227-002
37	.174583-001	.864256-002	.487820-002	.351553-002	.208112-003	.238277-002
38	.215483-001	.215380-001	.446628-002	.188987-002	.599573-003	.250471-002
39	.251508-001	.309075-001	.235355-002	.125130-002	.170339-002	.127144-002
40	.211250-001	.345741-001	.444638-002	.102813-003	.856205-003	.384889-003
41	.188719-001	.379612-001	.476547-002	-.178217-003	.294707-003	.425880-003
42	.165263-001	.410323-001	.484710-002	-.257337-003	.772258-004	.481435-003
43	.138306-001	.388020-001	.474716-002	-.189228-003	.270193-004	.528086-003
44	.110840-001	.355786-001	.479287-002	-.504316-003	.380804-005	.608151-003
45	.831825-002	.307151-001	.474857-002	-.834983-003	.158952-004	.124830-002
46	.554125-002	.242101-001	.473762-002	-.182138-002	.584069-004	.184659-002
47	.276761-002	.154394-001	.469898-002	-.247560-002	.178730-003	.173809-002
48	.000000	.868559-002	.470311-002	-.100072-003	.000000	.000000

SARGENT & LUNDY

48	.000000	.576810-002	.483330-002	-.423273-005	.000000	.000600
50	.000000	.293034-002	.456082-002	-.345117-004	.000000	.000000
51	.000000	.000000	.207753-002	-.357815-004	.000000	.000000

SARGENT & LUNDY

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-890-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.1592 1/18/83 CP= 1234.087

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 2 ITERATION= 3 CUM. ITER.= 10

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	.406800-002	.724253-002	.215558-002	.361031-302	.853867-004	.130128-002
53	.408034-002	.133460-001	.229821-002	.387068-002	-.135408-003	.125012-002
54	.118837-001	.192708-001	.233815-002	.385232-002	-.180068-003	.128244-002
55	.184736-001	.246770-001	.241897-002	.381993-002	-.151203-003	.131536-002
56	.187833-001	.292688-001	.191868-002	.129723-002	-.188883-003	.111243-002
57	.215881-001	.324215-001	.787640-003	.127564-003	-.108250-003	.888395-003
58	.189126-001	.352336-001	.187459-002	.116493-003	.178182-003	.249558-003
59	.179450-001	.381339-001	.223209-002	.597773-004	.347654-004	.227239-003
60	.163269-001	.410148-001	.208469-002	-.127217-004	.133517-004	.423555-003
61	.136562-001	.383786-001	.215314-002	.445837-004	.782745-005	.648645-003
62	.109755-001	.345691-001	.218172-002	.370389-004	-.145939-004	.806398-003
63	.826109-002	.296201-001	.215801-002	.493995-003	-.298234-004	.123523-002
64	.551358-002	.227268-001	.213324-002	.102525-002	-.804754-004	.163663-002
65	.275628-002	.148525-001	.210955-002	.189429-002	-.175272-003	.188740-002
66	.000000	.671758-002	.208835-002	.736144-003	.000000	.000000
67	.000000	.662396-002	.200550-002	.481286-004	.000000	.000000
68	.000000	.290536-002	.198459-002	-.608818-005	.000000	.000000
69	.000000	.000000	.000000	-.146021-001	.000000	.000000
70	.383902-002	.104869-001	.000000	-.938066-002	-.779220-004	.119849-003
71	.760529-002	.180181-001	.000000	-.539831-002	-.630228-004	.141685-003
72	.110687-001	.242933-001	.000000	-.301639-002	-.410499-004	.125840-003
73	.142787-001	.283371-001	.000000	-.131431-002	-.869738-004	.130537-003
74	.172772-001	.306265-001	.000000	-.561324-003	-.122284-004	.162206-003
75	.204089-001	.323798-001	.000000	-.894688-004	-.189585-003	.129041-003
76	.194838-001	.355706-001	.000000	.719000-004	-.638568-004	.131726-003
77	.183181-001	.382260-001	.000000	-.163850-004	-.345183-004	.289430-003
78	.162202-001	.410130-001	.000000	.475768-005	-.170887-004	.490744-003
79	.135973-001	.386138-001	.000000	.188757-003	-.195628-005	.515156-003
80	.109401-001	.358995-001	.000000	.400407-003	.887253-005	.540475-003
81	.824435-002	.332276-001	.000000	.591312-003	.200451-005	.581879-003
82	.551771-002	.311668-001	.000000	.848149-003	.178342-005	.445021-003
83	.276288-002	.295628-001	.000000	.906896-003	.272893-005	.242548-003
84	.000000	.289317-001	.000000	.885673-003	.000000	.000000

MAXIMUMS

NODE	7	10	5	1	23	22
VALUE	.331451-001	.418947-001	.847473-002	-.185635-001	.241589-002	.399858-002

DISPLACEMENT INCREMENT = .85084-003 AT NODE 55 CRITERION = .10000-002
PLASTICITY RATIO = .50462-001 AT ELEM 6 CRITERION = .10000-001
*** LOAD STEP 2 ITER 3 COMPLETED. TIME= .000000 TIME INC= .000000 NEW TRIANG MATRIX CUM. ITER.= 10

SARGENT & LUNDY

3308

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.1956 1/18/85 CP= 1368.455

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 2 ITERATION= 4 CUM. ITER. = 11

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	.000000	.000000	.832801-002	-.184407-001	.000000	.000000
2	.477855-002	-.524301-002	.765018-002	-.148756-001	-.238121-004	.734941-003
3	.880584-002	-.179362-001	.838061-002	-.557059-002	-.128040-003	.160659-002
4	.145734-001	-.143820-001	.789890-002	-.231517-002	-.228013-003	.260698-002
5	.203386-001	-.347422-002	.848180-002	-.487394-003	-.215004-003	.334562-002
6	.287403-001	.136936-001	.721054-002	-.808868-003	-.375828-003	.361782-002
7	.330523-001	.272538-001	.591374-002	-.715044-003	-.176935-002	.282036-002
8	.237888-001	.336150-001	.663767-002	.395825-003	-.908124-003	.142263-002
9	.193809-001	.384414-001	.717536-002	.103585-003	-.368081-003	.789068-003
10	.170817-001	.418533-001	.683776-002	.802001-004	-.889598-005	.505133-003
11	.141405-001	.399853-001	.699858-002	-.271026-003	-.876150-005	.511811-003
12	.112546-001	.380222-001	.700170-002	-.574722-003	-.181582-004	.508658-003
13	.841651-002	.362298-001	.700841-002	-.899333-003	-.208348-004	.459310-003
14	.559898-002	.344557-001	.693345-002	-.104177-002	-.198557-004	.356633-003
15	.279129-002	.336472-001	.691511-002	-.134607-002	-.158400-004	.198162-003
16	.000000	.318439-001	.685724-002	-.877078-003	.000000	.000000
17	.000000	.000000	.526795-002	.251540-002	.000000	.000000
18	.468007-002	-.135970-001	.553893-002	.144272-002	-.102915-003	-.377626-002
19	.918570-002	-.171620-001	.531060-002	.380387-002	-.346172-003	-.121943-002
20	.139172-001	-.121318-001	.580090-002	.368998-002	-.142178-003	.350064-002
21	.188629-001	.152298-002	.582136-002	.355227-002	.584009-004	.235264-002
22	.240181-001	.160790-001	.520648-002	.240428-002	.672439-003	.396207-002
23	.286814-001	.282366-001	.319430-002	.103225-002	.240344-002	.135468-002
24	.234220-001	.339144-001	.528657-002	.395255-003	.606687-003	.836392-003
25	.194615-001	.380514-001	.535535-002	.505591-004	.171024-003	.395724-003
26	.167730-001	.412673-001	.566000-002	-.281545-003	.170250-003	.592687-003
27	.139788-001	.391590-001	.581554-002	-.438641-003	.312440-004	.322274-003
28	.111704-001	.367082-001	.585482-002	-.640030-003	.558610-005	.684153-003
29	.836788-002	.333477-001	.580732-002	-.156976-002	.497373-005	.709615-003
30	.557067-002	.298137-001	.579306-002	-.288527-002	.229214-004	.601884-003
31	.277845-002	.246631-001	.573377-002	-.508444-002	.502618-004	.143562-002
32	.000000	.202054-001	.574187-002	-.773497-002	.000000	.000000
33	.000000	.000000	.445874-002	-.245678-004	.000000	.000000
34	.434784-002	-.875538-002	.481854-002	.374832-002	.164488-003	-.732251-003
35	.874139-002	-.731858-002	.447847-002	.487493-002	.122292-004	.488094-003
36	.131334-001	-.187446-002	.492887-002	.486324-002	.631687-005	.171831-002
37	.174478-001	.887879-002	.467849-002	.353479-002	.212488-003	.234054-002
38	.215312-001	.215365-001	.446188-002	.201079-002	.598204-003	.248082-002
39	.251854-001	.307846-001	.236231-002	.124564-002	.168990-002	.124827-002
40	.211587-001	.344301-001	.444900-002	.103832-003	.949351-003	.383700-003
41	.188925-001	.378178-001	.476816-002	-.175687-003	.289780-003	.430878-003
42	.165281-001	.408886-001	.484623-002	-.257775-003	.778550-004	.483600-003
43	.138304-001	.384594-001	.474585-002	-.190858-003	.269791-004	.525952-003
44	.110437-001	.354508-001	.479266-002	-.505205-003	.353782-005	.601597-003
45	.831805-002	.308153-001	.474969-002	-.834123-003	.157728-004	.123986-002
46	.554113-002	.241425-001	.473788-002	-.181576-002	.595835-004	.163845-002
47	.278744-002	.184111-001	.488933-002	-.248643-002	.175030-003	.173048-002
48	.000000	.886580-002	.470357-002	-.998850-004	.000000	.000000

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49	.000000	.578817-002	.483434-002	-.425481-005	.000000	.000000
50	.000000	.253036-002	.458235-002	-.343590-004	.000000	.000000
51	.000000	.000000	.207802-002	-.363165-004	.000000	.000000

SARGENT & LUNDY

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.1856 1/18/85 CP= 1368.797

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 2 ITERATION= 4 CUM. ITER.= 11

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	.406678-002	.728808-002	.215852-002	.357407-002	.888058-004	.132028-002
53	.807720-002	.135089-001	.229837-002	.380158-002	-.132731-003	.127807-002
54	.118886-001	.195027-001	.232591-002	.378432-002	-.178338-003	.127121-002
55	.156656-001	.248745-001	.241814-002	.377430-002	-.152432-003	.128757-002
56	.187746-001	.292810-001	.181425-002	.127197-002	-.191861-003	.106814-002
57	.215806-001	.322755-001	.801778-003	.129485-003	-.107492-003	.676032-003
58	.189545-001	.350879-001	.188059-002	.114873-003	.183471-003	.248089-003
59	.175672-001	.379882-001	.223231-002	.578103-004	.384718-004	.242591-003
60	.163366-001	.408693-001	.208417-002	-.124407-004	.125714-004	.426084-003
61	.138557-001	.382341-001	.215292-002	.447811-004	.786010-005	.648695-003
62	.109751-001	.344382-001	.218170-002	.368054-004	-.144498-004	.802000-003
63	.826078-002	.295147-001	.215808-002	.490854-003	-.294988-004	.122803-002
64	.551334-002	.226552-001	.213341-002	.101867-002	-.801314-004	.162858-002
65	.275620-002	.148201-001	.210988-002	.188380-002	-.174425-003	.185905-002
66	.000000	.871711-002	.206981-002	.732556-003	.000000	.000000
67	.000000	.582364-002	.200655-002	.478346-004	.000000	.000000
68	.000000	.290522-002	.198502-002	-.624908-005	.000000	.000000
69	.000000	.000000	.000000	-.145463-001	.000000	.000000
70	.383816-002	.102053-001	.000000	-.945478-002	-.775323-004	.117804-003
71	.750323-002	.184971-001	.000000	-.554994-002	-.627351-004	.139582-003
72	.110648-001	.237745-001	.000000	-.321463-002	-.808740-004	.124377-003
73	.142736-001	.279107-001	.000000	-.146208-002	-.867063-004	.129816-003
74	.172721-001	.305908-001	.000000	-.508848-003	-.123522-004	.161618-003
75	.204026-001	.322336-001	.000000	.893052-004	-.189185-003	.128886-003
76	.194821-001	.354239-001	.000000	.717186-004	-.856065-004	.131716-003
77	.183153-001	.380789-001	.000000	-.163052-004	-.345898-004	.288075-003
78	.162189-001	.408670-001	.000000	.465896-005	-.189827-004	.488575-003
79	.135868-001	.384743-001	.000000	.188018-002	-.216437-006	.613243-003
80	.108385-001	.357689-001	.000000	.388940-003	.876015-006	.638259-003
81	.824386-002	.331066-001	.000000	.589082-003	.197387-005	.579557-003
82	.551733-002	.310534-001	.000000	.845054-003	.175577-005	.443343-003
83	.276268-002	.294557-001	.000000	.903386-003	.270801-005	.241610-003
84	.000000	.288278-001	.000000	.852826-003	.000000	.000000

MAXIMUMS

NODE	7	10	5	1	23	22
VALUE	.330523-001	.418533-001	.848160-002	-.184407-001	.240344-002	.396207-002

DISPLACEMENT INCREMENT = .51882-003 AT NODE 72 CRITERION = .10000-002
PLASTICITY RATIO = .28973-001 AT ELEM 6 CRITERION = .10000-001
*** LOAD STEP 2 ITER 4 COMPLETED. TIME= .000000 TIME INC= .000000 NEW TRIANG MATRIX CUM. ITER.= 11

SARGENT & LUNDY

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.2333 1/18/85 CP= 1504.650

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 2 ITERATION= 5 CUM. ITER.= 12

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	.000000	.000000	.832813-002	-.184148-001	.000000	.000000
2	.477879-002	-.823842-002	.765135-002	-.148527-001	-.245352-004	.738527-003
3	.960685-002	-.178478-001	.839188-002	-.558843-002	-.128886-003	.160671-002
4	.145786-001	-.142961-001	.788875-002	-.233454-002	-.229234-003	.260632-002
5	.203436-001	-.337878-002	.848518-002	-.500436-003	-.221041-003	.333858-002
6	.287238-001	.138604-001	.720786-002	-.827006-003	-.384879-003	.361123-002
7	.330029-001	.271334-001	.582196-002	-.717081-003	-.180002-002	.282435-002
8	.237544-001	.334936-001	.663958-002	.395235-003	-.920721-003	.142388-002
9	.183621-001	.383198-001	.717552-002	.103479-003	-.375718-003	.788630-003
10	.170817-001	.417318-001	.683723-002	.802689-004	-.883887-005	.503579-003
11	.141404-001	.398719-001	.699826-002	-.270436-003	-.668253-005	.508770-003
12	.112544-001	.378183-001	.700169-002	-.573622-003	-.180883-004	.504474-003
13	.841830-002	.361345-001	.700856-002	-.887244-003	-.207731-004	.457289-003
14	.569886-002	.343687-001	.693380-002	-.103940-002	-.197784-004	.355080-003
15	.279128-002	.335638-001	.691975-002	-.134247-002	-.157621-004	.197309-003
16	.000000	.317875-001	.685804-002	-.875881-003	.000000	.000000
17	.000000	.000000	.526905-002	.251123-002	.000000	.000000
18	.456003-002	-.135976-001	.554011-002	.142893-002	-.101169-003	-.377919-002
19	.918590-002	-.171878-001	.531178-002	.352109-002	-.343748-003	-.122508-002
20	.139175-001	-.121878-001	.580020-002	.359951-002	-.142547-003	.350373-002
21	.188811-001	.146268-002	.562191-002	.347001-002	.548783-004	.235314-002
22	.240063-001	.160133-001	.520378-002	.237191-002	.654322-003	.394718-002
23	.286567-001	.291147-001	.319969-002	.103567-002	.239569-002	.134289-002
24	.234067-001	.337822-001	.526824-002	.395935-003	.803618-003	.844559-003
25	.194487-001	.379281-001	.585555-002	.504779-004	.170035-003	.390488-003
26	.167728-001	.411451-001	.589947-002	-.262272-003	.170478-003	.682777-003
27	.139786-001	.380481-001	.581539-002	-.438232-003	.313541-004	.319874-003
28	.111702-001	.365075-001	.585481-002	-.838541-003	.654861-005	.881589-003
29	.836766-002	.332510-001	.580745-002	-.156486-002	.498633-005	.706809-003
30	.557055-002	.297412-001	.578336-002	-.288598-002	.228369-004	.599528-003
31	.277941-002	.248094-001	.573426-002	-.507737-002	.500180-004	.143083-002
32	.000000	.201667-001	.574245-002	-.770838-002	.000000	.000000
33	.000000	.000000	.445966-002	-.248774-004	.000000	.000000
34	.434737-002	-.579805-002	.461754-002	.372898-002	.186580-003	-.751087-003
35	.874051-002	-.746887-002	.447674-002	.484651-002	.152461-004	.485515-003
36	.131320-001	-.219025-002	.492774-002	.481938-002	.942721-005	.171326-002
37	.174441-001	.868536-002	.467778-002	.348590-002	.211757-003	.235247-002
38	.215227-001	.214014-001	.445839-002	.197913-002	.587081-003	.247081-002
39	.251537-001	.306423-001	.238704-002	.124491-002	.188518-002	.125280-002
40	.211424-001	.343070-001	.446049-002	.103514-003	.951285-003	.364043-003
41	.188800-001	.378545-001	.476840-002	-.176118-003	.289982-003	.428116-003
42	.165278-001	.407657-001	.484574-002	-.256082-003	.780488-004	.481651-003
43	.138302-001	.383478-001	.474667-002	-.190885-003	.270853-004	.523447-003
44	.110836-001	.353524-001	.478265-002	-.504797-003	.360836-005	.798448-003
45	.831586-002	.305362-001	.474978-002	-.832688-003	.157271-004	.123609-002
46	.554101-002	.240878-001	.473810-002	-.181081-002	.893627-004	.163276-002
47	.278738-002	.153882-001	.489968-002	-.245877-002	.174442-003	.172431-002
48	.000000	.868543-002	.470387-002	-.892906-004	.000000	.000000

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49	.000000	.578805-002	.463494-002	-.423481-005	.000000	.000000
50	.000000	.253027-002	.458313-002	-.343930-004	.000000	.000000
51	.000000	.000000	.207874-002	-.358917-004	.000000	.000000

SARGENT & LUNDY

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.2333 1/18/86 CP= 1504.831

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 2 ITERATION= 5 CUM ITER = 12

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	.408583-002	.720455-002	.215888-002	.358023-002	.848812-004	.129791-002
53	.807542-002	.133311-001	.229916-002	.382817-002	-.134527-003	.124864-002
54	.118863-001	.192073-001	.232477-002	.380450-002	-.178513-003	.125772-002
55	.154624-001	.245715-001	.241834-002	.376707-002	-.150752-003	.129854-002
56	.187707-001	.290746-001	.181274-002	.128132-002	-.188452-003	.109086-002
57	.215570-001	.321515-001	.804020-003	.128217-003	-.109849-003	.586149-003
58	.189221-001	.349838-001	.188147-002	.115503-003	.180998-003	.248565-003
59	.179545-001	.378641-001	.223248-002	.580163-004	.371075-004	.240071-002
60	.163364-001	.407454-001	.208388-002	-.122882-004	.125819-004	.423878-003
61	.138554-001	.381192-001	.215278-002	.434835-004	.761180-005	.644529-003
62	.109748-001	.343357-001	.216168-002	.342895-004	-.144730-004	.898970-003
63	.826048-002	.294260-001	.215813-002	.486040-003	-.254541-004	.122454-002
64	.551318-002	.225943-001	.213357-002	.101174-002	-.758391-004	.162212-002
65	.275812-002	.147818-001	.211018-002	.187382-002	-.172658-003	.165195-002
66	.000000	.871579-002	.209023-002	.729078-003	.000000	.000000
67	.000000	.542336-002	.200715-002	.477281-004	.000000	.000000
68	.000000	.290507-002	.198674-002	-.617956-005	.000000	.000000
69	.000000	.000000	.000000	-.145114-001	.000000	.000000
70	.383870-002	.103381-001	.000000	-.835234-002	-.771858-004	.117184-003
71	.750128-002	.188824-001	.000000	-.541056-002	-.626136-004	.138110-003
72	.110823-001	.240088-001	.000000	-.305171-002	-.805123-004	.121866-003
73	.143713-001	.280373-001	.000000	-.134632-002	-.985854-004	.126713-003
74	.172699-001	.305501-001	.000000	-.471710-003	-.124156-004	.158727-003
75	.203995-001	.321101-001	.000000	-.892842-004	-.188156-003	.127273-003
76	.194781-001	.352894-001	.000000	.718539-004	-.636724-004	.131680-003
77	.183139-001	.378655-001	.000000	-.162361-004	-.340412-004	.285238-003
78	.162189-001	.407428-001	.000000	.457038-005	-.168804-004	.489075-003
79	.135268-001	.383520-001	.000000	.148561-003	-.235657-005	.611938-003
80	.109391-001	.356514-001	.000000	.398092-003	.884228-006	.636566-003
81	.824348-002	.329852-001	.000000	.585112-003	.194845-005	.577887-003
82	.551704-002	.309474-001	.000000	.639933-003	.173218-005	.442004-003
83	.276252-002	.293547-001	.000000	.598185-003	.288957-005	.240654-003
84	.000000	.287293-001	.000000	.587859-003	.000000	.000000

MAXIMUMS						
NODE	7	10	6	1	23	22
VALUE	.330029-001	.417318-001	.648518-002	-.184149-001	.239569-002	.394718-002

DISPLACEMENT INCREMENT = .30295-003 AT NODE 55 CRITERION = .10000-002
PLASTICITY RATIO = .14364-001 AT ELEM 6 CRITERION = .10000-001
*** LOAD STEP 2 ITER 5 COMPLETED. TIME= .000000 TIME INC= .000000 NEW TRIANG MATRIX CUM ITER = 12

3308

SARGENT & LUNDY

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 2 ITERATION= 6 CUM. ITER. = 13

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	.000000	.000000	.832969-002	-.183713-001	.000000	.000000
2	.478000-002	-.522951-002	.765218-002	-.149119-001	-.249729-004	.738045-003
3	.961016-002	-.177963-001	.828224-002	-.556951-002	-.129242-003	.160881-002
4	.145781-001	-.142391-001	.789815-002	-.232010-002	-.228518-003	.280541-002
5	.203461-001	-.333081-002	.848546-002	-.488416-003	-.224172-003	.323424-002
6	.267140-001	.136728-001	.720774-002	-.808681-003	-.406167-003	.360714-002
7	.325778-001	.271073-001	.582540-002	-.717701-003	-.181810-002	.282468-002
8	.237404-001	.334868-001	.864039-002	.394957-003	-.931316-003	.142466-002
9	.193548-001	.382927-001	.717558-002	.103402-003	-.380929-003	.769155-003
10	.170819-001	.417047-001	.683700-002	.802736-004	-.885017-005	.503818-003
11	.141405-001	.398439-001	.699926-002	-.270378-003	-.865226-005	.509788-003
12	.112544-001	.378903-001	.700168-002	-.573340-003	-.180803-004	.504301-003
13	.841631-002	.361071-001	.700855-002	-.896683-003	-.207571-004	.457041-003
14	.559886-002	.343424-001	.693388-002	-.103875-002	-.197553-004	.354835-003
15	.279128-002	.335379-001	.681890-002	-.134142-002	-.157387-004	.197160-003
16	.000000	.317435-001	.685824-002	-.675881-003	.000000	.000000
17	.000000	.000000	.526959-002	.250495-002	.000000	.000000
18	.456031-002	-.135514-001	.554076-002	.143630-002	-.101180-003	-.378319-002
19	.918641-002	-.170953-001	.531254-002	.355480-002	-.341913-003	-.121182-002
20	.139180-001	-.120721-001	.579981-002	.363369-002	-.142304-003	.348491-002
21	.188804-001	.154436-002	.582186-002	.346347-002	.574589-004	.233752-002
22	.239889-001	.160189-001	.520318-002	.237502-002	.660108-003	.394083-002
23	.286435-001	.290876-001	.320238-002	.103814-002	.239291-002	.133726-002
24	.234135-001	.337650-001	.526858-002	.386567-003	.795801-003	.844353-003
25	.194521-001	.379018-001	.585559-002	.505846-004	.165528-003	.380081-003
26	.157720-001	.411178-001	.565923-002	-.262502-003	.170826-003	.594248-003
27	.139787-001	.390169-001	.581527-002	-.434959-002	.314230-004	.319714-003
28	.111702-001	.365795-001	.585481-002	-.638730-003	.566233-005	.681251-003
29	.836770-002	.332357-001	.580748-002	-.156380-002	.498121-005	.705820-003
30	.557056-002	.297192-001	.579343-002	-.288314-002	.228000-004	.589014-003
31	.277943-002	.245825-001	.573437-002	-.507207-002	.498962-004	.142912-002
32	.000000	.201545-001	.574259-002	-.770127-002	.000000	.000000
33	.000000	.000000	.446012-002	-.243729-004	.000000	.000000
34	.434748-002	-.574627-002	.481819-002	.373017-002	.184583-003	-.734729-003
35	.874042-002	-.733335-002	.447754-002	.484986-002	.137710-004	.480414-003
36	.131312-001	-.202229-002	.492789-002	.482930-002	.102857-004	.171154-002
37	.174419-001	.879444-002	.487788-002	.350417-002	.214260-003	.233518-002
38	.215178-001	.214201-001	.445711-002	.199308-002	.597015-003	.245485-002
39	.251468-001	.306150-001	.236927-002	.124307-002	.168106-002	.124505-002
40	.211570-001	.342795-001	.445112-002	.103721-003	.948281-003	.363488-003
41	.188899-001	.376670-001	.476646-002	-.175889-003	.288588-003	.431101-003
42	.165280-001	.407381-001	.464552-002	-.256131-003	.782428-004	.483019-003
43	.138302-001	.383171-001	.474859-002	-.191128-003	.270799-004	.523389-003
44	.110835-001	.353242-001	.479265-002	-.504851-003	.358344-005	.787665-003
45	.831587-002	.305129-001	.474981-002	-.832173-003	.156972-004	.123375-002
46	.564102-002	.240718-001	.473815-002	-.180896-002	.592969-004	.163103-002
47	.276739-002	.153810-001	.469972-002	-.245618-002	.174262-003	.172247-002
48	.000000	.865548-002	.470405-002	-.992033-004	.000000	.000000

SARGENT & LUNDY

49	.000000	.578811-002	.483519-002	-.424085-005	.000000	.000000
50	.000000	.293030-002	.458352-002	-.343282-004	.000000	.000000
51	.000000	.000000	.208015-002	-.360572-004	.000000	.000000

SARGENT & LUNDY

3308

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 1          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1        C      SARGENT & LUNDY  JAN  1, 1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE                    14.2706    1/18/88 CP=    1638.457

 ***** DISPLACEMENT SOLUTION *****  TIME =    .00000      LOAD STEP=    2  ITERATION=    6  CUM. ITER. =   13
   NODE        UX              UY              UZ              ROTX            ROTY            ROTZ

     52     .406560-002     .723414-002     .215737-002     .356709-002     .658152-004     .131129-002
     53     .807467-002     .134294-001     .229962-002     .380025-002    -.133086-003     .126510-002
     54     .118849-001     .193662-001     .232486-002     .378107-002    -.178926-003     .126167-002
     55     .154802-001     .247053-001     .241585-002     .377030-002    -.151791-003     .128439-002
     56     .187682-001     .291177-001     .191229-002     .127151-002    -.190857-003     .107053-002
     57     .215547-001     .321233-001     .805095-003     .129160-003    -.108683-003     .676802-003
     58     .189499-001     .349358-001     .184187-002     .114883-003     .183200-003     .248523-003
     59     .179843-001     .378381-001     .223250-002     .575359-004     .385510-004     .242308-003
     60     .162363-001     .407175-001     .208374-002    -.122265-004     .123678-004     .425159-003
     61     .136553-001     .380884-001     .215273-002     .439154-004     .789031-005     .644410-003
     62     .109748-001     .343080-001     .218188-002     .344221-004    -.144259-004     .888057-003
     63     .826046-002     .294065-001     .215815-002     .486019-003    -.294198-004     .122320-002
     64     .551315-002     .225801-001     .213361-002     .101101-002    -.797858-004     .162042-002
     65     .275812-002     .147857-001     .211025-002     .187209-002    -.172497-003     .185026-002
     66     .000000         .871670-002     .209031-002     .728438-003     .000000         .000000
     67     .000000         .582331-002     .200740-002     .476414-004     .000000         .000000
     68     .000000         .290505-002     .198711-002    -.626251-005     .000000         .000000
     69     .000000         .000000         .000000        -.145020-001     .000000         .000000
     70     .383662-002     .102250-001     .000000        -.940071-002    -.770892-004     .118437-003
     71     .750093-002     .185085-001     .000000        -.549445-002    -.625461-004     .137334-003
     72     .110614-001     .237729-001     .000000        -.315824-002    -.804042-004     .121586-003
     73     .143899-001     .278580-001     .000000        -.142381-002    -.965104-004     .128705-003
     74     .172685-001     .304739-001     .000000        -.486588-003    -.124482-004     .158771-003
     75     .203877-001     .320820-001     .000000        -.892348-004    -.189021-003     .127250-003
     76     .194753-001     .352712-001     .000000         .716032-004    -.644852-004     .131838-003
     77     .183131-001     .379274-001     .000000        -.182180-004    -.341700-004     .265114-003
     78     .182198-001     .407147-001     .000000         .455440-005    -.188647-004     .488799-003
     79     .135965-001     .383258-001     .000000         .186625-003    -.240382-004     .611535-003
     80     .109390-001     .356274-001     .000000         .356189-003     .851848-005     .626142-003
     81     .824341-002     .329734-001     .000000         .585180-003     .194178-005     .577470-003
     82     .551698-002     .309272-001     .000000         .839902-003     .172806-005     .441689-003
     83     .276249-002     .293358-001     .000000         .898107-003     .286498-005     .240589-003
     84     .000000         .287111-001     .000000         .887898-003     .000000         .000000

 MAXIMUMS
 NODE            7              10               5               1              23              22
 VALUE     .329778-001     .417047-001     .844648-002    -.183713-001     .239291-002     .394053-002

       DISPLACEMENT INCREMENT =     .23371-003 AT NODE     72      CRITERION =     .10000-002
            PLASTICITY RATIO =     .81570-002 AT ELEM      6      CRITERION =     .10000-001
 *** LOAD STEP     2   ITER     6  COMPLETED.  TIME=    .000000      TIME INC=    .000000     NEW TRIANG MATRIX  CUM. ITER. =   13

  *** SOLUTION CONVERGED - LOAD STEP    2  CONVERGED AFTER ITERATION      6  CUM. ITER. =   13
       NEXT ITERATION (IDENTIFIED AS ITERATION     20) SATISFIES PRINTOUT OR POST DATA REQUEST.
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SARGENT & LUNDY

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 1          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1        C      SARGENT & LUNDY  JAN  1, 1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE                    14.2781    1/18/88 CP=    1685.704

 ***** DISPLACEMENT SOLUTION *****  TIME =    .00000      LOAD STEP=    2  ITERATION=   20  CUM. ITER. =   14
   NODE        UX              UY              UZ              ROTX            ROTY            ROTZ

      1     .000000         .000000         .832868-002    -.183713-001     .000000         .000000
      2     .478000-002    -.522951-002     .785218-002    -.149119-001    -.249729-004     .736045-003
      3     .981016-002    -.177983-001     .639224-002    -.556961-002    -.129242-003     .180881-002
      4     .145781-001    -.142391-001     .788815-002    -.232010-002    -.229518-003     .280541-002
      5     .203481-001    -.333097-002     .848648-002    -.488418-003    -.224172-003     .333428-002
      6     .267140-001     .136728-001     .720774-002    -.808681-003    -.406187-003     .380714-002
      7     .328778-001     .271073-001     .592540-002    -.717701-003    -.181810-002     .282488-002
      8     .237404-001     .334668-001     .664039-002     .374957-003    -.931316-003     .142468-002
      9     .193549-001     .382827-001     .717558-002     .103402-003    -.380929-003     .789255-003
     10     .170819-001     .417047-001     .683700-002     .802736-004    -.885017-005     .503914-003
     11     .141405-001     .384439-001     .699828-002    -.270379-003    -.865228-005     .509788-003
     12     .112544-001     .378903-001     .700168-002    -.573340-003    -.180803-004     .504301-003
     13     .841631-002     .381071-001     .700859-002    -.898883-003    -.207571-004     .457041-003
     14     .559888-002     .343424-001     .883388-002    -.103875-002    -.197553-004     .354835-003
     15     .279129-002     .335378-001     .691980-002    -.134142-002    -.157397-004     .197180-003
     16     .000000         .317435-001     .881824-002    -.675891-003     .000000         .000000
     17     .000000         .000000         .526955-002     .250495-002     .000000         .000000
     18     .456031-002    -.135514-001     .554076-002     .143630-002    -.101180-003    -.376319-002
     19     .918641-002    -.170953-001     .531254-002     .355480-002    -.341913-003    -.121192-002
     20     .138180-001    -.120721-001     .579891-002     .363369-002    -.142304-003     .349491-002
     21     .188806-001     .154476-002     .582186-002     .346347-002     .524589-004     .233752-003
     22     .239881-001     .160199-001     .520319-002     .237802-002     .660108-003     .394053-002
     23     .286475-001     .280878-001     .320238-002     .103814-002     .239291-002     .133726-002
     24     .234785-001     .337650-001     .526898-002     .398567-003     .795801-003     .844353-003
     25     .194321-001     .379019-001     .585559-002     .505840-004     .185526-003     .390081-003
     26     .181730-001     .411178-001     .565923-002    -.262502-003     .170626-003     .594248-003
     27     .128787-001     .390169-001     .581527-002    -.438859-003     .214230-004     .319714-003
     28     .111702-001     .385795-001     .585481-002    -.838730-003     .588233-005     .881251-003
     29     .832770-002     .332357-001     .560748-002    -.156380-002     .498121-005     .705920-003
     30     .567056-002     .287182-001     .579343-002    -.288314-002     .228000-004     .599014-003
     31     .277943-002     .245925-001     .573437-002    -.507207-002     .498982-004     .142912-002
     32     .000000         .201545-001     .574259-002    -.770127-002     .000000         .000000
     33     .000000         .000000         .446012-002    -.243729-004     .000000         .000000
     34     .434748-002    -.574627-002     .481819-002     .373017-002     .164663-003    -.734725-003
     35     .874042-002    -.733335-002     .447754-002     .484886-002     .137710-004     .480414-003
     36     .131312-001    -.202229-002     .432789-002     .482830-002     .102657-004     .171184-002
     37     .174419-001     .879444-002     .487768-002     .350417-002     .214280-003     .233518-002
     38     .215178-001     .214201-001     .445711-002     .199306-002     .597015-003     .245485-002
     39     .251468-001     .306150-001     .236927-002     .124307-002     .188108-002     .124506-002
     40     .211570-001     .342795-001     .445112-002     .103721-003     .849261-003     .383486-003
     41     .188859-001     .378870-001     .476546-002    -.175869-003     .284586-003     .431101-003
     42     .185280-001     .407381-001     .464552-002    -.258131-003     .782428-004     .443019-003
     43     .138302-001     .383171-001     .474658-002    -.191126-003     .270789-004     .523388-003
     44     .110835-001     .353242-001     .479265-002    -.504851-003     .358344-005     .787885-003
     45     .831587-002     .305129-001     .474881-002    -.832173-003     .158972-004     .123375-002
     46     .554102-002     .240715-001     .473815-002    -.180898-002     .892889-004     .183103-002
     47     .276739-002     .153810-001     .468972-002    -.245616-002     .174262-003     .172247-002
     48     .000000         .888548-002     .470405-002    -.982033-004     .000000         .000000
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SARGENT & LUNDY

49	.000000	.578811-002	.463519-002	-.424086-005	.000000	.000000
50	.000000	.293030-002	.458352-002	-.343282-004	.000000	.000000
51	.000000	.000000	.208015-002	-.360572-004	.000000	.000000

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-890-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.2781 1/18/86 CP= 1885.892

***** DISPLACEMENT SOLUTION ***** TIME = .00000 LOAD STEP= 2 ITERATION= 20 CUM. ITER = 14

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	.405800-002	.723414-002	.215737-002	.356709-002	.658152-004	.131129-002
53	.807467-002	.134282-001	.229862-002	.380025-002	-.133086-003	.128510-002
54	.118848-001	.183682-001	.232496-002	.378107-002	-.178926-003	.126147-002
55	.154602-001	.247053-001	.241585-002	.377030-002	-.151791-003	.128439-002
56	.187682-001	.291177-001	.191229-002	.127151-002	-.190857-003	.107053-002	
57	.215547-001	.321233-001	.805086-003	.129167-003	-.108683-003	.876602-003
58	.188485-001	.349358-001	.188187-002	.1148[illegible]-003	.183200-003	.248523-003
59	.179843-001	.378381-001	.223260-002	.5753[illegible]-004	.385510-004	.242308-003
60	.163363-001	.407175-001	.208374-002	-.1222[illegible]-004	.123678-004	.825159-003
61	.138553-001	.380894-001	.215273-002	.43915[illegible]-004	.789031-005	.844410-003
62	.109748-001	.343090-001	.218168-002	.348221-004	-.144255-004	.898057-003
63	.826048-002	.284065-001	.215815-002	.486018-003	-.294188-004	.122320-002
64	.551315-002	.225801-001	.213381-002	.101101-002	-.797858-004	.162042-002
65	.275612-002	.147857-001	.211025-002	.187209-002	-.173457-003	.185026-002
66	.000000	.871870-002	.209031-002	.728438-003	.000000	.000000
67	.000000	.562331-002	.200740-002	.478414-004	.000000	.000000
68	.000000	.280505-002	.198711-002	-.826251-005	.000000	.000000
69	.000000	.000000	.000000	-.145020-001	.000000	.000000
70	.383862-002	.102250-001	.000000	-.940071-002	-.770883-004	.114437-003
71	.750093-002	.185065-001	.000000	-.549445-002	-.625461-004	.137334-003
72	.110614-001	.237729-001	.000000	-.315824-002	-.804042-004	.121566-003
73	.143699-001	.278590-001	.000000	-.142381-002	-.965104-004	.128705-003
74	.172685-001	.304738-001	.000000	-.498588-003	-.124482-004	.158771-003
75	.203977-001	.320820-001	.000000	-.892348-004	-.169021-003	.127250-003
76	.194783-001	.352712-001	.000000	.718032-004	-.644882-004	.131638-003
77	.183131-001	.379274-001	.000000	-.162180-004	-.341700-004	.289114-003
78	.162198-001	.407147-001	.000000	.455440-005	-.158847-004	.488795-003
79	.135985-001	.383258-001	.000000	.181625-003	-.240382-005	.611535-003
80	.109380-001	.356274-001	.000000	.398189-003	.851848-006	.535143-003
81	.824341-002	.329734-001	.000000	.585190-003	.194178-005	.577470-003
82	.551898-002	.309272-001	.000000	.838503-003	.172506-005	.441689-003
83	.276249-002	.283358-001	.000000	.886107-003	.268498-005	.240868-003
84	.000000	.287111-001	.000000	.887886-005	.000000	.000000
MAXIMUMS						
NODE	7	10	5	1	23	22
VALUE	.329778-001	.417047-001	.848646-002	-.183713-001	.239291-002	.394053-002

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 C SARGENT & LUNDY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE 14.2783 1/18/86 CP= 1555.477

***** ELEMENT STRESSES ***** TIME = .000000 LOAD STEP= 2 ITERATION= 20 CUM. ITER.= 4

EL= 1 NODES= 1 2 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 334.37 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	334.37	-18547	-.0006852	.0000000	.0000000	.0000000	.0000000
	2	334.37	-28812	-.0010263	.0000000	.0000000	.0000000	.0000000
	3	334.37	-23082	-.0008209	.0000000	.0000000	.0000000	.0000000
END J	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	334.37	-33061	-.0011759	-.0001089	.0000000	.0000000	.0000000
	2	334.37	-25957	-.0009232	.0000000	.0000000	.0000000	.0000000
	3	334.37	-15476	-.0005504	.0000000	.0000000	.0000000	.0000000

FORCES ON MEMBER AT NODE						
1	12184.1	-56.6351	-327.444	-19.1954	915.474	589.912
2	-12184.1	56.6351	327.444	19.1954	894.481	-848.368

EL= 2 NODES= 2 3 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 334.37 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	334.37	-27122	-.0008650	.0000000	.0000000	.0000000	.0000000
	2	334.37	-25561	-.0008091	.0000000	.0000000	.0000000	.0000000
	3	334.37	-18931	-.0006733	.0000000	.0000000	.0000000	.0000000
END J	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	334.37	-27756	-.0008872	.0000000	.0000000	.0000000	.0000000
	2	334.37	-27346	-.0008727	.0000000	.0000000	.0000000	.0000000
	3	334.37	-14733	-.0005240	.0000000	.0000000	.0000000	.0000000

FORCES ON MEMBER AT NODE						
2	11768.5	-119.015	23.1342	-51.8412	-153.546	848.123
3	-11768.5	119.015	-23.1342	51.8412	39.8026	-1233.28

EL= 3 NODES= 3 4 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 334.37 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	334.37	-14865	-.0005287	.0000000	.0000000	.0000000	.0000000
	2	334.37	-27430	-.0009758	.0000000	.0000000	.0000000	.0000000
	3	334.37	-20093	-.0007146	.0000000	.0000000	.0000000	.0000000
END J	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	334.37	-33571	-.0011940	-.0001780	.0000000	.0000000	.0000000
	2	334.37	-23677	-.0008421	.0000000	.0000000	.0000000	.0000000
	3	334.37	-8847.9	-.0003161	.0000000	.0000000	.0000000	.0000000

FORCES ON MEMBER AT NODE						
3	10876.5	-88.1821	-446.870	-18.0294	1228.37	717.308
4	-10876.5	88.1821	446.870	18.0294	987.758	-1150.87

EL= 4 NODES= 4 5 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 334.37 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	334.37	-16328	.0005807	.0000000	.0000000	.0000000	.0000000
	2	334.37	-23330	.0008297	.0000000	.0000000	.0000000	.0000000
	3	334.37	-17383	-.0006182	.0000000	.0000000	.0000000	.0000000
END J	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	334.37	-27890	-.0009918	.0000000	.0000000	.0000000	.0000000
	2	334.37	-20893	-.0007431	.0000000	.0000000	.0000000	.0000000
	3	334.37	-10894	-.0003804	.0000000	.0000000	.0000000	.0000000

FORCES ON MEMBER AT NODE						
4	9732.33	-84.5453	-278.327	-10.1642	884.492	581.354
5	-9732.33	84.5453	278.327	10.1642	883.949	-897.035

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EL= 5 NODES= 5 6 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 334.37 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	334.37	5875.9	.0002090	.0000000	.0000000	.0000000	.0000000
	2	334.37	-21432	-.0007765	.0000000	.0000000	.0000000	.0000000
	3	334.37	-23286	-.0008282	.0000000	.0000000	.0000000	.0000000
END J	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	334.37	-34454	-.0012254	-.0003047	.0000000	.0000000	.0000000
	2	334.37	-11302	-.0004020	.0000000	.0000000	.0000000	.0000000
	3	334.37	-3805.2	-.0001353	.0000000	.0000000	.0000000	.0000000

FORCES ON MEMBER AT NODE						
5	7395.79	-78.2715	-1015.46	1.78088	2708.71	-142.114
6	-7395.79	78.2715	1015.46	-1.78088	2284.06	-243.721

EL= 6 NODES= 6 7 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 334.37 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	334.37	32386	.0011520	.0000108	.0000000	.0000000	.0000000
	2	334.37	-11927	-.0004242	.0000000	.0000000	.0000000	.0000000
	3	334.37	-32082	-.0011414	.0000000	.0000000	.0000000	.0000000
END J	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	334.37	-40082	-.0014256	-.0011053	.0000000	.0000000	.0000000
	2	334.37	4744.2	.0001687	.0000000	.0000000	.0000000	.0000000
	3	334.37	7550.6	.0002685	.0000000	.0000000	.0000000	.0000000

FORCES ON MEMBER AT NODE						
6	2829.88	-88.4378	-1782.63	-.484555	4350.51	-1964.18
7	-2829.88	88.4378	1782.63	.484555	4414.08	1529.34

EL= 7 NODES= 7 8 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 280.88 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	280.88	-22020	-.0007783	.0000000	.0000000	.0000000	.0000000
	2	280.88	7813.2	.0002754	.0000000	.0000000	.0000000	.0000000
	3	280.88	-11211	-.0003852	.0000000	.0000000	.0000000	.0000000
END J	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	280.88	3247.3	.0001145	.0000000	.0000000	.0000000	.0000000
	2	280.88	-3661.2	-.0001291	.0000000	.0000000	.0000000	.0000000
	3	280.88	-13529	-.0004768	.0000000	.0000000	.0000000	.0000000

FORCES ON MEMBER AT NODE						
7	2131.75	-187.837	873.456	-4.56556	-2918.40	-1858.77
8	-2131.75	187.837	-873.456	4.56556	-875.367	884.642

EL= 8 NODES= 8 9 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 199.27 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	199.27	8469.1	.0002955	.0000000	.0000000	.0000000	.0000000
	2	199.27	-3843.8	-.0001341	.0000000	.0000000	.0000000	.0000000
	3	199.27	-15373	-.0005365	.0000000	.0000000	.0000000	.0000000
END J	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	199.27	-7802.7	-.0002723	.0000000	.0000000	.0000000	.0000000
	2	199.27	-1559.0	-.0000544	.0000000	.0000000	.0000000	.0000000
	3	199.27	-3871.0	-.0001281	.0000000	.0000000	.0000000	.0000000

FORCES ON MEMBER AT NODE						
8	1786.95	-172.823	-340.132	-2.86897	1203.86	-1127.13
9	-1786.95	172.823	340.132	2.86897	810.375	208.487

EL= 9 NODES= 9 10 MAT= 2 PRESSURES(I,Y)= .00000 .00000 AVE. TEMP= 186.83 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	EP	EPPL	EPDR	EPCR	EPSW
	1	186.83	7851.8	.0002788	.0000000	.0000000	.0000000	.0000000
	2	186.83	-2012.3	-.0000700	.0000000	.0000000	.0000000	.0000000

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        3    166.83    -9515.5          -.0003306        .0000000        .0000000        .0000000        .0000000
END J  PT     TEMP        SIGX             EP              EPPL            EPOR            EPCR            EPSW
        1    166.93    -9003.8          -.0003130        .0000000        .0000000        .0000000        .0000000
        2    166.93     489.11          .0000170         .0000000        .0000000        .0000000        .0000000
        3    166.93     2447.3          .0000851         .0000000        .0000000        .0000000        .0000000
FORCES ON MEMBER AT NODE    9   675.489         -173.425        -356.822        -1.84738        975.043        -733.500
                           10  -675.489          173.425         356.822         1.84738        928.008        -181.423


EL:   10  NODES:   10   11  MAT:   2  PRESSURES(Z,Y):     .00000          .00000          AVE. TEMP:  162.97          3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX             EP              EPPL            EPOR            EPCR            EPSW
        1    162.97    -3141.8          -.0001092        .0000000        .0000000        .0000000        .0000000
        2    162.97    -345.19          -.0000120        .0000000        .0000000        .0000000        .0000000
        3    162.97     373.95          .0000130         .0000000        .0000000        .0000000        .0000000
END J  PT     TEMP        SIGX             EP              EPPL            EPOR            EPCR            EPSW
        1    162.97     1339.8          .0000466         .0000000        .0000000        .0000000        .0000000
        2    162.97    -1403.9          -.0000488        .0000000        .0000000        .0000000        .0000000
        3    162.97    -1990.2          -.0000692        .0000000        .0000000        .0000000        .0000000
FORCES ON MEMBER AT NODE   10   418.773         25.9549         110.160        -1.89156       -273.393         70.3013
                           11  -418.773        -25.9549        -110.160         1.89156       -268.227         57.3101


EL:   11  NODES:   11   12  MAT:   2  PRESSURES(Z,Y):     .00000          .00000          AVE. TEMP:  163.03          3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX             EP              EPPL            EPOR            EPCR            EPSW
        1    163.03    -2047.4          -.0000711        .0000000        .0000000        .0000000        .0000000
        2    163.03    -1306.8          -.0000455        .0000000        .0000000        .0000000        .0000000
        3    163.03    -727.42          -.0000253        .0000000        .0000000        .0000000        .0000000
END J  PT     TEMP        SIGX             EP              EPPL            EPOR            EPCR            EPSW
        1    163.03    -425.38          -.0000148        .0000000        .0000000        .0000000        .0000000
        2    163.03    -1420.3          -.0000494        .0000000        .0000000        .0000000        .0000000
        3    163.03    -2126.3          -.0000739        .0000000        .0000000        .0000000        .0000000
FORCES ON MEMBER AT NODE   11   652.987         25.5871         34.4674        -1.72073       -72.1885         56.8386
                           12  -652.987        -25.5871        -34.4674         1.72073       -87.2664         69.0158


EL:   12  NODES:   12   13  MAT:   2  PRESSURES(Z,Y):     .00000          .00000          AVE. TEMP:  163.05          3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX             EP              EPPL            EPOR            EPCR            EPSW
        1    163.05    -2732.5          -.0000948        .0000000        .0000000        .0000000        .0000000
        2    163.05    -1356.4          -.0000471        .0000000        .0000000        .0000000        .0000000
        3    163.05    -1262.7          -.0000439        .0000000        .0000000        .0000000        .0000000
END J  PT     TEMP        SIGX             EP              EPPL            EPOR            EPCR            EPSW
        1    163.05    -311.09          -.0000108        .0000000        .0000000        .0000000        .0000000
        2    163.05    -1744.4          -.0000606        .0000000        .0000000        .0000000        .0000000
        3    163.05    -2909.1          -.0001011        .0000000        .0000000        .0000000        .0000000
FORCES ON MEMBER AT NODE   12   812.421         25.0017         55.8584        -1.83646       -134.519         9.06463
                           13  -812.421        -25.0017        -55.8584         1.83646       -140.118         113.861


EL:   13  NODES:   13   14  MAT:   2  PRESSURES(Z,Y):     .00000          .00000          AVE. TEMP:  163.05          3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX             EP              EPPL            EPOR            EPCR            EPSW
        1    163.05    -2035.1          -.0000707        .0000000        .0000000        .0000000        .0000000
        2    163.05    -1697.7          -.0000590        .0000000        .0000000        .0000000        .0000000
        3    163.05    -2261.7          -.0000786        .0000000        .0000000        .0000000        .0000000
END J  PT     TEMP        SIGX             EP              EPPL            EPOR            EPCR            EPSW
        1    163.05    -1251.0          -.0000435        .0000000        .0000000        .0000000        .0000000
        2    163.05    -1662.4          -.0000543        .0000000        .0000000        .0000000        .0000000
        3    163.05    -3316.6          -.0001152        .0000000        .0000000        .0000000        .0000000
FORCES ON MEMBER AT NODE   13   831.471         23.6822         12.9014        -.805888        -32.9929        -55.1396
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                           14  -831.471        -23.6822        -12.9014         .805888        -30.4391         171.479


EL:   14  NODES:   14   15  MAT:   2  PRESSURES(Z,Y):     .00000          .00000          AVE. TEMP:  163.05          3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX             EP              EPPL            EPOR            EPCR            EPSW
        1    163.05    -2576.1          -.0000895        .0000000        .0000000        .0000000        .0000000
        2    163.05    -1517.7          -.0000527        .0000000        .0000000        .0000000        .0000000
        3    163.05    -2841.1          -.0000987        .0000000        .0000000        .0000000        .0000000
END J  PT     TEMP        SIGX             EP              EPPL            EPOR            EPCR            EPSW
        1    163.05    -828.45          -.0000288        .0000000        .0000000        .0000000        .0000000
        2    163.05    -1780.4          -.0000622        .0000000        .0000000        .0000000        .0000000
        3    163.05    -4043.3          -.0001405        .0000000        .0000000        .0000000        .0000000
FORCES ON MEMBER AT NODE   14   1023.55         18.4821         40.1710        -1.71802       -103.469        -129.389
                           15  -1023.55        -18.4821        -40.1710         1.71802       -84.0387         220.239


EL:   15  NODES:   15   16  MAT:   2  PRESSURES(Z,Y):     .00000          .00000          AVE. TEMP:  163.05          3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX             EP              EPPL            EPOR            EPCR            EPSW
        1    163.05    -1590.5          -.0000553        .0000000        .0000000        .0000000        .0000000
        2    163.05    -1773.2          -.0000618        .0000000        .0000000        .0000000        .0000000
        3    163.05    -3748.3          -.0001303        .0000000        .0000000        .0000000        .0000000
END J  PT     TEMP        SIGX             EP              EPPL            EPOR            EPCR            EPSW
        1    163.05    -2001.6          -.0000696        .0000000        .0000000        .0000000        .0000000
        2    163.05    -1463.0          -.0000508        .0000000        .0000000        .0000000        .0000000
        3    163.05    -3858.6          -.0001376        .0000000        .0000000        .0000000        .0000000
FORCES ON MEMBER AT NODE   15   1076.07         10.3290        -14.3426         3.78106        17.6576        -193.186
                           16  -1076.07        -10.3290         14.3426        -3.78106        52.8802         243.870


EL:   16  NODES:    1    2   17   MAT:   2  AREA:   4.92       FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL    48
P1,P2:    .0000         .0000        XC,YC,ZC:   1.64         -8.00          5.78          TEMPS:   272.8   272.8   272.8   272.8   272.8   272.8
TOP SX,SY,SXY,SZ:  -18784.          -19398.          1706.8          .00000          SIG1,SIG2,SIG3:   .18835-013 -17357.          -20828.
    S.I.:   20828.          SIGE:   19326.
MID SX,SY,SXY,SZ:  -14553.          -2360.6          1505.3          .00000          SIG1,SIG2,SIG3:   .83112-014 -2187.2          -14736.
    S.I.:   14736.          SIGE:   13769.
BOT SX,SY,SXY,SZ:  -10321.          -14637.          1303.8          .00000          SIG1,SIG2,SIG3:   14765.          .18717-006 -10365
    S.I.:   25094.          SIGE:   21839.
TOP EP:    -.000457 -.000485   .000156   .000403   EPPL:   .000000   .000000   .000000   .000000   NUEO:        .300
    EPOR:   .000000   .000000   .000000   .000000   EPCR:   .000000   .000000   .000000   .000000   EPEO:    .000481
MID EP:    -.000487  .000070   .000138   .000179   EPPL:   .000000   .000000   .000000   .000000   NUEO:        .300
    EPOR:   .000000   .000000   .000000   .000000   EPCR:   .000000   .000000   .000000   .000000   EPEO:    .000485
BOT EP:    -.000518  .000525   .000119  -.000048   EPPL:   .000000   .000000   .000000   .000000   NUEO:        .300
    EPOR:   .000000   .000000   .000000   .000000   EPCR:   .000000   .000000   .000000   .000000   EPEO:    .000769
SIGEPL(TOP,MID,BOT):   19326.2          13769.5          21839.0


EL:   17  NODES:    17    2   18   MAT:   2  AREA:   4.92       FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL    48
P1,P2:    .0000         .0000        XC,YC,ZC:   3.28         -8.01          5.11          TEMPS:   211.5   211.5   211.5   211.5   211.5   211.5
TOP SX,SY,SXY,SZ:  -1861.3          -3330.6          -305.16          .00000          SIG1,SIG2,SIG3:   .00000          -1818.7          -3292.2
    S.I.:   3292.2          SIGE:   2840.4
MID SX,SY,SXY,SZ:   679.24          417.10          -2331.7          .00000          SIG1,SIG2,SIG3:   2783.7          .35130-007 -1887.4
    S.I.:   4471.1          SIGE:   3910.7
BOT SX,SY,SXY,SZ:   3239.8          4164.8          -4158.2          .00000          SIG1,SIG2,SIG3:   7886.2          .65747-007 -481.81
    S.I.:   8367.8          SIGE:   8137.7
TOP EP:    -.000031 -.000097  -.000024   .000055   EPPL:   .000000   .000000   .000000   .000000   NUEO:        .300
    EPOR:   .000000   .000000   .000000   .000000   EPCR:   .000000   .000000   .000000   .000000   EPEO:    .000103
MID EP:     .000018  .000007  -.000203  -.000011   EPPL:   .000000   .000000   .000000   .000000   NUEO:        .300
    EPOR:   .000000   .000000   .000000   .000000   EPCR:   .000000   .000000   .000000   .000000   EPEO:    .000137
BOT EP:     .000070  .000112  -.000378  -.000078   EPPL:   .000000   .000000   .000000   .000000   NUEO:        .300
    EPOR:   .000000   .000000   .000000   .000000   EPCR:   .000000   .000000   .000000   .000000   EPEO:    .000244
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SIGEPL(TOP,MID,BOT)=  2940.36       3910.89       5137.88

EL=    5  NODES=   18     2    19      MAT=   2  AREA=   4.92      FBOT,FMID,FTOP=   000          000          000          PL TRI SHELL    48
P1,P2=   0000         0000        XC,YC,ZC=   4.56       -8.01       5.11        TEMPS=  211.5   211.5   211.5   211.5   211.5
TOP SX,SY,SXY,SZ= -5898.5          -3733.8          114.43          .00000       SIG1,SIG2,SIG3=    00000          -3727.7          -5904.6
    S.I.=   5904.6        SIGE=   5172.0
MID SX,SY,SXY,SZ=  2105.1          -606.21          864.86          .00000       SIG1,SIG2,SIG3=   2259.4          .23727-007      -780.47
    S.I.=   3019.8        SIGE=   2720.5
BOT SX,SY,SXY,SZ=  10108.          2521.3          1215.3          .00000       SIG1,SIG2,SIG3=   10299.          2331.4          -.31300-007
    S.I.=   10299.        SIGE=   9353.5
TOP EP=    -.000187  -.000068   .000010   .000101  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000181
MID EP=     .000080  -.000043   .000060  -.000018  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000095
BOT EP=     .000327  -.000018   .000110  -.000122  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000327
SIGEPL(TOP,MID,BOT)=  5171.96       2720.53       9353.48

EL=   18  NODES=    2     3    19      MAT=   2  AREA=   4.92      FBOT,FMID,FTOP=   000          000          000          PL TRI SHELL    48
P1,P2=   0000         0000        XC,YC,ZC=   8.20       -8.01       5.78        TEMPS=  272.9   272.9   272.9   272.9   272.9
TOP SX,SY,SXY,SZ= -14723.          -3871.8          -5330.5          .00000       SIG1,SIG2,SIG3=  .12770-013  -1691.4          -16903.
    S.I.=   16903.        SIGE=   16124.
MID SX,SY,SXY,SZ= -14056.          -1951.8          -3967.3          .00000       SIG1,SIG2,SIG3=  -.12193-013  -767.55          -15242.
    S.I.=   15242.        SIGE=   14873.
BOT SX,SY,SXY,SZ= -13393.          -31.864          -2604.2          .00000       SIG1,SIG2,SIG3=   457.77          .11268-008      -13883.
    S.I.=   14341.        SIGE=   14117.
TOP EP=    -.000478   .000019  -.000488   .000196  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000568
MID EP=    -.000474   .000040  -.000363   .000169  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000524
BOT EP=    -.000471   .000140  -.000238   .000142  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000497
SIGEPL(TOP,MID,BOT)=  16124.3       14873.4       14117.2

EL=   20  NODES=    3     4    19      MAT=   2  AREA=   4.92      FBOT,FMID,FTOP=   000          000          000          PL TRI SHELL    48
P1,P2=   0000         0000        XC,YC,ZC=   11.5       -8.02       5.78        TEMPS=  272.9   273          272.9   272.9   272.9
TOP SX,SY,SXY,SZ= -15394.          -4275.7          -1133.6          .00000       SIG1,SIG2,SIG3=   .00000          -8088.6          -15570.
    S.I.=   15570.        SIGE=   13486.
MID SX,SY,SXY,SZ= -13271.          -1715.2          -1212.7          .00000       SIG1,SIG2,SIG3=  -.57552-004  -1588.3          -13398.
    S.I.=   13398.        SIGE=   12677.
BOT SX,SY,SXY,SZ= -11147.          4845.4          -1291.8          .00000       SIG1,SIG2,SIG3=   4848.1          .12728-008      -11251.
    S.I.=   16200.        SIGE=   14378.
TOP EP=    -.000455  -.000129   .000104   .000250  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000475
MID EP=    -.000448   .000040  -.000111   .000158  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000446
BOT EP=    -.000444   .000288  -.000118   .000067  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000506
SIGEPL(TOP,MID,BOT)=  13487.9       12676.7       14378.8

EL=   21  NODES=   19     4    20      MAT=   2  AREA=   4.92      FBOT,FMID,FTOP=   000          000          000          PL TRI SHELL    48
P1,P2=   0000         0000        XC,YC,ZC=   13.1       -8.01       5.11        TEMPS=  211.5   211.5   211.5   211.5   211.5
TOP SX,SY,SXY,SZ=  1224.6          -5466.3          -3809.0          .00000       SIG1,SIG2,SIG3=   2800.2          .77331-007      -7041.8
    S.I.=   9842.1        SIGE=   8783.4
MID SX,SY,SXY,SZ=  3501.4          -1713.3          -4044.0          .00000       SIG1,SIG2,SIG3=   5705.7          .75812-007      -3917.8
    S.I.=   9823.3        SIGE=   8381.9
BOT SX,SY,SXY,SZ=  5776.2          2039.8          -4279.0          .00000       SIG1,SIG2,SIG3=   8782.4          .78268-007      -844.43
    S.I.=   9708.8        SIGE=   9270.7
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SARGENT & LUNDY

3

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TOP EP=     .000100  -.000204  -.0007..   .000044  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .00000.   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000307
MID EP=     .000140  -.000097  -.000078  -.000019  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000293
BOT EP=     .000181   .000011  -.001407   .000082  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000324
SIGEPL(TOP,MID,BOT)=  8783.43       8381.87       9270.74

EL=   22  NODES=   20     4    21      MAT=   2  AREA=   4.92      FBOT,FMID,FTOP=   000          000          000          PL TRI SHELL    48
P1,P2=   0000         0000        XC,YC,ZC=   16.1       -8.01       5.11        TEMPS=  211.5   211.5   211.5   211.5   211.5
TOP SX,SY,SXY,SZ=  -784.74          739.42          3287.3          .00000       SIG1,SIG2,SIG3=   3351.8          .53028-007      -3387.2
    S.I.=   5749.0        SIGE=   5844.8
MID SX,SY,SXY,SZ=  2324.4          1918.1          3205.7          .00000       SIG1,SIG2,SIG3=   5162.2          .50772-007      -1308.7
    S.I.=   6481.8        SIGE=   5918.7
BOT SX,SY,SXY,SZ=  5433.5          3298.8          3124.0          .00000       SIG1,SIG2,SIG3=   7360.7          389.54          -.27485-007
    S.I.=   7360.7        SIGE=   7183.1
TOP EP=    -.000035   .000034   .000299   .000000  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000304
MID EP=     .000085   .000029   .000281  -.000040  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000207
BOT EP=     .000188   .000023   .000264  -.000081  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000251
SIGEPL(TOP,MID,BOT)=  5844.86       5918.73       7183.06

EL=   23  NODES=    4     5    21      MAT=   2  AREA=   4.92      FBOT,FMID,FTOP=   000          000          000          PL TRI SHELL    48
P1,P2=   0000         0000        XC,YC,ZC=   18.0       -8.01       5.78        TEMPS=  272.9   272.9   272.9   272.9   272.9
TOP SX,SY,SXY,SZ= -9772.9          -5518.2          -9508.4          .00000       SIG1,SIG2,SIG3=   2088.0          .15311-008      -17388.
    S.I.=   18527.        SIGE=   18527.
MID SX,SY,SXY,SZ= -8117.7          -3436.2          -9250.8          .00000       SIG1,SIG2,SIG3=   3400.2          .15207-008      -15854.
    S.I.=   18364.        SIGE=   17888.
BOT SX,SY,SXY,SZ= -6462.4          -1354.2          -8993.2          .00000       SIG1,SIG2,SIG3=   4781.7          .15198-008      -14578.
    S.I.=   18340.        SIGE=   17453.
TOP EP=    -.000285  -.000091   .000871   .000162  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000852
MID EP=    -.000285  -.000025  -.000847   .000133  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000630
BOT EP=    -.000284   .000042  -.000823   .000104  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000818
SIGEPL(TOP,MID,BOT)=  18527.3       17888.1       17453.4

EL=   24  NODES=    5     6    21      MAT=   2  AREA=   4.92      FBOT,FMID,FTOP=   000          000          000          PL TRI SHELL    48
P1,P2=   0000         0000        XC,YC,ZC=   21.3       -8.00       5.78        TEMPS=  272.9   272.9   272.9   272.9   272.9
TOP SX,SY,SXY,SZ= -5881.5          -4581.4          -4742.0          .00000       SIG1,SIG2,SIG3=  -.30440-013  -437.99          -10015.
    S.I.=   10015.        SIGE=   8803.2
MID SX,SY,SXY,SZ= -5181.6          -2256.6          -5070.8          .00000       SIG1,SIG2,SIG3=   1884.8          .82915-007      -8003.0
    S.I.=   10556.        SIGE=   9872.7
BOT SX,SY,SXY,SZ= -4481.7          48.186          -5398.8          .00000       SIG1,SIG2,SIG3=   3835.7          .92048-007      -6078.2
    S.I.=   11715.        SIGE=   10385.
TOP EP=    -.000158  -.000098   .000434   .000110  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000345
MID EP=    -.000159  -.000025  -.000484   .000078  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000348
BOT EP=    -.000158  -.000048  -.000494   .000047  EPPL=   .000000   .000000   .000000   .000000  NUE0=    .300
    EPOR=   .000000   .000000   .000000   .000000  EPCR=   .000000   .000000   .000000   .000000  EPE0=    .000388
SIGEPL(TOP,MID,BOT)=  8803.20       9872.74       10385.8

EL=   25  NODES=   21     6    22      MAT=   2  AREA=   4.92      FBOT,FMID,FTOP=   000          000          000          PL TRI SHELL    48
P1,P2=   0000         0000        XC,YC,ZC=   23.0       -7.98       5.11        TEMPS=  211.5   211.5   211.5   211.5   211.5
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SARGENT & LUNDY

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TOP SX,SY,SXY,SZ=  10640        -10114        -9334.7        .00000      SIG1,SIG2,SIG3=  14221          .21834-008 -13695.
    S.I.=  27916          SIGE=  24177
MID SX,SY,SXY,SZ=  11710        -8437.7       -9678.6        .00000      SIG1,SIG2,SIG3=  15806          .21953-008 -12334.
    S.I.=  27940          SIGE=  24252
BOT SX,SY,SXY,SZ=  12780        -6761.3       -10023         .00000      SIG1,SIG2,SIG3=  17006          .21985-008 -10988.
    S.I.=  27994          SIGE=  24430
TOP EP=       .000478  -.000485  -.000848  -.000006  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000845
MID EP=       .000488  -.000418  -.000880  -.000034  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000848
BOT EP=       .000518  -.000370  -.000911  -.000063  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000854
SIGEPL(TOP,MID,BOT)=  24177.3        24251.8        24429.5

EL=   26  NODES=   22     6    23      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  26.2        -7.98          5.11       TEMPS=  211.5  211.5  211.5  211.5  211.5
TOP SX,SY,SXY,SZ=  -847.63          -839.01        10342          .00000      SIG1,SIG2,SIG3=  9495.0          .16252-008 -11186.
    S.I.=  20685          SIGE=  17933
MID SX,SY,SXY,SZ=  285.85           -956.99        10424          .00000      SIG1,SIG2,SIG3=  10096          .16409-008 -10789.
    S.I.=  20885          SIGE=  18090
BOT SX,SY,SXY,SZ=  1378.3           -1078.0        10506          .00000      SIG1,SIG2,SIG3=  10728          .16623-008 -10428.
    S.I.=  21156          SIGE=  18322
TOP EP=      -.000021  -.000020      000840   .000018  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000      000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000627
MID EP=       .000018  -.000036      000847   .000007  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000      000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000632
BOT EP=       .000060  -.000052      000855  -.000003  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000      000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000640
SIGEPL(TOP,MID,BOT)=  17833.3        18090.0        18322.3

EL=   27  NODES=    6     7    23      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  27.9        -7.98          5.78       TEMPS=  272.9  272.9  272.9  272.9  272.9
TOP SX,SY,SXY,SZ=  -6409.5          -5436.3        -18817         .00000      SIG1,SIG2,SIG3=  12900          .29578-008 -24748.
    S.I.=  37646          SIGE=  33136
MID SX,SY,SXY,SZ=  -6375.8          -4466.4        -18858         .00000      SIG1,SIG2,SIG3=  13462          .29673-008 -24304.
    S.I.=  37766          SIGE=  33152
BOT SX,SY,SXY,SZ=  -6339.8          -3497.3        -18885         .00000      SIG1,SIG2,SIG3=  14018          .29780-008 -23857.
    S.I.=  37877          SIGE=  33184
TOP EP=      -.000188  -.000124  -.001123   .000125  EPPL=  -.000004  -.000010  -.000174   .000013  NUEO=        .316
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEQ=   .001268
MID EP=      -.000177  -.000080  -.001127   .000115  EPPL=  -.000005  -.000008  -.000177   .000012  NUEO=        .316
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEQ=   .001270
BOT EP=      -.000166  -.000056  -.001129   .000104  EPPL=  -.000007  -.000003  -.000181   .000010  NUEO=        .316
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEQ=   .001273
SIGEPL(TOP,MID,BOT)=  33135.9        33152.4        33184.0

EL=   28  NODES=    7     8    23      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  28.5        -6.19          5.78       TEMPS=  237.3  237.3  237.3  237.3  237.3
TOP SX,SY,SXY,SZ=  1836.3           2919.8         9751.5         .00000      SIG1,SIG2,SIG3=  12051          .15357-008 -7484.6
    S.I.=  18545          SIGE=  17079
MID SX,SY,SXY,SZ=  2119.9           5856.5         9430.9         .00000      SIG1,SIG2,SIG3=  13804          .15108-008 -5825.2
    S.I.=  19229          SIGE=  17124
BOT SX,SY,SXY,SZ=  2803.5           8797.1         9110.2         .00000      SIG1,SIG2,SIG3=  15323          .15121-008 -3922.0
    S.I.=  19246          SIGE=  17614
TOP EP=       .000027   .000085   .000889  -.000048  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000595
MID EP=       .000013   .000183   .000860  -.000084  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000600
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SARGENT & LUNDY


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BOT EP=      -.000001   .000281   .000831  -.000120  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000818
SIGEPL(TOP,MID,BOT)=  17079.3        17123.7        17614.1

EL=   29  NODES=   23     8    24      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  29.5        -4.41          5.11       TEMPS=  175.9  175.9  175.9  175.9  175.9
TOP SX,SY,SXY,SZ=  5381.4           -1343.9        -222.83        .00000      SIG1,SIG2,SIG3=  5398.7          .53036-007 -1361.3
    S.I.=  6750.0         SIGE=  6186.1
MID SX,SY,SXY,SZ=  5765.6           -890.73        -569.18        .00000      SIG1,SIG2,SIG3=  5817.4          .53113-007 -942.48
    S.I.=  6759.8         SIGE=  6341.3
BOT SX,SY,SXY,SZ=  6139.8           -437.53        -955.54        .00000      SIG1,SIG2,SIG3=  6275.8          .53617-007 -573.53
    S.I.=  6849.4         SIGE=  6581.4
TOP EP=       .000202  -.000103  -.000020  -.000042  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000215
MID EP=       .000210  -.000081  -.000053  -.000051  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000221
BOT EP=       .000218  -.000079  -.000088  -.000060  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000229
SIGEPL(TOP,MID,BOT)=  6186.08        6341.36        6581.37

EL=   30  NODES=   24     8    25      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  29.5        -.854          5.11       TEMPS=  175.9  175.9  175.9  175.9  175.9
TOP SX,SY,SXY,SZ=  -1466.4           1176.8         -551.69        .00000      SIG1,SIG2,SIG3=  1303.2          .22755-007 -1592.8
    S.I.=  2896.1         SIGE=  2512.3
MID SX,SY,SXY,SZ=  -845.11           1348.8         -433.66        .00000      SIG1,SIG2,SIG3=  1439.0          .17084-007 -735.35
    S.I.=  2174.3         SIGE=  1915.6
BOT SX,SY,SXY,SZ=  176.20            1520.7         -275.63        .00000      SIG1,SIG2,SIG3=  1575.0          121.88          -.57088-006
    S.I.=  1575.0         SIGE=  1517.7
TOP EP=      -.000063   .000056  -.000054   .000003  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000687
MID EP=      -.000037   .000054  -.000038  -.000007  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000647
BOT EP=      -.000010   .000051  -.000025  -.000018  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000653
SIGEPL(TOP,MID,BOT)=  2512.26        1915.61        1517.71

EL=   31  NODES=    8     9    25      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  29.5         .925          5.78       TEMPS=  182.8  182.8  182.8  182.8  182.8
TOP SX,SY,SXY,SZ=  3236.3           -2338.9        -3313.0        .00000      SIG1,SIG2,SIG3=  4778.5          .68040-007 -3881.1
    S.I.=  8859.5         SIGE=  7512.8
MID SX,SY,SXY,SZ=  3104.9           -2310.0        -3266.8        .00000      SIG1,SIG2,SIG3=  4640.4          .66675-007 -3845.5
    S.I.=  8485.8         SIGE=  7358.7
BOT SX,SY,SXY,SZ=  2973.5           -2281.0        -3220.6        .00000      SIG1,SIG2,SIG3=  4502.5          .65313-007 -3810.0
    S.I.=  8312.6         SIGE=  7207.2
TOP EP=       .000137  -.000115  -.000300  -.000009  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000282
MID EP=       .000132  -.000113  -.000296  -.000008  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000286
BOT EP=       .000127  -.000111  -.000292  -.000007  EPPL=  .000000  .000000  .000000  .000000  NUEO=        .300
    EPDR=     .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEQ=   .000291
SIGEPL(TOP,MID,BOT)=  7512.84        7359.69        7207.21

EL=   32  NODES=    9    10    25      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000       XC,YC,ZC=  29.5         4.48          5.78       TEMPS=  181.3  181.3  181.3  181.3  181.3
TOP SX,SY,SXY,SZ=  1004.9           1051.3         -1483.6        .00000      SIG1,SIG2,SIG3=  2482.8          .23002-007 -434.69
    S.I.=  2927.5         SIGE=  2736.2
MID SX,SY,SXY,SZ=  1103.6           1550.2         -1481.2        .00000      SIG1,SIG2,SIG3=  2805.0          .23228-007 -151.28
    S.I.=  2956.3         SIGE=  2883.7
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SARGENT & LUNDY

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BOT SX,SY,SXY,S2=  1200.3      2049.0      -1458.8       .00000     SIG1,SIG2,SIG3=  3143.9       105.41      -.11537-007
    S.I.=  3143.9       SIGE=  3092.5
TOP EP=      .000024    .000026  -.000132  -.000021  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000095
MID EP=      .000022    .000042  -.000132  -.000028  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000100
BOT EP=      .000020    .000059  -.000132  -.000034  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000107
SIGEPL(TOP,MID,BOT)=  2726.21       2863.65       3092.57

EL=   33  NODES=   25   10   28      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000       .0000       XC,YC,ZC=  29.5        6.26        5.11        TEMPS=  154.3  154.3  154.3  154.3  154.3  154.3
TOP SX,SY,SXY,S2=  3055.8       -1010.8       -2038.3       .00000     SIG1,SIG2,SIG3=  3901.6       .45242-007  -1856.5
    S.I.=  5758.0       SIGE=  5090.4
MID SX,SY,SXY,S2=  3133.8       -841.67       -2038.9       .00000     SIG1,SIG2,SIG3=  3983.5       .44747-007  -1701.6
    S.I.=  5695.0       SIGE=  5063.4
BOT SX,SY,SXY,S2=  3211.7       -672.97       -2039.5       .00000     SIG1,SIG2,SIG3=  4065.8       .44258-007  -1547.0
    S.I.=  5632.6       SIGE=  5040.5
TOP EP=      .000117  -.000067  -.000184  -.000021  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000177
MID EP=      .000118  -.000062  -.000184  -.000024  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000176
BOT EP=      .000118  -.000057  -.000184  -.000026  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000175
SIGEPL(TOP,MID,BOT)=  5080.37       5063.43       5040.60

EL=   34  NODES=   25   10   27      MAT=  2  AREA=  4.82       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000       .0000       XC,YC,ZC=  27.9        8.04        5.11        TEMPS=  154.3  154.3  154.3  154.3  154.3  154.3
TOP SX,SY,SXY,S2=  500.50       198.00       -1359.0       .00000     SIG1,SIG2,SIG3=  1715.7       .21488-007  -1019.2
    S.I.=  2734.9       SIGE=  2354.0
MID SX,SY,SXY,S2=  659.56       204.60       -1361.6       .00000     SIG1,SIG2,SIG3=  1812.5       .21893-007  -948.37
    S.I.=  2760.9       SIGE=  2429.7
BOT SX,SY,SXY,S2=  818.62       213.20       -1364.2       .00000     SIG1,SIG2,SIG3=  1913.3       .21959-007  -881.47
    S.I.=  2794.8       SIGE=  2474.7
TOP EP=      .000015    .000002  -.000123  -.000007  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000083
MID EP=      .000021    .000000  -.000123  -.000009  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000084
BOT EP=      .000028  -.000001  -.000123  -.000011  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000085
SIGEPL(TOP,MID,BOT)=  2393.99       2429.74       2474.70

EL=   35  NODES=   10   11   27      MAT=  2  AREA=  7.92       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000       .0000       XC,YC,ZC=  28.2        8.04        5.78        TEMPS=  158.6  158.5  158.6  158.6  158.6
TOP SX,SY,SXY,S2=  -80.137       -251.27       500.08       .00000     SIG1,SIG2,SIG3=  341.84       .79726-008  -673.05
    S.I.=  1014.7       SIGE=  894.24
MID SX,SY,SXY,S2=  -81.995       -220.24       532.28       .00000     SIG1,SIG2,SIG3=  385.84       .84348-008  -687.87
    S.I.=  1073.5       SIGE=  941.88
BOT SX,SY,SXY,S2=  -83.854       -188.20       564.50       .00000     SIG1,SIG2,SIG3=  430.42       .88982-008  -703.48
    S.I.=  1133.9       SIGE=  991.43
TOP EP=      .000000  -.000008   .000045   .000003  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000031
MID EP=    -.000001  -.000007   .000048   .000003  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000033
BOT EP=    -.000001  -.000006   .000051   .000003  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000034
SIGEPL(TOP,MID,BOT)=  894.241       941.884       991.432
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SARGENT & LUNDY

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EL=   36  NODES=   11   12   27      MAT=  2  AREA=  4.82       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000       .0000       XC,YC,ZC=  23.0        8.04        5.78        TEMPS=  158.7  158.7  158.7  158.7  158.7
TOP SX,SY,SXY,S2=  -502.85       -521.85       882.48       .00000     SIG1,SIG2,SIG3=  370.38       .13868-007  -1394.7
    S.I.=  1765.1       SIGE=  1812.1
MID SX,SY,SXY,S2=  -448.86       -338.28       892.41       .00000     SIG1,SIG2,SIG3=  500.51       .14051-007  -1287.7
    S.I.=  1788.2       SIGE=  1857.8
BOT SX,SY,SXY,S2=  -395.27       -154.86       902.33       .00000     SIG1,SIG2,SIG3=  635.24       .14306-007  -1186.4
    S.I.=  1820.6       SIGE=  1900.5
TOP EP=    -.000012  -.000013   .000080   .000011  EPPL=  .000000   .00000    .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000058
MID EP=    -.000012  -.000007   .000081   .000006  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000055
BOT EP=    -.000012  -.000001   .000081   .000006  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000058
SIGEPL(TOP,MID,BOT)=  1812.11       1897.80       1900.51

EL=   37  NODES=   27   12   26      MAT=  2  AREA=  4.82       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000       .0000       XC,YC,ZC=  21.3        8.04        5.11        TEMPS=  154.3  154.3  154.3  154.3  154.3
TOP SX,SY,SXY,S2=  -178.38       319.83       210.71       .00000     SIG1,SIG2,SIG3=  387.01       .51284-008  -255.44
    S.I.=  852.45       SIGE=  686.48
MID SX,SY,SXY,S2=  -117.89       450.83       254.82       .00000     SIG1,SIG2,SIG3=  548.33       .59991-008  -215.19
    S.I.=  763.52       SIGE=  681.86
BOT SX,SY,SXY,S2=  -57.118       581.83       298.93       .00000     SIG1,SIG2,SIG3=  709.66       .68756-008  -175.17
    S.I.=  675.04       SIGE=  801.94
TOP EP=    -.000010   .000013   .000019  -.000001  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000020
MID EP=    -.000009   .000017   .000023  -.000003  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000024
BOT EP=    -.000008   .000021   .000027  -.000005  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000028
SIGEPL(TOP,MID,BOT)=  589.458       681.882       801.940

EL=   38  NODES=   28   12   29      MAT=  2  AREA=  4.82       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000       .0000       XC,YC,ZC=  16.0        8.04        5.11        TEMPS=  154.3  154.3  154.3  154.3  154.3
TOP SX,SY,SXY,S2=  48.029       87.339       -474.20       .00000     SIG1,SIG2,SIG3=  532.47       .74831-008  -416.10
    S.I.=  948.57       SIGE=  823.55
MID SX,SY,SXY,S2=  181.82       106.19       -677.98       .00000     SIG1,SIG2,SIG3=  723.23       .81022-008  -436.22
    S.I.=  1158.5       SIGE=  1013.5
BOT SX,SY,SXY,S2=  314.60       145.04       -881.78       .00000     SIG1,SIG2,SIG3=  916.86       .10786-007  -457.21
    S.I.=  1374.1       SIGE=  1212.0
TOP EP=      .000001   .000002  -.000043  -.000001  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000029
MID EP=      .000005   .000002  -.000052  -.000003  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000035
BOT EP=      .000009   .000002  -.000062  -.000005  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000042
SIGEPL(TOP,MID,BOT)=  823.546       1013.53       1211.87

EL=   39  NODES=   12   13   29      MAT=  2  AREA=  4.82       FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000       .0000       XC,YC,ZC=  15.4        8.04        5.78        TEMPS=  158.7  158.7  158.7  158.7  158.7
TOP SX,SY,SXY,S2=  -718.83       -320.42       125.18       .00000     SIG1,SIG2,SIG3=  .31178-015  -284.37       -784.98
    S.I.=  754.98       SIGE=  880.43
MID SX,SY,SXY,S2=  -871.90       -134.23       259.37       .00000     SIG1,SIG2,SIG3=  -.17483-014  -29.498       -776.82
    S.I.=  776.62       SIGE=  782.30
BOT SX,SY,SXY,S2=  -624.86       81.983       393.56       .00000     SIG1,SIG2,SIG3=  232.84       .81588-008  -805.61
    S.I.=  1038.1       SIGE=  943.59
TOP EP=    -.000022   .000004   .000011   .000011  EPPL=  .000000   .000000   .000000   .000000  NUEO=      .300
    EPOR=    .000000    .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPEO=    .000023
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SARGENT & LUNDY

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MID EPS:  -.000022   .000002   .000023   .000004  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000026
BOT EPS:  -.000022   .000008   .000036   .000005  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000033
SIGEPL(TOP,MID,BOT):  680.427      762.296      843.587

EL:   40  NODES:   13   14   28     MAT:  2  AREA:  4.92      FBOT,FMID,FTOP:  .000        .000        .000        PL TRI SHELL   48
P1,P2:  .0000       .0000      XC,YC,ZC:  13.1        8.03        5.76      TEMPS:  158.7  158.7  158.7  158.7  158.7
TOP SX,SY,SXY,SZ: -928.74      -810.81       389.65        .00000      SIG1,SIG2,SIG3:  .00000      -475.75      -1263.9
    S.I.:  1263.9       SIGE:  1105.7
MID SX,SY,SXY,SZ: -805.22      -174.34       443.16        .00000      SIG1,SIG2,SIG3:  54.176       .85479-008  -1033.7
    S.I.:  1087.9       SIGE:  1061.8
BOT SX,SY,SXY,SZ: -681.70       462.23       496.66        .00000      SIG1,SIG2,SIG3:  847.77       .11804-007  -867.24
    S.I.:  1515.0       SIGE:  1316.6
TOP EPS:  -.000024  -.000018   .000035   .000018  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000038
MID EPS:  -.000026   .000002   .000040   .000010  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000037
BOT EPS:  -.000028   .000023   .000045   .000002  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000046
SIGEPL(TOP,MID,BOT):  1105.87      1061.86      1316.62

EL:   41  NODES:   28   14   30     MAT:  2  AREA:  4.92      FBOT,FMID,FTOP:  .000        .000        .000        PL TRI SHELL   48
P1,P2:  .0000       .0000      XC,YC,ZC:  11.5        8.03        5.11      TEMPS:  154.3  154.3  154.3  154.3  154.3
TOP SX,SY,SXY,SZ: -317.87      -724.72       182.83        .00000      SIG1,SIG2,SIG3:  .22001-014  -247.92      -794.68
    S.I.:  794.68       SIGE:  704.24
MID SX,SY,SXY,SZ:  -57.881      280.01       119.20        .00000      SIG1,SIG2,SIG3:  318.93       .33136-008  -104.81
    S.I.:  421.74       SIGE:  380.32
BOT SX,SY,SXY,SZ:  182.11       1284.7       55.774        .00000      SIG1,SIG2,SIG3:  1287.5       179.30       -.43538-008
    S.I.:  1287.5       SIGE:  1207.9
TOP EPS:  -.000003  -.000022   .000015   .000011  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000024
MID EPS:  -.000005   .000010   .000011  -.000002  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000013
BOT EPS:  -.000007   .000043   .000005  -.000015  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000042
SIGEPL(TOP,MID,BOT):  704.243      380.322      1207.92

EL:   42  NODES:   30   14   31     MAT:  2  AREA:  4.92      FBOT,FMID,FTOP:  .000        .000        .000        PL TRI SHELL   48
P1,P2:  .0000       .0000      XC,YC,ZC:  8.20        8.03        5.11      TEMPS:  154.3  154.3  154.3  154.3  154.3
TOP SX,SY,SXY,SZ: -1132.5      -528.19       -113.28        .00000      SIG1,SIG2,SIG3:  .00000      -505.71      -1152.8
    S.I.:  1152.8       SIGE:  1001.0
MID SX,SY,SXY,SZ:  138.55       35.214       -316.58        .00000      SIG1,SIG2,SIG3:  407.66       .50407-008  -233.89
    S.I.:  641.55       SIGE:  562.35
BOT SX,SY,SXY,SZ:  1408.6       596.62       -519.88        .00000      SIG1,SIG2,SIG3:  1683.0       343.17       -.51852-008
    S.I.:  1683.0       SIGE:  1520.8
TOP EPS:  -.000034  -.000008   .000010   .000017  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000035
MID EPS:  -.000004   .000000  -.000029  -.000002  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000020
BOT EPS:   .000043   .000006  -.000047  -.000021  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000053
SIGEPL(TOP,MID,BOT):  1000.99      562.347      1520.76

EL:   43  NODES:   14   15   31     MAT:  2  AREA:  4.92      FBOT,FMID,FTOP:  .000        .000        .000        PL TRI SHELL   48
P1,P2:  .0000       .0000      XC,YC,ZC:  5.56        8.03        5.78      TEMPS:  158.7  158.7  158.7  158.7  158.7
TOP SX,SY,SXY,SZ: -1347.7      -2075.4       -347.73        .00000      SIG1,SIG2,SIG3:  .18002-014  -1208.3      -2214.9
    S.I.:  2214.9       SIGE:  1920.8
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SARGENT & LUNDY

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MID SX,SY,SXY,SZ:  -858.18      -156.73       105.28        .00000      SIG1,SIG2,SIG3:  -.37281-015  -141.28      -874.62
    S.I.:  874.62       SIGE:  813.23
BOT SX,SY,SXY,SZ:  -370.67       1762.0       558.29        .00000      SIG1,SIG2,SIG3:  1899.3       .18814-007  -907.98
    S.I.:  2407.3       SIGE:  2187.8
TOP EPS:  -.000025  -.000058   .000031   .000035  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000067
MID EPS:  -.000028   .000004   .000010   .000011  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000038
BOT EPS:  -.000031   .000065   .000050  -.000014  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000078
SIGEPL(TOP,MID,BOT):  1820.79      813.234      2187.78

EL:   44  NODES:   31   15   18     MAT:  2  AREA:  4.92      FBOT,FMID,FTOP:  .000        .000        .000        PL TRI SHELL   48
P1,P2:  .0000       .0000      XC,YC,ZC:  3.26        8.03        5.78      TEMPS:  158.7  158.7  158.7  158.7  158.7
TOP SX,SY,SXY,SZ: -3015.2      -1546.8       -238.80        .00000      SIG1,SIG2,SIG3:  .00000      -1508.9      -3053.1
    S.I.:  3053.1       SIGE:  2644.1
MID SX,SY,SXY,SZ:  -187.67      -962.31       -222.65        .00000      SIG1,SIG2,SIG3:  -.41734-015  -126.23      -1021.7
    S.I.:  1021.7       SIGE:  864.05
BOT SX,SY,SXY,SZ:  2639.9       -377.82       -206.40        .00000      SIG1,SIG2,SIG3:  2653.9       .23931-007  -391.87
    S.I.:  3045.8       SIGE:  2870.0
TOP EPS:   .000088  -.000022  -.000022   .000048  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000082
MID EPS:   .000004  -.000031  -.000020   .000012  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000033
BOT EPS:  -.000098  -.000041  -.000018  -.000024  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000100
SIGEPL(TOP,MID,BOT):  2644.10      984.046      2859.98

EL:   45  NODES:   16   32   31     MAT:  2  AREA:  4.92      FBOT,FMID,FTOP:  .000        .000        .000        PL TRI SHELL   48
P1,P2:  .0000       .0000      XC,YC,ZC:  1.84        8.03        5.11      TEMPS:  154.3  154.3  154.3  154.3  154.3
TOP SX,SY,SXY,SZ: -3174.6      -959.37       413.50        .00000      SIG1,SIG2,SIG3:  .00000      -884.70      -3249.3
    S.I.:  3249.3       SIGE:  2909.6
MID SX,SY,SXY,SZ:  168.82       -28.257      -29.416        .00000      SIG1,SIG2,SIG3:  176.41       .16678-008  -35.847
    S.I.:  212.26       SIGE:  196.80
BOT SX,SY,SXY,SZ:  3512.2       902.86       -482.33        .00000      SIG1,SIG2,SIG3:  3802.0       813.08       -.10857-007
    S.I.:  3802.0       SIGE:  3272.2
TOP EPS:  -.000100   .000000   .000037   .000043  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000101
MID EPS:   .000005  -.000003  -.000004  -.000001  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000007
BOT EPS:   .000113  -.000005  -.000044  -.000048  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000114
SIGEPL(TOP,MID,BOT):  2909.80      196.789      3272.17

EL:   46  NODES:   33   17   34     MAT:  2  AREA:  4.92      FBOT,FMID,FTOP:  .000        .000        .000        PL TRI SHELL   48
P1,P2:  .0000       .0000      XC,YC,ZC:  1.64       -6.00        3.11      TEMPS:  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ: -2024.5       8934.7       580.89        .00000      SIG1,SIG2,SIG3:  8983.9       .84423-007  -2053.6
    S.I.:  12017.       SIGE:  11134.
MID SX,SY,SXY,SZ:  -816.44      8730.7       356.34        .00000      SIG1,SIG2,SIG3:  8742.6       .83643-007  -828.36
    S.I.:  10671.       SIGE:  10238.
BOT SX,SY,SXY,SZ:  191.82       8526.6       131.79        .00000      SIG1,SIG2,SIG3:  8526.2       190.03       -.36868-007
    S.I.:  8526.2       SIGE:  8434.6
TOP EPS:  -.000174   .000388   .000053  -.000082  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000388
MID EPS:  -.000133   .000347   .000032  -.000092  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000365
BOT EPS:  -.000093   .000328   .000011  -.000101  EPPL:  .000000   .000000   .000000   .000000  NUE0:      .300
    EPDR:  .000000   .000000   .000000   .000000  EPCR:  .000000   .000000   .000000   .000000  EPE0:  .000327
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SARGENT & LUNDY

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SIGEPL(TOP,MID,BOT)=  11133.7        10238.4        9434.60

EL=   47  NODES=   17   18   34      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=  3.28        -8.01        3.78        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  12316.          3248.0        -2838.0         .00000      SIG1,SIG2,SIG3=  13688.          2477.8        -.44042-007
    S.I.=  13688.        SIGE=  12633.
MID SX,SY,SXY,SZ=  11810.          1556.9        -1810.5         .00000      SIG1,SIG2,SIG3=  12155.          1212.5        -.42987-007
    S.I.=  12155.        SIGE=  11596.
BOT SX,SY,SXY,SZ=  10702.          -134.16        -885.05         .00000      SIG1,SIG2,SIG3=  10791.          .86540-007    -222.97
    S.I.=  11014.        SIGE=  10904.
TOP EP=    .000414   -.000022   -.000256   -.000168  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000438
MID EP=    .000394   -.000069   -.000172   -.000139  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000402
BOT EP=    .000373   -.000116   -.000089   -.000110  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000378
SIGEPL(TOP,MID,BOT)=  12633.0        11595.9        10904.8

EL=   48  NODES=   34   18   19      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=  6.86        -8.01        3.78        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  1983.6          11720.        886.49          .00000      SIG1,SIG2,SIG3=  11796.          1907.1        -.38851-007
    S.I.=  11796.        SIGE=  10968.
MID SX,SY,SXY,SZ=  1650.6          12122.        896.73          .00000      SIG1,SIG2,SIG3=  12188.          1804.5        -.41501-007
    S.I.=  12188.        SIGE=  11451.
BOT SX,SY,SXY,SZ=  1317.6          12524.        926.97          .00000      SIG1,SIG2,SIG3=  12549.          1292.9        -.44221-007
    S.I.=  12549.        SIGE=  11955.
TOP EP=    -.000053   .000386   .000078   -.000142  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000380
MID EP=    -.000060   .000403   .000063   -.000143  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000397
BOT EP=    -.000085   .000421   .000048   -.000144  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000415
SIGEPL(TOP,MID,BOT)=  10967.8        11450.0        11955.2

EL=   49  NODES=   34   19   35      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=  8.20        -8.01        3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  10050.          -1208.4        1800.7          .00000      SIG1,SIG2,SIG3=  10332.          .92883-007    -1487.4
    S.I.=  11819.        SIGE=  11150.
MID SX,SY,SXY,SZ=  10294.          -108.48        2035.8          .00000      SIG1,SIG2,SIG3=  10878.          .87771-007    -492.59
    S.I.=  11171.        SIGE=  10933.
BOT SX,SY,SXY,SZ=  10538.          989.43         2270.4          .00000      SIG1,SIG2,SIG3=  11050.          477.07        -.41537-007
    S.I.=  11050.        SIGE=  10819.
TOP EP=    .000361   -.000148   .000162   -.000092  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000387
MID EP=    .000358   -.000111   .000184   -.000106  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000379
BOT EP=    .000355   -.000075   .000205   -.000120  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000376
SIGEPL(TOP,MID,BOT)=  11149.8        10932.8        10818.4

EL=   50  NODES=   35   19   36      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=  11.5        -8.01        3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  84.875          9810.1         3887.4          .00000      SIG1,SIG2,SIG3=  11056.          .95993-007    -1181.2
    S.I.=  12217.        SIGE=  11880.
MID SX,SY,SXY,SZ=  -51.915          10241.         3428.7          .00000      SIG1,SIG2,SIG3=  11278.          .97183-007    -1080.0
    S.I.=  12369.        SIGE=  11861.
BOT SX,SY,SXY,SZ=  -188.70          10671.         3161.9          .00000      SIG1,SIG2,SIG3=  11535.          .98741-007    -1042.2
    S.I.=  12567.        SIGE=  12080.
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SARGENT & LUNDY

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TOP EP=    -.000059   .000339   .000334   -.000103  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000405
MID EP=    -.000108   .000356   .000309   -.000106  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000411
BOT EP=    -.000118   .000372   .000285   -.000109  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000419
SIGEPL(TOP,MID,BOT)=  11680.1        11661.4        12078.8

EL=   51  NODES=   19   20   36      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=  13.1        -8.01        3.78        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  11215.          -718.11        -5184.5         .00000      SIG1,SIG2,SIG3=  13140.          .12401-008    -2842.8
    S.I.=  15783.        SIGE=  14661.
MID SX,SY,SXY,SZ=  12817.          1218.2         -5404.5         .00000      SIG1,SIG2,SIG3=  14772.          .12344-008    -938.80
    S.I.=  15710.        SIGE=  15263.
BOT SX,SY,SXY,SZ=  14018.          3150.4         -5644.7         .00000      SIG1,SIG2,SIG3=  16420.          749.30        -.61564-007
    S.I.=  16420.        SIGE=  16058.
TOP EP=    .000397   -.000142   -.000488   -.000108  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000508
MID EP=    .000425   -.000068   -.000487   -.000144  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000529
BOT EP=    .000454   -.000037   -.000509   -.000178  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000557
SIGEPL(TOP,MID,BOT)=  14641.1        15262.8        16058.6

EL=   52  NODES=   38   20   21      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=  16.4        -8.00        3.78        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  1297.1          14334.         3377.8          .00000      SIG1,SIG2,SIG3=  15157.          473.88        -.57685-007
    S.I.=  15157.        SIGE=  14826.
MID SX,SY,SXY,SZ=  1894.2          14209.         3807.3          .00000      SIG1,SIG2,SIG3=  15276.          528.95        -.57581-007
    S.I.=  15276.        SIGE=  14873.
BOT SX,SY,SXY,SZ=  2081.3          14084.         4238.6          .00000      SIG1,SIG2,SIG3=  15430.          745.58        -.57888-007
    S.I.=  15430.        SIGE=  15071.
TOP EP=    -.000104   .000484   .000305   -.000183  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000518
MID EP=    -.000089   .000475   .000343   -.000168  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000519
BOT EP=    -.000074   .000467   .000382   -.000168  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000523
SIGEPL(TOP,MID,BOT)=  14826.0        14872.7        15070.8

EL=   53  NODES=   38   21   37      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=  18.0        -8.00        3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  13780.          -2979.9        -1898.2         .00000      SIG1,SIG2,SIG3=  13985.          .13522-008    -3218.2
    S.I.=  17210.        SIGE=  15848.
MID SX,SY,SXY,SZ=  14103.          -2475.0        -2148.1         .00000      SIG1,SIG2,SIG3=  14377.          .13485-008    -2748.3
    S.I.=  17125.        SIGE=  15830.
BOT SX,SY,SXY,SZ=  14447.          -1970.1        -2394.1         .00000      SIG1,SIG2,SIG3=  14781.          .13383-008    -2284.6
    S.I.=  17046.        SIGE=  16026.
TOP EP=    .000506   -.000247   -.000180   -.000112  EPPL=   .000000   .000000   .000000   .000000   NUE=       .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000550
MID EP=    .000515   -.000233   -.000194   -.000121  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000553
BOT EP=    .000522   -.000219   -.000207   -.000130  EPPL=   .000000   .000000   .000000   .000000   NUEO=      .300
    EPOR=  .000000   .000000   .000000   .000000   EPCR=   .000000   .000000   .000000   .000000   EPEO=   .000556
SIGEPL(TOP,MID,BOT)=  15849.3        15829.7        16028.2

EL=   54  NODES=   37   21   38      MAT=  2  AREA=  4.92      FBOT,FMID,FTOP=   .000          .000          .000          PL TRI SHELL   48
P1,P2=    .0000         .0000        XC,YC,ZC=  21.3        -7.99        3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0
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SARGENT & LUNDY

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TOP SX,SY,SXY,S2=  1582.5        8845.2        7279.6        .00000      SIG1,SIG2,SIG3=  13343          .12791-006 -2935.7
   S.I.=  18278        SIGE=  15028
MID SX,SY,SXY,S2=  831.43        8766.9        7375.0        .00000      SIG1,SIG2,SIG3=  13200          .13123-006 -3501.8
   S.I.=  18702        SIGE=  15255
BOT SX,SY,SXY,S2=  300.35        8688.5        7470.3        .00000      SIG1,SIG2,SIG3=  13082          .13483-006 -4072.7
   S.I.=  17134        SIGE=  15504
TOP EP=   -.000038   .000291   .000857  -.000108  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000521
MID EP=   -.000058   .000294   .000865  -.000101  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000529
BOT EP=   -.000080   .000298   .000874  -.000094  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000538
SIGEPL(TOP,MID,BOT)=  15027.8        15255.5        15504.5

EL=   55  NODES=   21   22   38      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=  .000          .000          .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  23.0       -7.99        3.78       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=  14254          -436.74       -12439          .00000      SIG1,SIG2,SIG3=  21355          .22701-006 -7637.5
   S.I.=  28893        SIGE=  25958
MID SX,SY,SXY,S2=  14549          -261.89       -12727          .00000      SIG1,SIG2,SIG3=  21868          .23139-006 -7581.2
   S.I.=  29450        SIGE=  26486
BOT SX,SY,SXY,S2=  14844          -87.043       -13015          .00000      SIG1,SIG2,SIG3=  22382          .23578-006 -7625.5
   S.I.=  30008        SIGE=  27015
TOP EP=    .000499   -.000164   -.001122   -.000144  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000901
MID EP=    .000507   -.000161   -.001148   -.000149  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000918
BOT EP=    .000516   -.000158   -.001174   -.000154  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000937
SIGEPL(TOP,MID,BOT)=  25958.1        26485.6        27014.8

EL=   56  NODES=   38   22   23      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=  .000          .000          .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  26.2       -7.88        3.78       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=  -483.71          12244          8885.5        .00000      SIG1,SIG2,SIG3=  16848          .16920-006 -4887.1
   S.I.=  21535        SIGE=  19555
MID SX,SY,SXY,S2=  -1182.3          11473          9168.5        .00000      SIG1,SIG2,SIG3=  16286          .17506-006 -5894.6
   S.I.=  22280        SIGE=  19970
BOT SX,SY,SXY,S2=  -1880.9          10703          9451.4        .00000      SIG1,SIG2,SIG3=  15932          .18105-006 -7110.3
   S.I.=  23042        SIGE=  20437
TOP EP=   -.000144   .000430   .000783  -.000122  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000678
MID EP=   -.000160   .000410   .000827  -.000107  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000693
BOT EP=   -.000177   .000391   .000871  -.000092  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000709
SIGEPL(TOP,MID,BOT)=  19554.9        19969.6        20436.8

EL=   57  NODES=   38   23   39      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=  .000          .000          .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  27.9       -7.87        3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=  14562          -11233        -7738.3        .00000      SIG1,SIG2,SIG3=  18705          .23635-006 -13378
   S.I.=  30081        SIGE=  26104
MID SX,SY,SXY,S2=  14482          -11094        -8010.9        .00000      SIG1,SIG2,SIG3=  18784          .23713-006 -13386
   S.I.=  30181        SIGE=  26192
BOT SX,SY,SXY,S2=  14403          -10956        -8283.6        .00000      SIG1,SIG2,SIG3=  18869          .23800-006 -13422
   S.I.=  30291        SIGE=  26289
TOP EP=    .000522   -.000541   -.000698   -.000035  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000906
MID EP=    .000518   -.000536   -.000723   -.000035  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000909
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SARGENT & LUNDY

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BOT EP=    .000514   -.000530   -.000747   -.000036  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000912
SIGEPL(TOP,MID,BOT)=  26104.2        26181.9        26289.3

EL=   58  NODES=   39   23   40      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=  .000          .000          .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  29.5       -6.19        3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=  -2010.4          3912.5        -4216.5        .00000      SIG1,SIG2,SIG3=  8103.7          .80970-007 -4201.6
   S.I.=  10305        SIGE=  8875.1
MID SX,SY,SXY,S2=  -2361.6          3604.4        -4155.2        .00000      SIG1,SIG2,SIG3=  8736.5          .80380-007 -4483.7
   S.I.=  10230        SIGE=  8881.4
BOT SX,SY,SXY,S2=  -2712.8          3296.2        -4093.9        .00000      SIG1,SIG2,SIG3=  9369.4          .79788-007 -4766.5
   S.I.=  10156        SIGE=  8900.4
TOP EP=   -.000110   .000157   .000380  -.000020  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000311
MID EP=   -.000119   .000150   .000375  -.000013  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000305
BOT EP=   -.000128   .000143   .000369  -.000006  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000305
SIGEPL(TOP,MID,BOT)=  8875.13        8881.37        8900.41

EL=   59  NODES=   23   24   40      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=  .000          .000          .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  29.5       -4.41        3.78       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=  9887.7          -894.86       -1263.8        .00000      SIG1,SIG2,SIG3=  9839.3          .83960-007 -846.48
   S.I.=  10886        SIGE=  10289
MID SX,SY,SXY,S2=  9544.0          -832.28       -1430.3        .00000      SIG1,SIG2,SIG3=  9737.5          .84570-007 -1025.8
   S.I.=  10783        SIGE=  10289
BOT SX,SY,SXY,S2=  9400.3          -869.67       -1596.9        .00000      SIG1,SIG2,SIG3=  9640.7          .85258-007 -1210.0
   S.I.=  10851        SIGE=  10289
TOP EP=    .000343   -.000125   -.000114   -.000094  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000357
MID EP=    .000340   -.000128   -.000129   -.000081  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000357
BOT EP=    .000336   -.000131   -.000144   -.000068  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000357
SIGEPL(TOP,MID,BOT)=  10288.7        10288.9        10299.1

EL=   60  NODES=   40   24   25      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=  .000          .000          .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  28.5       -.854        3.78       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=  -1570.2          6477.3        -1851.7        .00000      SIG1,SIG2,SIG3=  6883.0          .69605-007 -1876.8
   S.I.=  8858.8        SIGE=  8054.7
MID SX,SY,SXY,S2=  -1798.1          6324.8        -1842.2        .00000      SIG1,SIG2,SIG3=  6644.2          .68842-007 -2117.5
   S.I.=  8761.7        SIGE=  7916.3
BOT SX,SY,SXY,S2=  -2025.9          6172.2        -1832.6        .00000      SIG1,SIG2,SIG3=  6415.4          .68238-007 -2269.1
   S.I.=  8684.5        SIGE=  7801.5
TOP EP=   -.000122   .000241   .000167  -.000051  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000279
MID EP=   -.000128   .000238   .000148  -.000047  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000278
BOT EP=   -.000135   .000235   .000129  -.000043  EPPL=  .000000   .000000   .000000   .000000  NUE0=       .300
   EPSR=  .000000   .000000   .000000   .000000  EPCR=  .000000   .000000   .000000   .000000  EPE0=    .000271
SIGEPL(TOP,MID,BOT)=  .054.2        7918.25        7801.49

EL=   61  NODES=   40   25   41      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=  .000          .000          .000          PL TRI SHELL   48
P1,P2=   .0000        .0000        XC,YC,ZC=  28.5        .926        3.11       TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,S2=  4073.7          -114.04       -729.33        .00000      SIG1,SIG2,SIG3=  4197.0          .34842-007 -237.43
   S.I.=  4434.5        SIGE=  4320.7
MID SX,SY,SXY,S2=  4190.0          103.51        -812.80        .00000      SIG1,SIG2,SIG3=  4345.7          .34585-007 -83.218
   S.I.=  4398.0        SIGE=  4372.1
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SARGENT & LUNDY

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BOT SX,SY,SXY,SZ=  1305.3        321.07       -886.28        .00000      SIG1,SIG2,SIG3=  4488.6        128.78       -.17187-007
    S.I.=  4488.6          SIGE=  4435.7
TOP EP=      .000143  -.000048  -.000086  -.000041  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000150
MID EP=      .000144  -.000040  -.000073  -.000045  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000152
BOT EP=      .000146  -.000034  -.000081  -.000048  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000154
SIGEPL(TOP,MID,BOT)=  4320.58       4372.08       4435.65

EL=    62  NODES=    41    25    42      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=    .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000        XC,YC,ZC=  28.5         4.48         3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  551.96        1242.6        1031.5        .00000      SIG1,SIG2,SIG3=  1985.0        .17084-007  -190.49
    S.I.=  2175.5          SIGE=  2068.8
MID SX,SY,SXY,SZ=  578.07        1272.5        1048.9        .00000      SIG1,SIG2,SIG3=  2030.2        .17362-007  -179.59
    S.I.=  2209.8          SIGE=  2125.7
BOT SX,SY,SXY,SZ=  604.21        1302.4        1066.3        .00000      SIG1,SIG2,SIG3=  2075.3        .17631-007  -168.71
    S.I.=  2244.0          SIGE=  2184.6
TOP EP=      .000008   .000037   .000053  -.000018  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000072
MID EP=      .000007   .000038   .000055  -.000019  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000074
BOT EP=      .000007   .000038   .000056  -.000020  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000075
SIGEPL(TOP,MID,BOT)=  2086.62       2125.66       2164.58

EL=    63  NODES=    25    26    42      MAT=  2  AREA=  5.33       FBOT,FMID,FTOP=    .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000        XC,YC,ZC=  29.5         5.26         3.78        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  1731.8       -394.30       -1670.2        .00000      SIG1,SIG2,SIG3=  2848.6        .31111-007  -1311.0
    S.I.=  3559.6          SIGE=  3493.7
MID SX,SY,SXY,SZ=  1774.9       -358.84       -1695.7        .00000      SIG1,SIG2,SIG3=  2711.5        .31483-007  -1295.4
    S.I.=  4006.9          SIGE=  3541.5
BOT SX,SY,SXY,SZ=  1818.0       -323.39       -1721.3        .00000      SIG1,SIG2,SIG3=  2774.4        .31855-007  -1279.8
    S.I.=  4054.2          SIGE=  3589.7
TOP EP=      .000064  -.000032  -.000151  -.000014  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000121
MID EP=      .000065  -.000031  -.000153  -.000015  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000123
BOT EP=      .000066  -.000030  -.000155  -.000016  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000125
SIGEPL(TOP,MID,BOT)=  3483.71       3541.54       3589.72

EL=    64  NODES=    42    26    27      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=    .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000        XC,YC,ZC=  27.9         5.04         3.78        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -813.31        741.06       -899.15        .00000      SIG1,SIG2,SIG3=  1270.9        .18987-007  -1143.1
    S.I.=  2414.0          SIGE=  2091.6
MID SX,SY,SXY,SZ=  -686.54        875.75       -1007.2        .00000      SIG1,SIG2,SIG3=  1210.0        .19115-007  -1222.8
    S.I.=  2432.9          SIGE=  2106.8
BOT SX,SY,SXY,SZ=  -763.78        810.44       -1015.2        .00000      SIG1,SIG2,SIG3=  1149.2        .19284-007  -1302.5
    S.I.=  2451.7          SIGE=  2124.6
TOP EP=    -.000029   .000032   .000030  -.000001  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000073
MID EP=    -.000031   .000031   .000091   .000000  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000073
BOT EP=    -.000033   .000029   .000082   .000002  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000074
SIGEPL(TOP,MID,BOT)=  2091.58       2106.84       2124.83
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SARGENT & LUNDY

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EL=    65  NODES=    42    27    43      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=    .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000        XC,YC,ZC=  28.2         5.04         3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  -69.465        496.93        495.80        .00000      SIG1,SIG2,SIG3=  778.74        .80515-008  -372.27
    S.I.=  1152.0          SIGE=  1018.3
MID SX,SY,SXY,SZ=  -145.68        459.18        538.99        .00000      SIG1,SIG2,SIG3=  774.79        .87121-008  -481.29
    S.I.=  1238.1          SIGE=  1061.9
BOT SX,SY,SXY,SZ=  -201.89        421.43        582.18        .00000      SIG1,SIG2,SIG3=  770.12        .10377-007  -550.58
    S.I.=  1320.7          SIGE=  1149.0
TOP EP=    -.000008   .000018   .000048  -.000004  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000035
MID EP=    -.000010   .000017   .000048  -.000003  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000038
BOT EP=    -.000011   .000017   .000053  -.000002  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000040
SIGEPL(TOP,MID,BOT)=  1018.26       1081.89       1149.02

EL=    66  NODES=    43    27    44      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=    .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000        XC,YC,ZC=  23.0         5.04         3.11        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  167.97        584.89       -671.27        .00000      SIG1,SIG2,SIG3=  1085.7        .11069-007  -323.03
    S.I.=  1408.7          SIGE=  1278.2
MID SX,SY,SXY,SZ=  92.382        634.12       -721.58        .00000      SIG1,SIG2,SIG3=  1134.0        .12112-007  -407.48
    S.I.=  1541.5          SIGE=  1383.5
BOT SX,SY,SXY,SZ=  16.754        672.58       -771.88        .00000      SIG1,SIG2,SIG3=  1184.0        .13181-007  -483.86
    S.I.=  1677.8          SIGE=  1493.3
TOP EP=      .000000   .000018  -.000061  -.000008  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000044
MID EP=    -.000003   .000021  -.000065  -.000008  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000048
BOT EP=    -.000006   .000023  -.000070  -.000007  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000052
SIGEPL(TOP,MID,BOT)=  1278.20       1383.49       1493.31

EL=    67  NODES=    27    28    44      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=    .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000        XC,YC,ZC=  21.2         5.04         3.78        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  844.12        182.83        345.06        .00000      SIG1,SIG2,SIG3=  1074.7        32.342       -.40850-008
    S.I.=  1074.7          SIGE=  1058.9
MID SX,SY,SXY,SZ=  1000.3        112.05        395.00        .00000      SIG1,SIG2,SIG3=  1150.8        .83403-008  -38.184
    S.I.=  1186.8          SIGE=  1170.1
BOT SX,SY,SXY,SZ=  1058.6        61.178        444.93        .00000      SIG1,SIG2,SIG3=  1228.4        .10481-007  -108.72
    S.I.=  1335.2          SIGE=  1284.3
TOP EP=      .000031  -.000034   .000031  -.000012  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000037
MID EP=      .000034  -.000007   .000036  -.000012  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000041
BOT EP=      .000036  -.000009   .000040  -.000012  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000045
SIGEPL(TOP,MID,BOT)=  1058.91       1170.13       1284.25

EL=    68  NODES=    44    28    29      MAT=  2  AREA=  4.92       FBOT,FMID,FTOP=    .000          .000          .000          PL TRI SHELL    48
P1,P2=    .0000         .0000        XC,YC,ZC=  18.0         5.04         3.78        TEMPS=  150.0  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ=  281.18        892.35       -491.18        .00000      SIG1,SIG2,SIG3=  1239.8        14.681       -.48132-008
    S.I.=  1239.8          SIGE=  1232.8
MID SX,SY,SXY,SZ=  101.63        965.60       -592.14        .00000      SIG1,SIG2,SIG3=  1246.6        .11818-007  -189.38
    S.I.=  1485.8          SIGE=  1377.1
BOT SX,SY,SXY,SZ=  -57.827        837.88       -693.12        .00000      SIG1,SIG2,SIG3=  1283.6        .13411-007  -413.44
    S.I.=  1706.8          SIGE=  1542.2
TOP EP=    -.000001   .000032  -.000044  -.000013  EPPL=  .000000  .000000  .000000  .000000  NUEO=       .300
    EPOR=    .000000   .000000   .000000   .000000  EPCR=  .000000  .000000  .000000  .000000  EPEO=    .000043
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SARGENT & LUNDY

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MID EPS:  -.000007   .000032  -.000053  -.000011  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000048
BOT EPS:  -.000012   .000033  -.000083  -.000009  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000054
SIGEPL(TOP,MID,BOT):  1232.57       1377.13       1542.24

EL:   69  NODES:   44   29   45   MAT:  2  AREA:  4.92      FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL  48
P1,P2:   .0000        .0000       XC,YC,ZC:  15.4        8.03        3.11       TEMPS:  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ:  511.85         572.86          324.55          .00000      SIG1,SIG2,SIG3:  868.64        215.88       -.25544-008
   S.I.:  868.64       SIGE:  783.34
MID SX,SY,SXY,SZ:  350.13         372.73          545.70          .00000      SIG1,SIG2,SIG3:  907.25        .85772-008  -184.39
   S.I.:  1091.6       SIGE:  1012.1
BOT SX,SY,SXY,SZ:  188.40         172.81          785.44          .00000      SIG1,SIG2,SIG3:  947.08        .12045-007  -585.88
   S.I.:  1533.0       SIGE:  1338.8
TOP EPS:  .000012    .000015   .000028  -.000011  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000027
MID EPS:  .000004    .000005   .000045  -.000008  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000035
BOT EPS:  .000005    .000004   .000059  -.000004  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000046
SIGEPL(TOP,MID,BOT):  783.342       1012.12       1339.81

EL:   70  NODES:   45   29   46   MAT:  2  AREA:  4.92      FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL  48
P1,P2:   .0000        .0000       XC,YC,ZC:  13.1        8.03        3.11       TEMPS:  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ:  295.45         781.56         -183.99          .00000      SIG1,SIG2,SIG3:  849.48        227.53       -.24434-008
   S.I.:  849.48       SIGE:  781.65
MID SX,SY,SXY,SZ:  8.1090         792.54         -333.31          .00000      SIG1,SIG2,SIG3:  914.88        .81009-008  -116.14
   S.I.:  1031.0       SIGE:  878.14
BOT SX,SY,SXY,SZ: -283.24         803.72         -472.62          .00000      SIG1,SIG2,SIG3:  980.48        .11316-007  -459.99
   S.I.:  1440.5       SIGE:  1274.3
TOP EPS:  .000002    .000024  -.000017  -.000011  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000028
MID EPS:  -.000008   .000027  -.000030  -.000008  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000034
BOT EPS:  -.000018   .000031  -.000043  -.000005  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000044
SIGEPL(TOP,MID,BOT):  761.651       978.137       1274.34

EL:   71  NODES:   29   30   46   MAT:  2  AREA:  4.92      FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL  48
P1,P2:   .0000        .0000       XC,YC,ZC:  11.5        8.03        3.78       TEMPS:  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ:  1163.0         886.75         -143.27          .00000      SIG1,SIG2,SIG3:  1202.8        646.87       -.21435-008
   S.I.:  1202.8       SIGE:  1042.5
MID SX,SY,SXY,SZ:  634.78         102.36          217.82          .00000      SIG1,SIG2,SIG3:  988.33        48.802       -.38510-008
   S.I.:  988.33       SIGE:  864.86
BOT SX,SY,SXY,SZ:  706.56        -482.03          578.91          .00000      SIG1,SIG2,SIG3:  941.92        .13038-007  -717.39
   S.I.:  1659.3       SIGE:  1441.4
TOP EPS:  .000033    .000012  -.000013  -.000015  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000036
MID EPS:  .000031   -.000008   .000020  -.000011  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000033
BOT EPS:  .000030   -.000024   .000052  -.000002  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000050
SIGEPL(TOP,MID,BOT):  1042.63       984.859       1441.39

EL:   72  NODES:   46   30   31   MAT:  2  AREA:  4.92      FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL  48
P1,P2:   .0000        .0000       XC,YC,ZC:  8.20        8.03        3.78       TEMPS:  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ:  487.31         804.45          7.3011          .00000      SIG1,SIG2,SIG3:  804.58        487.18       -.16398-008
   S.I.:  804.58       SIGE:  784.17
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MID SX,SY,SXY,SZ:  93.497         805.26         -329.55          .00000      SIG1,SIG2,SIG3:  1022.2        .82158-008  -23.442
   S.I.:  1045.8       SIGE:  1034.1
BOT SX,SY,SXY,SZ: -300.32         806.06         -665.40          .00000      SIG1,SIG2,SIG3:  1201.7        .14125-007  -595.87
   S.I.:  1787.7       SIGE:  1588.0
TOP EPS:  .000007    .000026   .000001  -.000014  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000300   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000027
MID EPS:  -.000006   .000030  -.000030  -.000010  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000038
BOT EPS:  -.000020   .000035  -.000060  -.000006  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000055
SIGEPL(TOP,MID,BOT):  784.168       1034.12       1588.03

EL:   73  NODES:   48   31   47   MAT:  2  AREA:  4.92      FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL  48
P1,P2:   .0000        .0000       XC,YC,ZC:  6.56        8.02        3.11       TEMPS:  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ:  1236.0         1554.5         -142.16          .00000      SIG1,SIG2,SIG3:  1808.7        1181.7       -.18775-008
   S.I.:  1808.7       SIGE:  1443.4
MID SX,SY,SXY,SZ:  500.70         241.73          466.67          .00000      SIG1,SIG2,SIG3:  855.33        .78115-008  -113.40
   S.I.:  986.74       SIGE:  817.31
BOT SX,SY,SXY,SZ: -234.56        -1072.0          1075.6          .00000      SIG1,SIG2,SIG3:  500.88        .18137-007  -1807.5
   S.I.:  2308.3       SIGE:  2103.1
TOP EPS:  .000027    .000041   .000013  -.000028  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000050
MID EPS:  .000015    .000003   .000042  -.000008  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000033
BOT EPS:  .000003   -.000035   .000087   .000014  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000073
SIGEPL(TOP,MID,BOT):  1443.40       917.309       2103.13

EL:   74  NODES:   47   31   48   MAT:  2  AREA:  4.92      FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL  48
P1,P2:   .0000        .0000       XC,YC,ZC:  3.28        8.02        3.11       TEMPS:  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ:  3433.3         1891.8         -219.58          .00000      SIG1,SIG2,SIG3:  3464.0        1861.2       -.82986-008
   S.I.:  3464.0       SIGE:  3002.7
MID SX,SY,SXY,SZ: -85.742         728.45         -126.69          .00000      SIG1,SIG2,SIG3:  748.15        .65575-008  -85.436
   S.I.:  834.58       SIGE:  795.32
BOT SX,SY,SXY,SZ: -3564.8        -433.00         -33.786          .00006      SIG1,SIG2,SIG3:  .19480-014  -432.84       -3565.2
   S.I.:  3565.2       SIGE:  3369.8
TOP EPS:  .000089    .000030   .000020  -.000055  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000104
MID EPS:  -.000010   .000028  -.000011  -.000007  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000028
BOT EPS:  -.000118   .000022  -.000063   .000042  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000117
SIGEPL(TOP,MID,BOT):  3002.71       795.320       3369.77

EL:   75  NODES:   31   32   48   MAT:  2  AREA:  4.92      FBOT,FMID,FTOP:   .000          .000          .000          PL TRI SHELL  48
P1,P2:   .0000        .0000       XC,YC,ZC:  1.64        8.02        3.78       TEMPS:  150.0  150.0  150.0  150.0  150.0
TOP SX,SY,SXY,SZ:  3431.6         3288.7         -337.61          .00000      SIG1,SIG2,SIG3:  3415.5        2315.8       -.43200-008
   S.I.:  3415.5       SIGE:  3015.8
MID SX,SY,SXY,SZ:  884.83         206.69          38.938          .00000      SIG1,SIG2,SIG3:  887.10        198.42       -.28370-008
   S.I.:  887.10       SIGE:  786.89
BOT SX,SY,SXY,SZ: -701.97        -2188.3          415.28          .00000      SIG1,SIG2,SIG3:  .00000       -828.04       -2974.3
   S.I.:  2974.3       SIGE:  2715.9
TOP EPS:  .000050    .000088   .000030  -.000080  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000105
MID EPS:  .000028    .000002   .000004  -.000011  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000027
BOT EPS:  .000006   -.000083   .000037   .000037  EPPL:   .000000   .000000   .000000   .000000  NUEO:      .300
   EPSR:   .000000   .000000   .000000   .000000  EPCR:   .000000   .000000   .000000   .000000  EPEO:   .000084
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SIGEPL(TOP,MID,BOT)= 3019.76 786.885 2715.90

EL= 76 NODES= 33 34 MAT= 1 PRESSURES(I,J)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	8168.7									
	2	150.00	8547.6									
	3	150.00	17778									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	13842.									
	2	150.00	9988.5									
	3	150.00	7222.8									

EL= 77 NODES= 34 35 MAT= 1 PRESSURES(I,J)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	8847.7									
	2	150.00	11147.									
	3	150.00	6444.7									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	11680.									
	2	150.00	10639.									
	3	150.00	4649.3									

EL= 78 NODES= 35 36 MAT= 1 PRESSURES(I,J)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	8184.6									
	2	150.00	10770.									
	3	150.00	5855.9									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	12329.									
	2	150.00	9721.4									
	3	150.00	3808.9									

EL= 79 NODES= 36 37 MAT= 1 PRESSURES(I,J)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	8841.0									
	2	150.00	9077.8									
	3	150.00	7061.5									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	11039.									
	2	150.00	8755.7									
	3	150.00	5299.8									

EL= 80 NODES= 37 38 MAT= 1 PRESSURES(I,J)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	1112.7									
	2	150.00	8730.5									
	3	150.00	9757.1									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	15865.									
	2	150.00	4844.3									
	3	150.00	2777.0									

EL= 81 NODES= 38 39 MAT= 1 PRESSURES(I,J)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-8878.6									
	2	150.00	5131.8									
	3	150.00	12957.									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	20533.									
	2	150.00	-3008.9									
	3	150.00	-176.31									

EL= 82 NODES= 39 40 MAT= 1 PRESSURES(I,J)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	8528.6									
	2	150.00	-2599.9									
	3	150.00	4455.2									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	97.943									
	2	150.00	2394.9									
	3	150.00	2095.5									

EL= 83 NODES= 40 41 MAT= 1 PRESSURES(I,J)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	681.74									
	2	150.00	1854.8									
	3	150.00	3168.6									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	4936.9									
	2	150.00	1494.6									
	3	150.00	-388.27									

EL= 84 NODES= 41 42 MAT= 1 PRESSURES(I,J)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-2711.8									
	2	150.00	1678.8									
	3	150.00	2638.6									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	4910.0									
	2	150.00	-144.37									
	3	150.00	-1428.9									

EL= 85 NODES= 42 43 MAT= 1 PRESSURES(I,J)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	614.80									
	2	150.00	-280.88									
	3	150.00	123.14									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-179.84									
	2	150.00	445.03									
	3	150.00	-293.71									

EL= 86 NODES= 43 44 MAT= 1 PRESSURES(I,J)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	899.89									

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         2   150.00     434.41
         3   150.00    -857.63
END J  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00     512.97
         2   150.00     572.66
         3   150.00    -747.21


EL=   87  NODES=   44   45  MAT=  1  PRESSURES(Z,Y)=   .00000        .00000   AVE. TEMP= 150.00        3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00    1184.0
         2   150.00     746.72
         3   150.00   -1484.0
END J  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00     281.37
         2   150.00     835.45
         3   150.00    -756.87


EL=   88  NODES=   45   46  MAT=  1  PRESSURES(Z,Y)=   .00000        .00000   AVE. TEMP= 150.00        3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00    1781.6
         2   150.00     883.51
         3   150.00   -1547.4
END J  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00    -189.98
         2   150.00    1048.2
         3   150.00     24.573


EL=   89  NODES=   46   47  MAT=  1  PRESSURES(Z,Y)=   .00000        .00000   AVE. TEMP= 150.00        3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00    4588.0
         2   150.00    1707.1
         3   150.00   -3661.7
END J  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00   -2881.1
         2   150.00     920.09
         3   150.00    5462.5


EL=   90  NODES=   47   48  MAT=  1  PRESSURES(Z,Y)=   .00000        .00000   AVE. TEMP= 150.00        3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00    3454.5
         2   150.00     345.23
         3   150.00    4114.3
END J  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00   -1856.2
         2   150.00    -388.30
         3   150.00    7088.


EL=   91  NODES=   48   49  MAT=  1  PRESSURES(Z,Y)=   .00000        .00000   AVE. TEMP= 150.00        3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00    1238.5
         2   150.00    -719.60
         3   150.00    -719.60
END J  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
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SARGENT & LUNDY

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         1   150.00   -1120.9
         2   150.00     85.678
         3   150.00     86.878


EL=   92  NODES=   49   50  MAT=  1  PRESSURES(Z,Y)=   .00000        .00000   AVE. TEMP= 150.00        3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00     451.69
         2   150.00    -129.86
         3   150.00    -128.86
END J  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00    -603.35
         2   150.00     221.82
         3   150.00     221.82


EL=   93  NODES=   50   33  MAT=  1  PRESSURES(Z,Y)=   .00000        .00000   AVE. TEMP= 150.00        3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00    1303.2
         2   150.00     -14.523
         3   150.00     -14.523
END J  PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
         1   150.00    -812.83
         2   150.00     624.16
         3   150.00     624.16


EL=   94  NODES=   33   34   51   51      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                        QUAD SHELL  83
XC,YC,ZC=  1.230      -6.001       .3309-002  PRESS=   .00000       .00000
MX,MY,MXY=   .84839-001    .13730      -1.2175
TOP SX,SY,SXY,SZ=  10561.      1778.8      -953.54       .00000     SIG1,SIG2,SIG3=  10563.      1676.6      -.35304-007
    S.I.=   10563.      SIGE=  9931.5
MID SX,SY,SXY,SZ=  10519.      1711.6      -356.36       .00000     SIG1,SIG2,SIG3=  10533.      1887.2      -.34714-007
    S.I.=   10533.      SIGE=  9795.8
BOT SX,SY,SXY,SZ=  10477.      1644.3       240.82       .00000     SIG1,SIG2,SIG3=  10484.      1837.7      -.34753-007
    S.I.=   10484.      SIGE=  9768.5

EL=   95  NODES=   51   34   52   52      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                        QUAD SHELL  83
XC,YC,ZC=  3.691      -7.998       -1.217     PRESS=   .00000       .00000
MX,MY,MXY=    .88755      -1.8820       .27374
TOP SX,SY,SX-,SZ=  6580.2      3536.2      3678.1       .00000     SIG1,SIG2,SIG3=  9076.7      1149.7      -.31142-007
    S.I.=   9076.7      SIGE=  8560.0
MID SX,SY,SXY,SZ=  5184.8      4559.3      3543.0       .00000     SIG1,SIG2,SIG3=  8889.6      1724.8      -.28541-007
    S.I.=   8889.6      SIGE=  4263.4
BOT SX,SY,SXY,SZ=  5719.5      5462.5      3409.5       .00000     SIG1,SIG2,SIG3=  9012.8      2189.4      -.26805-007
    S.I.=   9012.8      SIGE=  8141.7

EL=   96  NODES=   34   53   52   52      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                        QUAD SHELL  83
XC,YC,ZC=  6.151      -7.995       -1.217     PRESS=   .00000       .00000
MX,MY,MXY=   -.50892       1.3063      -.18385
TOP SX,SY,SXY,SZ=  3866.3      5353.6      -3516.0       .00000     SIG1,SIG2,SIG3=  9073.8      1546.0      -.28574-007
    S.I.=   9073.8      SIGE=  8408.2
MID SX,SY,SXY,SZ=  4216.0      5012.8      -3425.8       .00000     SIG1,SIG2,SIG3=  8656.1      1572.7      -.27827-007
    S.I.=   8656.1      SIGE=  7986.7
BOT SX,SY,SXY,SZ=  4488.6      5372.1      -3335.6       .00000     SIG1,SIG2,SIG3=  8285.1      1552.8      -.26449-007
    S.I.=   8285.1      SIGE=  7626.3

EL=   97  NODES=   34   35   53   53      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                        QUAD SHELL  83
XC,YC,ZC=  8.811      -7.997       .3423-002  PRESS=   .00000       .00000
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SARGENT & LUNDY

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MX,MY,MXY=  -.89376          .52488          -.52787
TOP SX,SY,SXY,SZ=  10144.          1075.2          -1469.9          .00000      SIG1,SIG2,SIG3=  .0377.      842.96      -.37453-007
    S.I.=  10377.          SIGE=  9981.8
MID SX,SY,SXY,SZ=  10465.          768.74          -1210.9          .00000      SIG1,SIG2,SIG3=  10833.      620.09      -.39337-007
    S.I.=  10833.          SIGE=  10337.
BOT SX,SY,SXY,SZ=  10825.          462.23          -951.85          .00000      SIG1,SIG2,SIG3=  10912.      375.50      -.41382-007
    S.I.=  10912.          SIGE=  10729.

EL=  98  NODES=  35   36   53   52      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  11.07      -7.986          .3501-002  PRESS=  .00000          .00000
MX,MY,MXY=  -.58375          .36112          -.22594
TOP SX,SY,SXY,SZ=  10201.          946.52          -2586.0          .00000      SIG1,SIG2,SIG3=  10875.      271.97      -.41856-007
    S.I.=  10875.          SIGE=  10742.
MID SX,SY,SXY,SZ=  10487.          769.38          -2477.1          .00000      SIG1,SIG2,SIG3=  11082.      174.38      -.42852-007
    S.I.=  11082.          SIGE=  10995.
BOT SX,SY,SXY,SZ=  10774.          592.26          -2366.3          .00000      SIG1,SIG2,SIG3=  11297.      69.162      -.44108-007
    S.I.=  11297.          SIGE=  11262.

EL=  99  NODES=  53   36   54   54      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  13.53      -7.986          -1.217     PRESS=  .00000          .00000
MX,MY,MXY=  .27961          .81389          -.40854
TOP SX,SY,SXY,SZ=  8040.7          2456.9          2357.9          .00000      SIG1,SIG2,SIG3=  8903.2      1584.5      -.28713-007
    S.I.=  8903.2          SIGE=  8222.7
MID SX,SY,SXY,SZ=  7854.5          2155.9          2556.3          .00000      SIG1,SIG2,SIG3=  8834.5      1175.9      -.30087-007
    S.I.=  8834.5          SIGE=  8309.2
BOT SX,SY,SXY,SZ=  7686.3          1854.9          2756.7          .00000      SIG1,SIG2,SIG3=  8769.0      754.19      -.31487-007
    S.I.=  8769.0          SIGE=  8417.3

EL=  100  NODES=  36   55   54   54      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  15.99      -7.985          -1.217     PRESS=  .00000          .00000
MX,MY,MXY=  .58468          -.55148-001          .31375
TOP SX,SY,SXY,SZ=  1474.1          6959.5          -1916.5          .00000      SIG1,SIG2,SIG3=  7562.8      870.83      -.26290-007
    S.I.=  7562.8          SIGE=  7167.1
MID SX,SY,SXY,SZ=  1050.0          8986.6          -2070.4          .00000      SIG1,SIG2,SIG3=  7637.3      399.22      -.28435-007
    S.I.=  7637.3          SIGE=  7445.7
BOT SX,SY,SXY,SZ=  625.83          7013.8          -2224.3          .00000      SIG1,SIG2,SIG3=  7711.8      .61162-007  -72.385
    S.I.=  7744.2          SIGE=  7748.3

EL=  101  NODES=  38   37   55   55      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  18.45      -7.986          .3610-002  PRESS=  .00000          .00000
MX,MY,MXY=  -.20260          .27744          .82342
TOP SX,SY,SXY,SZ=  10058.          1196.3          -3553.6          .00000      SIG1,SIG2,SIG3=  11307.      .69256-007  -52.630
    S.I.=  11360.          SIGE=  11334.
MID SX,SY,SXY,SZ=  10158.          1080.2          -3859.4          .00000      SIG1,SIG2,SIG3=  11574.      .93741-007  -356.42
    S.I.=  11931.          SIGE=  11757.
BOT SX,SY,SXY,SZ=  10257.          924.13          -4165.1          .00000      SIG1,SIG2,SIG3=  11845.      .58282-007  -684.35
    S.I.=  12510.          SIGE=  12191.

EL=  102  NODES=  37   38   55   55      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  20.91      -7.980          .3492-002  PRESS=  .00000          .00000
MX,MY,MXY=  .21908          .55320          .76302
TOP SX,SY,SXY,SZ=  8760.5          886.16          -3542.5          .00000      SIG1,SIG2,SIG3=  10138.      .83355-007  -471.08
    S.I.=  10609.          SIGE=  10381.
MID SX,SY,SXY,SZ=  8673.0          814.82          -3912.9          .00000      SIG1,SIG2,SIG3=  10260.      .88258-007  -872.50
    S.I.=  11233.          SIGE=  10780.
BOT SX,SY,SXY,SZ=  8585.6          743.47          -4282.2          .00000      SIG1,SIG2,SIG3=  10381.      .93283-007  -1481.7
    S.I.=  11872.          SIGE=  11205.
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EL=  103  NODES=  55   38   56   56      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  23.37      -7.974          -1.217     PRESS=  .00000          .00000
MX,MY,MXY=  -.28926          1.4043          -.22306
TOP SX,SY,SXY,SZ=  7441.5          -1939.9          1519.1          .00000      SIG1,SIG2,SIG3=  7681.4      .77480-007  -2170.7
    S.I.=  9681.1          SIGE=  8972.1
MID SX,SY,SXY,SZ=  7588.3          -2628.7          1828.5          .00000      SIG1,SIG2,SIG3=  7841.8      .84257-007  -2882.0
    S.I.=  10724.          SIGE=  9812.3
BOT SX,SY,SXY,SZ=  7735.1          -3317.5          1737.9          .00000      SIG1,SIG2,SIG3=  8001.9      .91035-007  -3564.3
    S.I.=  11588.          SIGE=  10274.

EL=  104  NODES=  38   57   56   56      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  25.83      -7.972          -1.218     PRESS=  .00000          .00000
MX,MY,MXY=  1.1772          -.25858          -.11585
TOP SX,SY,SXY,SZ=  -2885.6          3902.7          -573.50          .00000      SIG1,SIG2,SIG3=  3950.9      .53940-007  -2814.1
    S.I.=  6865.0          SIGE=  5867.8
MID SX,SY,SXY,SZ=  -3443.3          4028.5          -516.68          .00000      SIG1,SIG2,SIG3=  4084.1      .59268-007  -3478.8
    S.I.=  7542.8          SIGE=  6538.5
BOT SX,SY,SXY,SZ=  -4020.7          4154.4          -459.86          .00000      SIG1,SIG2,SIG3=  4180.2      .64638-007  -4048.9
    S.I.=  8226.7          SIGE=  7124.6

EL=  105  NODES=  38   39   57   57      MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  26.29      -7.971          .2108-002  PRESS=  .00000          .00000
MX,MY,MXY=  .78170          1.1710          .46848
TOP SX,SY,SXY,SZ=  4729.0          -4377.4          -3218.9          .00000      SIG1,SIG2,SIG3=  5751.9      .87625-007  -5400.3
    S.I.=  11152.          SIGE=  9659.7
MID SX,SY,SXY,SZ=  4340.7          -4851.6          -3445.2          .00000      SIG1,SIG2,SIG3=  5461.0      .90832-007  -6082.1
    S.I.=  11573.          SIGE=  10027.
BOT SX,SY,SXY,SZ=  3952.4          -5326.2          -3670.6          .00000      SIG1,SIG2,SIG3=  5213.0      .94285-007  -6786.8
    S.I.=  12000.          SIGE=  10422.

EL=  106  NODES=  39   40   57   57      MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  29.52      -8.834          .2108-002  PRESS=  .00000          .00000
MX,MY,MXY=  .87120          1.4260          .28199
TOP SX,SY,SXY,SZ=  3154.6          -4750.8          -755.10          .00000          12,SIG3=  3226.1      .63237-007  -4822.3
    S.I.=  8048.4          SIGE=  7015.6
MID SX,SY,SXY,SZ=  2678.3          -5450.2          -893.41          .00000          G2,SIG3=  2775.3      .65382-007  -5547.3
    S.I.=  8322.6          SIGE=  7330.6
BOT SX,SY,SXY,SZ=  2201.9          -6149.7          -1031.7          .00000          SIG  ,SIG2,SIG3=  2327.5      .67583-007  -6275.3
    S.I.=  8602.7          SIGE=  7707.2

EL=  107  NODES=  57   40   58   58      MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  29.52      -3.986          -1.218     PRESS=  .00000          .00000
MX,MY,MXY=  .57814          .57214          -.86291-001
TOP SX,SY,SXY,SZ=  583.58          -905.20          -103.48          .00000      SIG1,SIG2,SIG3=  590.74      .11810-007  -912.36
    S.I.=  1503.1          SIGE=  1311.6
MID SX,SY,SXY,SZ=  299.51          -1185.6          -56.249          .00000      SIG1,SIG2,SIG3=  301.64      .11704-007  -1188.0
    S.I.=  1489.6          SIGE=  1364.0
BOT SX,SY,SXY,SZ=  15.435          -1466.5          -8.9180          .00000      SIG1,SIG2,SIG3=  15.451      .11644-007  -1466.5
    S.I.=  1482.0          SIGE=  1474.3

EL=  108  NODES=  40   59   58   58      MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  29.52      -1.298          -1.217     PRESS=  .00000          .00000
MX,MY,MXY=  .40570          .32846          .11728
TOP SX,SY,SXY,SZ=  868.28          -722.35          -94.978          .00000      SIG1,SIG2,SIG3=  871.81      .12647-007  -726.00
    S.I.=  1586.9          SIGE=  1384.9
MID SX,SY,SXY,SZ=  870.27          -863.95          -122.50          .00000      SIG1,SIG2,SIG3=  878.68      .12383-007  -893.55
    S.I.=  1573.4          SIGE=  1366.8
BOT SX,SY,SXY,SZ=  471.27          -1045.8          -180.03          .00000      SIG1,SIG2,SIG3=  492.35      .12248-007  -1066.8
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    S.I.=   1569.0        SIGE=  1380.3

EL=  109  NODES=    40    41    58    59       MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=  29.52        1.370        .3420-002  PRESS=   .00000        .00000
MX,MY,MXY=   - 28858-001     .22045      .20447
TOP SX,SY,SXY,SZ=  2895.9        447.42       -170.27        .00000      SIG1,SIG2,SIG3=  2908.7       435.54      - 97155-008
    S.I.=   2908.7        SIGE=  2717.2
MID SX,SY,SXY,SZ=  2911.1        339.29       -270.56        .00000      SIG1,SIG2,SIG3=  2939.3       311.13      - 10325-007
    S.I.=   2938.3        SIGE=  2796.7
BOT SX,SY,SXY,SZ=  2925.3        231.16       -370.85        .00000      SIG1,SIG2,SIG3=  2975.5       181.04      - 10978-007
    S.I.=   2875.5        SIGE=  2885.2

EL=  110  NODES=    41    42    59    59       MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=  29.52        4.039        .3489-002  PRESS=   .00000        .00000
MX,MY,MXY=     39813-001     .15214      .10082
TOP SX,SY,SXY,SZ=  1051.3       -149.91       685.79        .00000      SIG1,SIG2,SIG3=  1382.3       .14325-007 -480.82
    S.I.=   1823.2        SIGE=  1642.0
MID SX,SY,SXY,SZ=  1031.7       -224.54       636.34        .00000      SIG1,SIG2,SIG3=  1297.7       .14051-007 -490.54
    S.I.=   1788.3        SIGE=  1600.4
BOT SX,SY,SXY,SZ=  1012.2       -299.16       586.89        .00000      SIG1,SIG2,SIG3=  1236.5       .13828-007 -523.47
    S.I.=   1759.9        SIGE=  1585.3

EL=  111  NODES=    58    42    60    60       MAT=  1  AREA=  13.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=  29.52        6.707       -1.217      PRESS=   .00000        .00000
MX,MY,MXY=   - 73822-001     .50115-002    - 74747-001
TOP SX,SY,SXY,SZ=  -495.28        35.937       156.17        .00000      SIG1,SIG2,SIG3=  78.449       .48419-008 -537.78
    S.I.=   616.24        SIGE=  581.00
MID SX,SY,SXY,SZ=  -459.07        33.479       192.84        .00000      SIG1,SIG2,SIG3=  99.894       .48153-008 -525.59
    S.I.=   625.58        SIGE=  582.06
BOT SX,SY,SXY,SZ=  -422.86        31.021       229.50        .00000      SIG1,SIG2,SIG3=  126.84      - 50719-008 -518.66
    S.I.=   645.52        SIGE=  592.37

EL=  112  NODES=    42    61    60    60       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=  28.39        8.040       -1.217      PRESS=   .00000        .00000
MX,MY,MXY=     18051-001     .88046-001    .51533-001
TOP SX,SY,SXY,SZ=  192.78       -354.97       -198.66        .00000      SIG1,SIG2,SIG3=  257.83       .53258-008 -420.02
    S.I.=   677.84        SIGE=  592.60
MID SX,SY,SXY,SZ=  174.11       -388.63       -224.93        .00000      SIG1,SIG2,SIG3=  252.95       .56620-008 -487.67
    S.I.=   720.52        SIGE=  633.24
BOT SX,SY,SXY,SZ=  155.45       -422.70       -250.21        .00000      SIG1,SIG2,SIG3=  248.69       .60079-008 -515.95
    S.I.=   764.64        SIGE=  676.55

EL=  113  NODES=    42    43    61    61       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=  25.63        8.039        .3424-002  PRESS=   .00000        .00000
MX,MY,MXY=   - 33368-001     .21030      - 85943-002
TOP SX,SY,SXY,SZ=  272.75        9.1560       165.48        .00000      SIG1,SIG2,SIG3=  352.51       .33244-008 -70.800
    S.I.=   423.11        SIGE=  392.60
MID SX,SY,SXY,SZ=  288.13       -93.999       169.70        .00000      SIG1,SIG2,SIG3=  353.49       .40216-008 -158.35
    S.I.=   511.84        SIGE=  453.88
BOT SX,SY,SXY,SZ=  305.51       -197.15       173.91        .00000      SIG1,SIG2,SIG3=  359.81       .48029-008 -251.48
    S.I.=   611.27        SIGE=  532.14

EL=  114  NODES=    43    44    61    61       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=  23.37        8.027        .3461-002  PRESS=   .00000        .00000
MX,MY,MXY=   - 18177      .10686      - 13756
TOP SX,SY,SXY,SZ=  512.76        53.720       226.29        .00000      SIG1,SIG2,SIG3=  605.55       .50648-008 -39.075
    S.I.=   844.63        SIGE=  626.00
MID SX,SY,SXY,SZ=  606.82        1.3058       293.81        .00000      SIG1,SIG2,SIG3=  725.95       .58297-008 -117.82
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SARGENT & LUNDY


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    S.I.=   843.77        SIGE=  781.47
BOT SX,SY,SXY,SZ=  700.88       -51.108       361.34        .00000      SIG1,SIG2,SIG3=  846.35       .81947-008 -186.59
    S.I.=   1043.0        SIGE=  958.88

EL=  115  NODES=    61    44    62    62       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=  20.91        8.036       -1.217      PRESS=   .00000        .00000
MX,MY,MXY=   .16247      .12823      - 17489
TOP SX,SY,SXY,SZ=  37.818        478.00       -13.749        .00000      SIG1,SIG2,SIG3=  478.42       27.487      - 17323-008
    S.I.=   478.42        SIGE=  460.83
MID SX,SY,SXY,SZ=  -41.774        414.61        72.037        .00000      SIG1,SIG2,SIG3=  425.71       .37603-008 -82.875
    S.I.=   478.58        SIGE=  454.46
BOT SX,SY,SXY,SZ=  -121.46        351.22        157.82        .00000      SIG1,SIG2,SIG3=  389.07       .44658-008 -169.32
    S.I.=   568.38        SIGE=  505.46

EL=  116  NODES=    44    63    62    62       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=  18.45        8.033       -1.217      PRESS=   .00000        .00000
MX,MY,MXY=    .19183      - .77546-002    .28858
TOP SX,SY,SXY,SZ=  884.20        88.442       -14.899        .00000      SIG1,SIG2,SIG3=  884.56       83.081      - 24180-008
    S.I.=   884.56        SIGE=  852.77
MID SX,SY,SXY,SZ=  590.20        73.248       -146.84        .00000      SIG1,SIG2,SIG3=  628.90       34.547      - 23350-008
    S.I.=   828.80        SIGE=  813.36
BOT SX,SY,SXY,SZ=  496.21        77.049       -276.38        .00000      SIG1,SIG2,SIG3=  835.08       .54757-008 -61.823
    S.I.=   898.90        SIGE=  868.14

EL=  117  NODES=    44    45    63    63       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=  18.99        8.031        .3485-002  PRESS=   .00000        .00000
MX,MY,MXY=    .65808-001     .83239      - 11156
TOP SX,SY,SXY,SZ=  779.19        439.35       170.22        .00000      SIG1,SIG2,SIG3=  849.79       368.75      - 18888-008
    S.I.=   849.79        SIGE=  738.07
MID SX,SY,SXY,SZ=  747.01        31.055       224.94        .00000      SIG1,SIG2,SIG3=  811.82       .86438-008 -33.753
    S.I.=   845.57        SIGE=  829.21
BOT SX,SY,SXY,SZ=  714.83       -377.24       279.67        .00000      SIG1,SIG2,SIG3=  782.28       .86405-008 -444.69
    S.I.=   1227.0        SIGE=  1075.8

EL=  118  NODES=    45    46    63    63       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=  13.53        8.028        .3451-002  PRESS=   .00000        .00000
MX,MY,MXY=   - 87324-001     .93387      - 26948
TOP SX,SY,SXY,SZ=  757.84        506.68        23.264        .00000      SIG1,SIG2,SIG3=  759.78       504.55      - 10027-008
    S.I.=   759.78        SIGE=  659.69
MID SX,SY,SXY,SZ=  805.38        46.567       155.45        .00000      SIG1,SIG2,SIG3=  836.06       17.883      - 32143-008
    S.I.=   836.06        SIGE=  827.27
BOT SX,SY,SXY,SZ=  853.12       -409.55       287.63        .00000      SIG1,SIG2,SIG3=  915.85       .10902-007 -471.98
    S.I.=   1387.5        SIGE=  1221.9

EL=  119  NODES=    63    46    64    64       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=  11.07        8.025       -1.217      PRESS=   .00000        .00000
MX,MY,MXY=    1.0076       1.3772      - 70478
TOP SX,SY,SXY,SZ=  741.67        1185.4       -56.818        .00000      SIG1,SIG2,SIG3=  1172.8       734.18      - 17235-008
    S.I.=   1172.8        SIGE=  1026.4
MID SX,SY,SXY,SZ=  247.45        489.86        288.88        .00000      SIG1,SIG2,SIG3=  681.84       65.378      - 24815-008
    S.I.=   681.84        SIGE=  656.00
BOT SX,SY,SXY,SZ=  -246.77       -185.67        634.56        .00000      SIG1,SIG2,SIG3=  818.09       .89835-008 -851.53
    S.I.=   1270.6        SIGE=  1121.4

EL=  120  NODES=    46    65    64    64       MAT=  1  AREA=  12.0      TTOP,TBOT=  150.0  150.0                          QUAD SHELL  63
XC,YC,ZC=  8.609        8.021       -1.217      PRESS=   .00000        .00000
MX,MY,MXY=    1.5427       1.1402      .80164
TOP SX,SY,SXY,SZ=  1295.8        850.81        81.118        .00000      SIG1,SIG2,SIG3=  1310.1       838.56      - 18802-008
```

SARGENT & LUNDY

```
    S.I.=    1010.1        SIGE=   1148.0
MID SX,SY,SXY,SZ=   539.05        291.84       -312.19         00000       SIG1,SIG2,SIG3=   751.15        78.539       -.26385-008
    S.I.=    751.15        SIGE=   714.71
BOT SX,SY,SXY,SZ= -217.67       -287.64       -705.49         00000       SIG1,SIG2,SIG3=   463.28        .11093-007  -948.59
    S.I.=    1411.9        SIGE=   1246.5

EL=  121  NODES=    46    47    65    65       MAT=  1  AREA=  12.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL   83
XC,YC,ZC=   6.148        8.017       .3415-002  PRESS=   00000        00000
MX,MY,MXY=     88234          2.9820          -.57645-001
TOP SX,SY,SXY,SZ=  1248.2        1500.9        86.372         00000       SIG1,SIG2,SIG3=  1527.8        1221.5       -.12029-008
    S.I.=    1527.6        SIGE=   1399.8
MID SX,SY,SXY,SZ=   815.38        38.169        114.65         00000       SIG1,SIG2,SIG3=   831.94        21.810       -.31835-008
    S.I.=    831.94        SIGE=   821.35
BOT SX,SY,SXY,SZ=   382.59       -1424.5        142.92         00000       SIG1,SIG2,SIG3=   393.83       .14375-007  -1435.8
    S.I.=    1829.6        SIGE=   1687.9

EL=  122  NODES=    47    48    65    65       MAT=  1  AREA=  12.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL   83
XC,YC,ZC=   3.690        8.013       .3406-002  PRESS=   00000        00000
MX,MY,MXY=     2.3469          3.5060          73203
TOP SX,SY,SXY,SZ=  1907.4        1736.9        376.76         00000       SIG1,SIG2,SIG3=  2229.5        1464.7       -.28967-008
    S.I.=    2229.5        SIGE=   1962.6
MID SX,SY,SXY,SZ=   755.21        20.119        17.896         00000       SIG1,SIG2,SIG3=   755.84        19.493       -.28912-008
    S.I.=    755.84        SIGE=   745.99
BOT SX,SY,SXY,SZ=  -396.94       -1748.6        -341.37        00000       SIG1,SIG2,SIG3=  -.15167-014  -315.52      -1829.9
    S.I.=    1829.9        SIGE=   1694.3

EL=  123  NODES=    65    48    66    66       MAT=  1  AREA=  12.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL   83
XC,YC,ZC=   1.230        8.010       -1.217       PRESS=   00000        00000
MX,MY,MXY=     1.4833          .41567          .65320-001
TOP SX,SY,SXY,SZ=  1124.0        685.69        317.59         00000       SIG1,SIG2,SIG3=  1290.7        518.99       -.30319-008
    S.I.=    1290.7        SIGE=   1124.9
MID SX,SY,SXY,SZ=   395.48        481.81        285.55         00000       SIG1,SIG2,SIG3=   727.87        150.43       -.22685-008
    S.I.=    727.87        SIGE=   686.53
BOT SX,SY,SXY,SZ=  -331.06        277.92        253.51         00000       SIG1,SIG2,SIG3=   389.64       .82263-008  -422.78
    S.I.=    792.42        SIGE=   686.77

EL=  124  NODES=    48    67    66    66       MAT=  1  AREA=  13.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL   83
XC,YC,ZC=    .0000        8.675       -1.217       PRESS=   00000        00000
MX,MY,MXY=     .00000          .00000          .00000
TOP SX,SY,SXY,SZ=   121.59       -4.2136       -75.118         00000       SIG1,SIG2,SIG3=   156.67       .15396-008  -39.289
    S.I.=    195.95        SIGE=   179.56
MID SX,SY,SXY,SZ=   121.59       -4.2136       -75.118         00000       SIG1,SIG2,SIG3=   156.67       .15396-008  -39.289
    S.I.=    195.95        SIGE=   179.56
BOT SX,SY,SXY,SZ=   121.59       -4.2136       -75.118         00000       SIG1,SIG2,SIG3=   156.67       .15396-008  -39.289
    S.I.=    195.95        SIGE=   179.56

EL=  125  NODES=    48    49    67    67       MAT=  1  AREA=  13.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL   83
XC,YC,ZC=    .0000        4.009       .3336-002  PRESS=   00000        00000
MX,MY,MXY=     .00000          .00000          .00000
TOP SX,SY,SXY,SZ=   71.107        40.585        63.245         00000       SIG1,SIG2,SIG3=   121.06       .10216-008  -8.8679
    S.I.=    130.03        SIGE=   125.78
MID SX,SY,SXY,SZ=   71.107        40.585        63.245         00000       SIG1,SIG2,SIG3=   121.06       .10216-008  -8.8679
    S.I.=    130.03        SIGE=   125.78
BOT SX,SY,SXY,SZ=   71.107        40.585        63.245         00000       SIG1,SIG2,SIG3=   121.06       .10216-008  -8.8679
    S.I.=    130.03        SIGE=   125.78

EL=  126  NODES=    49    50    67    67       MAT=  1  AREA=  13.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL   83
XC,YC,ZC=    .0000        1.340       .3308-002  PRESS=   00000        00000
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SARGENT & LUNDY

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MX,MY,MXY=     .00000          .00000          .00000
TOP SX,SY,SXY,SZ=  -76.849       -3.4016        27.297         00000       SIG1,SIG2,SIG3=   5.6327       .71805-008  -85.883
    S.I.=    91.515        SIGE=   88.833
MID SX,SY,SXY,SZ=  -76.849       -3.4016        27.297         00000       SIG1,SIG2,SIG3=   5.6327       .71805-008  -85.883
    S.I.=    91.515        SIGE=   88.833
BOT SX,SY,SXY,SZ=  -76.849       -3.4016        27.297         00000       SIG1,SIG2,SIG3=   5.6327       .71805-008  -85.883
    S.I.=    91.515        SIGE=   88.833

EL=  127  NODES=    50    68    67    67       MAT=  1  AREA=  13.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL   83
XC,YC,ZC=    .0000       .4371-002  -1.217       PRESS=   00000        00000
MX,MY,MXY=     .00000          .00000          .00000
TOP SX,SY,SXY,SZ=  -89.534        220.66       -89.480         00000       SIG1,SIG2,SIG3=   245.06       .29821-008  -127.93
    S.I.=    376.99        SIGE=   332.05
MID SX,SY,SXY,SZ=  -89.534        220.66       -89.480         00000       SIG1,SIG2,SIG3=   245.06       .29821-008  -127.93
    S.I.=    376.99        SIGE=   332.05
BOT SX,SY,SXY,SZ=  -89.534        220.66       -89.480         00000       SIG1,SIG2,SIG3=   245.06       .29821-008  -127.93
    S.I.=    376.99        SIGE=   332.05

EL=  128  NODES=    50    51    68    68       MAT=  1  AREA=  13.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL   83
XC,YC,ZC=    .0000       -4.000       -1.217       PRESS=   00000        00000
MX,MY,MXY=     .00000          .00000          .00000
TOP SX,SY,SXY,SZ=  -92.319        153.59       -155.40         00000       SIG1,SIG2,SIG3=   228.79       .31140-008  -187.53
    S.I.=    396.32        SIGE=   344.59
MID SX,SY,SXY,SZ=  -92.319        153.59       -155.40         00000       SIG1,SIG2,SIG3=   228.79       .31140-008  -187.53
    S.I.=    396.32        SIGE=   344.59
BOT SX,SY,SXY,SZ=  -92.319        153.59       -155.40         00000       SIG1,SIG2,SIG3=   228.79       .31140-008  -187.53
    S.I.=    396.32        SIGE=   344.59

EL=  129  NODES=    50    33    51    51       MAT=  1  AREA=  12.0       TTOP,TBOT=  150.0  150.0                          QUAD SHELL   83
XC,YC,ZC=    .0000       -8.687       .3301-002  PRESS=   00000        00000
MX,MY,MXY=     .00000          .00000          .00000
TOP SX,SY,SXY,SZ=  -98.750       -1473.2        258.85         00000       SIG1,SIG2,SIG3=  -.25585-014  -50.452      -1519.5
    S.I.=    1519.5        SIGE=   1494.9
MID SX,SY,SXY,SZ=  -98.750       -1473.2        258.85         00000       SIG1,SIG2,SIG3=  -.25585-014  -50.452      -1519.5
    S.I.=    1519.5        SIGE=   1494.9
BOT SX,SY,SXY,SZ=  -98.750       -1473.2        258.85         00000       SIG1,SIG2,SIG3=  -.25585-014  -50.452      -1519.5
    S.I.=    1519.5        SIGE=   1494.9

EL=  130  NODES=    51    52  MAT=  1  PRESSURES(I,J)=     .00000          .00000       AVE. TEMP=  150.00          3-D THIN-WALL BEAM   24
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00      10894.
        2   150.00      10084.
        3   150.00      -2680.6
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00      5735.1
        2   150.00      7187.4
        3   150.00      8412.4

EL=  131  NODES=    52    53  MAT=  1  PRESSURES(I,J)=     .00000          .00000       AVE. TEMP=  150.00          3-D THIN-WALL BEAM   24
END I  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00      7418.3
        2   150.00      6782.6
        3   150.00      8687.9
END J  PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX          PT     TEMP          SIGX
        1   150.00      8833.3
        2   150.00      7513.8
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SARGENT & LUNDY

148

	3	150.00	8008.3																
EL= 132	NODES=	53	54	MAT=	1	PRESSURES[I,Y]=	.00000		.00000		AVE. TEMP= 150.00				3-D THIN-WALL BEAM				24
END I	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	3428.2																
	2	150.00	7320.3																
	3	150.00	8770.3																
END J	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	10286																
	2	150.00	5891.3																
	3	150.00	4569.9																
EL= 133	NODES=	54	55	MAT=	1	PRESSURES[I,Y]=	.00000		.00000		AVE. TEMP= 150.00				3-D THIN-WALL BEAM				24
END I	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	2285.5																
	2	150.00	6363.0																
	3	150.00	7164.8																
END J	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	8565.7																
	2	150.00	4837.2																
	3	150.00	3836.2																
EL= 134	NODES=	55	56	MAT=	1	PRESSURES[I,Y]=	.00000		.00000		AVE. TEMP= 150.00				3-D THIN-WALL BEAM				24
END I	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	-1885.1																
	2	150.00	5201.1																
	3	150.00	7534.0																
END J	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	5891.3																
	2	150.00	2270.3																
	3	150.00	1818.7																
EL= 135	NODES=	56	57	MAT=	1	PRESSURES[I,Y]=	.00000		.00000		AVE. TEMP= 150.00				3-D THIN-WALL BEAM				24
END I	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	-7166.8																
	2	150.00	3092.1																
	3	150.00	7168.1																
END J	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	8847.5																
	2	150.00	-684.49																
	3	150.00	-1293.4																
EL= 136	NODES=	57	58	MAT=	1	PRESSURES[I,Y]=	.00000		.00000		AVE. TEMP= 150.00				3-D THIN-WALL BEAM				24
END I	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	[illegible]93.2																
	2	150.00	1[illegible]9.13																
	3	150.00	[illegible]02.2																
END J	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	-1658.2																
	2	150.00	338.59																
	3	150.00	1698.2																

SARGENT & LUNDY

149

EL= 137	NODES=	58	59	MAT=	1	PRESSURES[I,Y]=	.00000		.00000		AVE. TEMP= 150.00				3-D THIN-WALL BEAM				24
END I	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	-446.32																
	2	150.00	285.19																
	3	150.00	1292.2																
END J	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	783.04																
	2	150.00	526.65																
	3	150.00	-430.04																
EL= 138	NODES=	59	60	MAT=	1	PRESSURES[I,Y]=	.00000		.00000		AVE. TEMP= 150.00				3-D THIN-WALL BEAM				24
END I	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	-1001.3																
	2	150.00	510.65																
	3	150.00	375.88																
END J	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	1148.1																
	2	150.00	199.78																
	3	150.00	-1148.6																
EL= 139	NODES=	60	61	MAT=	1	PRESSURES[I,Y]=	.00000		.00000		AVE. TEMP= 150.00				3-D THIN-WALL BEAM				24
END I	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	350.07																
	2	150.00	256.90																
	3	150.00	-908.54																
END J	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	89.816																
	2	150.00	212.70																
	3	150.00	-539.89																
EL= 140	NODES=	61	62	MAT=	1	PRESSURES[I,Y]=	.00000		.00000		AVE. TEMP= 150.00				3-D THIN-WALL BEAM				24
END I	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	295.74																
	2	150.00	258.42																
	3	150.00	-746.85																
END J	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	148.09																
	2	150.00	381.12																
	3	150.00	-843.80																
EL= 141	NODES=	62	63	MAT=	1	PRESSURES[I,Y]=	.00000		.00000		AVE. TEMP= 150.00				3-D THIN-WALL BEAM				24
END I	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	881.09																
	2	150.00	382.76																
	3	150.00	-1172.3																
END J	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	-20.383																
	2	150.00	603.01																
	3	150.00	-701.32																
EL= 142	NODES=	63	64	MAT=	1	PRESSURES[I,Y]=	.00000		.00000		AVE. TEMP= 150.00				3-D THIN-WALL BEAM				24
END I	PT	TEMP	SIGX			PT	TEMP	SIGX	PT	TEMP	SIGX		PT	TEMP	SIGX				
	1	150.00	1836.5																

SARGENT & LUNDY

3308

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      2   150.00     824.38
      3   150.00    -2132.5
END J PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
      1   150.00    -671.69
      2   150.00     846.99
      3   150.00     340.47

EL=  143  NODES=   64   65  MAT=  1  PRESSURES(I,Y)=    .00000        .00000    AVE. TEMP=  150.00        3-D THIN-WALL BEAM  24
END I PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
      1   150.00     3682.4
      2   150.00     826.46
      3   150.00    -1422.2
END J PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
      1   150.00    -2286.9
      2   150.00     1405.0
      3   150.00     3390.0

EL=  144  NODES=   65   66  MAT=  1  PRESSURES(I,Y)=    .00000        .00000    AVE. TEMP=  150.00        3-D THIN-WALL BEAM  24
END I PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
      1   150.00     3900.2
      2   150.00     802.48
      3   150.00     1985.9
END J PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
      1   150.00    -2543.9
      2   150.00    -1065.4
      3   150.00     12366

EL=  145  NODES=   67   68  MAT=  1  PRESSURES(I,Y)=    .00000        .00000    AVE. TEMP=  150.00        3-D THIN-WALL BEAM  24
END I PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
      1   150.00     568.27
      2   150.00    -70.284
      3   150.00    -70.284
END J PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
      1   150.00    -57.222
      2   150.00     134.88
      3   150.00     134.88

EL=  146  NODES=   68   51  MAT=  1  PRESSURES(I,Y)=    .00000        .00000    AVE. TEMP=  150.00        3-D THIN-WALL BEAM  24
END I PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
      1   150.00     140.84
      2   150.00     110.37
      3   150.00     110.37
END J PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX        PT     TEMP        SIGX
      1   150.00     276.41
      2   150.00     85.179
      3   150.00     85.179

EL=  147  NODES=   51   70   69   68       MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                        QUAD SHELL  63
XC,YC,ZC=  1.230     -7.997     -5.439      PRESS=    .00000        .00000
MX,MY,MXY=   2.1437        3.0207        2.6033
TOP SX,SY,SXY,SZ=  7569.3        7328.3       -48.810        .00000      SIG1,SIG2,SIG3=  7578.1        7314.5       -.10237-006
     S.I.=  7578.1        SIGE=  7452.2
MID SX,SY,SXY,SZ=  5284.3        4060.3       -2848.8        .00000      SIG1,SIG2,SIG3=  7582.0        1782.8       -.22462-007
     S.I.=  7582.0        SIGE=  8872.4
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SARGENT & LUNDY

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BOT SX,SY,SXY,SZ=  2959.2        832.22       -5848.1        .00000      SIG1,SIG2,SIG3=  7843.1        .90318-007  -3851.8
     S.I.=  11485.        SIGE=  10134.

EL=  148  NODES=   51   52   70   70       MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                        QUAD SHELL  63
XC,YC,ZC=  3.680     -7.993     -4.439      PRESS=    .00000        .00000
MX,MY,MXY=   1.6443        2.3706       -.44529
TOP SX,SY,SXY,SZ=  10877.        5364.2       -1275.4        .00000      SIG1,SIG2,SIG3=  11253.        5087.8       -.24221-007
     S.I.=  11253.        SIGE=  8750.6
MID SX,SY,SXY,SZ=  8209.1        2815.2       -786.84        .00000      SIG1,SIG2,SIG3=  8306.9        2717.5       -.25687-007
     S.I.=  8306.9        SIGE=  6289.2
BOT SX,SY,SXY,SZ=  7441.1        286.28       -317.84        .00000      SIG1,SIG2,SIG3=  7455.2        252.23       -.28287-007
     S.I.=  7455.2        SIGE=  7333.3

EL=  149  NODES=   52   53   70   70       MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                        QUAD SHELL  63
XC,YC,ZC=  6.151     -7.990     -4.439      PRESS=    .00000        .00000
MX,MY,MXY=   1.7123        3.2783        .47571
TOP SX,SY,SXY,SZ=  10877.        6228.2       -433.50        .00000      SIG1,SIG2,SIG3=  10719.        6188.4       -.17808-007
     S.I.=  10719.        SIGE=  8319.5
MID SX,SY,SXY,SZ=  6839.7        2703.2       -845.01        .00000      SIG1,SIG2,SIG3=  6978.1        2550.8       -.25210-007
     S.I.=  6978.1        SIGE=  6010.7
BOT SX,SY,SXY,SZ=  6994.6       -621.79       -1456.5        .00000      SIG1,SIG2,SIG3=  7257.2        .65541-007  -1084.4
     S.I.=  8341.6        SIGE=  7865.7

EL=  150  NODES=   53   71   70   70       MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                        QUAD SHELL  63
XC,YC,ZC=  7.381     -7.987     -5.439      PRESS=    .00000        .00000
MX,MY,MXY=   2.5461        .21108        .81813
TOP SX,SY,SXY,SZ=  5923.8        7304.2        2231.3        .00000      SIG1,SIG2,SIG3=  8885.4        4242.7       -.18228-007
     S.I.=  8885.4        SIGE=  7897.5
MID SX,SY,SXY,SZ=  3188.1        5877.3        1588.7        .00000      SIG1,SIG2,SIG3=  7540.9        2822.5       -.18322-007
     S.I.=  7540.9        SIGE=  8630.8
BOT SX,SY,SXY,SZ=  448.42        6750.4        902.01        .00000      SIG1,SIG2,SIG3=  8878.9        321.85       -.25762-007
     S.I.=  8878.9        SIGE=  8721.7

EL=  151  NODES=   53   72   71   71       MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                        QUAD SHELL  63
XC,YC,ZC=  11.07     -7.981     -5.439      PRESS=    .00000        .00000
MX,MY,MXY=   1.4714        1.9125        .1843
TOP SX,SY,SXY,SZ=  5006.4        7893.0       -860.35        .00000      SIG1,SIG2,SIG3=  8035.9        4881.5       -.13471-007
     S.I.=  8035.9        SIGE=  7010.2
MID SX,SY,SXY,SZ=  3423.2        5835.6       -1838.0        .00000      SIG1,SIG2,SIG3=  8912.1        2346.7       -.17838-007
     S.I.=  8912.1        SIGE=  8068.0
BOT SX,SY,SXY,SZ=  1841.1        3779.2       -3215.7        .00000      SIG1,SIG2,SIG3=  8168.7        .92777-007  -848.34
     S.I.=  8717.1        SIGE=  8460.4

EL=  152  NODES=   53   54   72   72       MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                        QUAD SHELL  63
XC,YC,ZC=  13.53     -7.980     -4.439      PRESS=    .00000        .00000
MX,MY,MXY=    .76878        1.7433        .21481-001
TOP SX,SY,SXY,SZ=  8778.5        5530.5       -2302.0        .00000      SIG1,SIG2,SIG3=  8971.7        4337.4       -.22135-007
     S.I.=  8971.7        SIGE=  7660.1
MID SX,SY,SXY,SZ=  7854.0        3856.2       -2325.1        .00000      SIG1,SIG2,SIG3=  8971.2        2638.0       -.24878-007
     S.I.=  8971.2        SIGE=  7585.7
BOT SX,SY,SXY,SZ=  7129.5        1781.7       -2348.2        .00000      SIG1,SIG2,SIG3=  8014.2        896.84       -.27881-007
     S.I.=  8014.2        SIGE=  7605.5

EL=  153  NODES=   54   55   72   72       MAT=  1  AREA=  9.83      TTOP,TBOT=  150.0  150.0                        QUAD SHELL  63
XC,YC,ZC=  15.99     -7.977     -4.439      PRESS=    .00000        .00000
MX,MY,MXY=    .70652        1.7722        .24732
TOP SX,SY,SXY,SZ=  7184.2        5106.2       -2206.8        .00000      SIG1,SIG2,SIG3=  8893.0        3707.4       -.18183-007
     S.I.=  8893.0        SIGE=  7485.0
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SARGENT & LUNDY

3308

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MID SX,SY,SXY,SZ=  8435.5        3200.5       -2474.4          00000        SIG1,SIG2,SIG3=  7774.3        1882.0       -.23227-007
    S.I.=  7774.3          SIGE=  7030.7
BOT SX,SY,SXY,SZ=  5677.0        1285.1       -2740.3          00000        SIG1,SIG2,SIG3=  6894.6        .55134-007  -22.485
    S.I.=  7017.0          SIGE=  7005.6

EL=  154  NODES=   55    73    72    72       MAT=  1  AREA=  9.83       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  17.22       -7.976       -5.439          PRESS=  00000        00000
MX,MY,MXY=   1.1111          .22835          .12706
TOP SX,SY,SXY,SZ=  4588.3        5167.9       3151.4           00000        SIG1,SIG2,SIG3=  8042.8        1713.4       -.24865-007
    S.I.=  8042.8          SIGE=  7337.7
MID SX,SY,SXY,SZ=  3393.5        4922.4       3014.8           00000        SIG1,SIG2,SIG3=  7268.1        1047.8       -.24437-007
    S.I.=  7268.1          SIGE=  6805.0
BOT SX,SY,SXY,SZ=  2198.8        4678.8       2878.1           00000        SIG1,SIG2,SIG3=  6571.3        304.28       -.24820-007
    S.I.=  6571.3          SIGE=  6424.8

EL=  155  NODES=   55    74    72    73       MAT=  1  AREA=  9.83       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  20.91       -7.972       -5.439          PRESS=  00000        00000
MX,MY,MXY=   .69332          .84592          .27157
TOP SX,SY,SXY,SZ=  195.70        6334.0       -55.232          00000        SIG1,SIG2,SIG3=  6334.5        195.21       -.24119-007
    S.I.=  6334.5          SIGE=  6239.2
MID SX,SY,SXY,SZ= -548.79        5424.4       -455.18          00000        SIG1,SIG2,SIG3=  5458.9        .47482-007  -584.27
    S.I.=  6043.2          SIGE=  5773.3
BOT SX,SY,SXY,SZ= -1295.3        4514.8       -855.16          00000        SIG1,SIG2,SIG3=  4638.1        .47588-007  -1418.5
    S.I.=  6056.5          SIGE=  5486.7

EL=  156  NODES=   55    56    74    74       MAT=  1  AREA=  9.83       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  23.37       -7.971       -4.439          PRESS=  00000        00000
MX,MY,MXY=   .16835          .64787          .17412
TOP SX,SY,SXY,SZ=  3803.7          95.190       -2831.0          00000        SIG1,SIG2,SIG3=  5411.2        .53614-007  -1412.4
    S.I.=  6823.8          SIGE=  6236.5
MID SX,SY,SXY,SZ=  3722.8         -601.43       -3018.2          00000        SIG1,SIG2,SIG3=  5273.3        .58342-007  -2152.1
    S.I.=  7426.3          SIGE=  6617.2
BOT SX,SY,SXY,SZ=  3541.6        -1298.1        -3205.4          00000        SIG1,SIG2,SIG3=  5138.1        .63113-007  -2894.5
    S.I.=  8032.6          SIGE=  7046.3

EL=  157  NODES=   55    57    74    74       MAT=  1  AREA=  9.83       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  25.83       -7.969       -4.439          PRESS=  00000        00000
MX,MY,MXY=   .22844          .40974          .13852
TOP SX,SY,SXY,SZ=  603.83        -1170.3        -1509.0          00000        SIG1,SIG2,SIG3=  1487.2        .27507-007  -2033.6
    S.I.=  3500.8          SIGE=  3045.0
MID SX,SY,SXY,SZ=  357.23        -1810.9        -1657.8          00000        SIG1,SIG2,SIG3=  1301.1        .30297-007  -2554.8
    S.I.=  3855.9          SIGE=  3397.7
BOT SX,SY,SXY,SZ=  110.62        -2051.4        -1805.8          00000        SIG1,SIG2,SIG3=  1135.1        .33087-007  -3076.0
    S.I.=  4211.1          SIGE=  3773.8

EL=  158  NODES=   57    75    74    74       MAT=  1  AREA=  9.83       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  27.06       -7.969       -5.440          PRESS=  00000        00000
MX,MY,MXY=   .63718-001   -.26484-002   -.52298-003
TOP SX,SY,SXY,SZ= -9552.4         -74.426        3206.9           00000        SIG1,SIG2,SIG3=  800.18        .80571-007  -10827.
    S.I.=  11527.          SIGE=  11104.
MID SX,SY,SXY,SZ= -9720.9         -71.579        3207.5           00000        SIG1,SIG2,SIG3=  857.32        .81042-007  -10890.
    S.I.=  11567.          SIGE=  11165.
BOT SX,SY,SXY,SZ= -9788.4         -68.731        3208.1           00000        SIG1,SIG2,SIG3=  884.54        .81514-007  -10753.
    S.I.=  11647.          SIGE=  11227.

EL=  159  NODES=   57    76    75    75       MAT=  1  AREA=  10.7       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  29.52       -6.634       -5.440          PRESS=  00000        00000
MX,MY,MXY=   .62443-001   -.73180-001   .55375-001
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TOP SX,SY,SXY,SZ= -4488.5        -8889.7        -4184.0          00000        SIG1,SIG2,SIG3= -.59758-014  -1333.5       -10058.
    S.I.=  10056.          SIGE=  9459.6
MID SX,SY,SXY,SZ= -4567.1        -8811.0        -4253.6          00000        SIG1,SIG2,SIG3= -.17723-013  -1290.0       -10088.
    S.I.=  10088.          SIGE=  9508.9
BOT SX,SY,SXY,SZ= -4634.2        -8732.3        -4313.1          00000        SIG1,SIG2,SIG3= -.58393-014  -1244.4       -10122.
    S.I.=  10122.          SIGE=  9560.6

EL=  160  NODES=   57    58    76    76       MAT=  1  AREA=  10.7       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  29.52       -3.956       -4.439          PRESS=  00000        00000
MX,MY,MXY=   .80304-001    .72350-001   .11812-001
TOP SX,SY,SXY,SZ= -869.82         -2152.8        -1296.7          00000        SIG1,SIG2,SIG3= -.11204-013  -64.687       -2957.9
    S.I.=  2957.9          SIGE=  2926.2
MID SX,SY,SXY,SZ= -866.72         -2230.5        -1308.5          00000        SIG1,SIG2,SIG3= -.18347-014  -144.67       -3062.6
    S.I.=  3062.6          SIGE=  2962.9
BOT SX,SY,SXY,SZ= -1063.8         -2308.4        -1332.3          00000        SIG1,SIG2,SIG3=  .70077-014  -224.70       -3147.5
    S.I.=  3147.5          SIGE=  3041.4

EL=  161  NODES=   58    59    75    75       MAT=  1  AREA=  10.7       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  29.52       -1.297       -4.439          PRESS=  00000        00000
MX,MY,MXY=   -.81035-002    .85471-001   -.45498-002
TOP SX,SY,SXY,SZ=  457.94         -2004.8         185.48          .00000       SIG1,SIG2,SIG3=  .24085-014  -433.82       -2028.2
    S.I.=  2028.2          SIGE=  1855.8
MID SX,SY,SXY,SZ=  448.23         -2075.3         200.37          00000        SIG1,SIG2,SIG3= -.80001-015  -424.90       -2099.6
    S.I.=  2099.6          SIGE=  1922.7
BOT SX,SY,SXY,SZ=  440.52         -2145.7         205.26          00000        SIG1,SIG2,SIG3=  .57054-015  -416.18       -2170.1
    S.I.=  2170.1          SIGE=  1994.8

EL=  162  NODES=   59    77    76    76       MAT=  1  AREA=  10.7       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  29.52        .3660-001  -5.439          PRESS=  00000        00000
MX,MY,MXY=   -.87103-002   -.12276-001   -.85394-003
TOP SX,SY,SXY,SZ=  299.16         -1078.6         -253.84          00000        SIG1,SIG2,SIG3=  305.71        .11242-007  -1125.1
    S.I.=  1430.9          SIGE=  1305.1
MID SX,SY,SXY,SZ=  288.38         -1065.4         -252.92          00000        SIG1,SIG2,SIG3=  312.79        .11183-007  -1111.8
    S.I.=  1424.8          SIGE=  1295.8
BOT SX,SY,SXY,SZ=  273.59         -1053.2         -252.01          00000        SIG1,SIG2,SIG3=  319.88        .11144-007  -1098.5
    S.I.=  1418.4          SIGE=  1288.6

EL=  163  NODES=   59    78    77    77       MAT=  1  AREA=  10.7       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  29.52        4.039       -5.439          PRESS=  00000        00000
MX,MY,MXY=   -.28128-001    .71036-002   .75547-002
TOP SX,SY,SXY,SZ=  209.84         -17.544         456.13          00000        SIG1,SIG2,SIG3=  516.23        .73871-008  -373.84
    S.I.=  940.17          SIGE=  819.87
MID SX,SY,SXY,SZ=  240.09         -25.163         447.86          00000        SIG1,SIG2,SIG3=  574.64        .73415-008  -359.73
    S.I.=  834.37          SIGE=  816.29
BOT SX,SY,SXY,SZ=  270.33         -32.821         439.80          00000        SIG1,SIG2,SIG3=  583.94        .73101-008  -346.43
    S.I.=  930.37          SIGE=  814.43

EL=  164  NODES=   59    60    78    78       MAT=  1  AREA=  10.7       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
XC,YC,ZC=  29.52        8.707       -4.439          PRESS=  00000        00000
MX,MY,MXY=   -.32874-001    .14207-001   -.10936-001
TOP SX,SY,SXY,SZ=  -116.17         -495.03         289.78          00000        SIG1,SIG2,SIG3=  40.804        .84403-008  -851.80
    S.I.=  892.40          SIGE=  673.02
MID SX,SY,SXY,SZ=  -80.712         -510.30         301.54          00000        SIG1,SIG2,SIG3=  74.711        .84177-008  -865.73
    S.I.=  740.44          SIGE=  706.05
BOT SX,SY,SXY,SZ=  -45.257         -525.58         313.30          00000        SIG1,SIG2,SIG3=  108.34        .82033-008  -880.17
    S.I.=  788.51          SIGE=  740.82

EL=  165  NODES=   60    61    78    78       MAT=  1  AREA=  9.83       TTOP,TBOT=  150.0  150.0                              QUAD SHELL  63
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XC,YC,ZC= 28.29 8.040 -4.439 PRESS= .00000 .00000
MX,MY,MXY= -.43810-001 -.19856-001 -.21311-002
TOP SX,SY,SXY,SZ= 34.382 -482.99 165.07 .00000 SIG1,SIG2,SIG3= 52.572 .48223-008 -531.17
S.I.= 813.74 SIGE= 576.90
MID SX,SY,SXY,SZ= 81.500 -481.64 167.36 .00000 SIG1,SIG2,SIG3= 128.93 .50128-008 -509.07
S.I.= 838.00 SIGE= 584.30
BOT SX,SY,SXY,SZ= 128.61 -440.29 188.85 .00000 SIG1,SIG2,SIG3= 175.36 .52046-008 -487.04
S.I.= 862.40 SIGE= 594.44

EL= 166 NODES= 61 79 78 78 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 83
XC,YC,ZC= 27.06 8.038 -5.439 PRESS= .00000 .00000
MX,MY,MXY= .52028-001 -.22441-001 -.19843-001
TOP SX,SY,SXY,SZ= 30.012 -151.14 -184.05 .00000 SIG1,SIG2,SIG3= 144.57 .32235-008 -265.70
S.I.= 410.27 SIGE= 360.43
MID SX,SY,SXY,SZ= -27.005 -127.01 -162.72 .00000 SIG1,SIG2,SIG3= 93.218 .26750-008 -247.23
S.I.= 340.45 SIGE= 304.73
BOT SX,SY,SXY,SZ= -84.024 -102.86 -141.38 .00000 SIG1,SIG2,SIG3= 48.242 .22268-008 -235.15
S.I.= 283.39 SIGE= 262.61

EL= 167 NODES= 81 80 79 79 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 83
XC,YC,ZC= 23.37 8.038 -5.439 PRESS= .00000 .00000
MX,MY,MXY= .39281-001 -.22463-001 .24037-001
TOP SX,SY,SXY,SZ= 273.86 -122.23 32.098 .00000 SIG1,SIG2,SIG3= 278.46 .31528-008 -124.82
S.I.= 401.28 SIGE= 355.68
MID SX,SY,SXY,SZ= 231.82 -98.079 8.2524 .00000 SIG1,SIG2,SIG3= 231.74 .25524-008 -98.198
S.I.= 329.94 SIGE= 293.44
BOT SX,SY,SXY,SZ= 189.39 -73.525 -19.593 .00000 SIG1,SIG2,SIG3= 190.84 .20917-008 -75.375
S.I.= 286.21 SIGE= 237.67

EL= 168 NODES= 61 82 40 80 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 83
XC,YC,ZC= 20.91 8.035 -4.439 PRESS= .00000 .00000
MX,MY,MXY= -.37386-001 .71768-001 .38045-001
TOP SX,SY,SXY,SZ= 229.07 235.02 114.83 .00000 SIG1,SIG2,SIG3= 346.81 117.18 -.80251-009
S.I.= 346.81 SIGE= 305.56
MID SX,SY,SXY,SZ= 269.27 157.85 76.089 .00000 SIG1,SIG2,SIG3= 307.85 119.27 -.74084-009
S.I.= 307.85 SIGE= 268.85
BOT SX,SY,SXY,SZ= 308.47 80.680 37.311 .00000 SIG1,SIG2,SIG3= 315.40 74.749 -.84543-009
S.I.= 315.40 SIGE= 285.47

EL= 169 NODES= 62 83 80 80 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 83
XC,YC,ZC= 18.45 8.034 -4.439 PRESS= .00000 .00000
MX,MY,MXY= -.59151-001 .54657-001 .40432-001
TOP SX,SY,SXY,SZ= 429.22 267.66 146.83 .00000 SIG1,SIG2,SIG3= 520.33 192.58 -.12476-008
S.I.= 520.33 SIGE= 455.66
MID SX,SY,SXY,SZ= 483.82 224.91 103.36 .00000 SIG1,SIG2,SIG3= 528.06 189.67 -.13294-008
S.I.= 528.06 SIGE= 463.32
BOT SX,SY,SXY,SZ= 556.43 188.14 59.884 .00000 SIG1,SIG2,SIG3= 565.41 157.18 -.18038-008
S.I.= 565.41 SIGE= 505.50

EL= 170 NODES= 63 81 80 80 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 83
XC,YC,ZC= 17.22 8.033 -5.439 PRESS= .00000 .00000
MX,MY,MXY= .63673-001 .67077-001 -.12275
TOP SX,SY,SXY,SZ= 236.87 426.35 -173.93 .00000 SIG1,SIG2,SIG3= 531.14 134.07 -.19589-008
S.I.= 531.14 SIGE= 478.41
MID SX,SY,SXY,SZ= 168.40 356.22 -41.934 .00000 SIG1,SIG2,SIG3= 365.18 158.48 -.80810-009
S.I.= 365.18 SIGE= 317.08
BOT SX,SY,SXY,SZ= 99.937 284.10 90.058 .00000 SIG1,SIG2,SIG3= 320.82 83.218 -.10120-008
S.I.= 320.82 SIGE= 284.34

SARGENT & LUNDY

EL= 171 NODES= 63 82 81 81 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 83
XC,YC,ZC= 13.53 8.032 -5.438 PRESS= .00000 .00000
MX,MY,MXY= .98564-001 -.54878-001 -.88798-001
TOP SX,SY,SXY,SZ= 571.50 255.98 -248.04 .00000 SIG1,SIG2,SIG3= 708.08 121.50 -.22986-008
S.I.= 706.08 SIGE= 653.87
MID SX,SY,SXY,SZ= 485.51 314.76 -150.58 .00000 SIG1,SIG2,SIG3= 564.52 221.76 -.13229-008
S.I.= 558.52 SIGE= 487.09
BOT SX,SY,SXY,SZ= 359.42 372.57 -65.080 .00000 SIG1,SIG2,SIG3= 422.03 310.97 -.43633-009
S.I.= 422.03 SIGE= 378.91

EL= 172 NODES= 63 64 82 82 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 83
XC,YC,ZC= 11.07 8.028 -4.439 PRESS= .00000 .00000
MX,MY,MXY= -.28086 .58389-003 .27139
TOP SX,SY,SXY,SZ= 361.31 138.70 304.41 .00000 SIG1,SIG2,SIG3= 674.13 .80934-008 -74.118
S.I.= 646.25 SIGE= 614.55
MID SX,SY,SXY,SZ= 673.84 138.10 12.606 .00000 SIG1,SIG2,SIG3= 674.14 137.80 -.21071-008
S.I.= 674.14 SIGE= 616.89
BOT SX,SY,SXY,SZ= 988.38 137.49 -278.20 .00000 SIG1,SIG2,SIG3= 1070.0 83.493 -.39818-008
S.I.= 1070.0 SIGE= 1044.1

EL= 173 NODES= 84 85 82 82 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 83
XC,YC,ZC= 8.609 8.025 -4.439 PRESS= .00000 .00000
MX,MY,MXY= -.25748 .10187 .53195-001
TOP SX,SY,SXY,SZ= 488.84 288.96 82.587 .00000 SIG1,SIG2,SIG3= 488.82 250.98 -.83651-009
S.I.= 488.82 SIGE= 421.67
MID SX,SY,SXY,SZ= 745.67 159.85 5.3886 .00000 SIG1,SIG2,SIG3= 745.72 159.80 -.23028-008
S.I.= 745.72 SIGE= 680.12
BOT SX,SY,SXY,SZ= 1022.5 50.320 -51.810 .00000 SIG1,SIG2,SIG3= 1025.3 47.574 -.38409-008
S.I.= 1025.3 SIGE= 1002.3

EL= 174 NODES= 85 83 83 82 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 83
XC,YC,ZC= 7.378 8.027 -5.438 PRESS= .00000 .00000
MX,MY,MXY= -.37284 .33129 -.37763
TOP SX,SY,SXY,SZ= -302.18 1034.1 -375.33 .00000 SIG1,SIG2,SIG3= 1132.3 .12042-007 -400.39
S.I.= 1632.7 SIGE= 1378.8
MID SX,SY,SXY,SZ= 88.821 677.84 30.716 .00000 SIG1,SIG2,SIG3= 678.47 87.194 -.23475-008
S.I.= 678.47 SIGE= 636.46
BOT SX,SY,SXY,SZ= 499.83 321.82 436.78 .00000 SIG1,SIG2,SIG3= 658.48 .70048-008 -35.035
S.I.= 891.52 SIGE= 874.53

EL= 175 NODES= 85 84 83 83 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 83
XC,YC,ZC= 3.880 8.026 -5.439 PRESS= .00000 .00000
MX,MY,MXY= -.75080-001 -.97152-001 -.54811
TOP SX,SY,SXY,SZ= 380.38 276.32 -695.72 .00000 SIG1,SIG2,SIG3= 1225.8 .14099-007 -648.68
S.I.= 1794.5 SIGE= 1568.4
MID SX,SY,SXY,SZ= 401.11 380.78 -305.29 .00000 SIG1,SIG2,SIG3= 726.88 113.03 -.24183-008
S.I.= 726.88 SIGE= 678.44
BOT SX,SY,SXY,SZ= 541.84 485.25 285.14 .00000 SIG1,SIG2,SIG3= 800.09 227.00 -.23514-008
S.I.= 800.09 SIGE= 714.16

EL= 176 NODES= 85 86 84 84 MAT= 1 AREA= 9.83 TTOP,TBOT= 150.0 150.0 QUAD SHELL 83
XC,YC,ZC= 1.230 8.020 -4.439 PRESS= .00000 .00000
MX,MY,MXY= -.35982 .38785 .40018
TOP SX,SY,SXY,SZ= 332.27 532.57 406.87 .00000 SIG1,SIG2,SIG3= 851.44 13.414 -.33822-008
S.I.= 851.44 SIGE= 844.81
MID SX,SY,SXY,SZ= 719.27 136.94 -23.425 .00000 SIG1,SIG2,SIG3= 720.21 136.00 -.22681-008
S.I.= 720.21 SIGE= 682.76

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BOT SX,SY,SXY,S2= 1106.3 -258.70 -453.72 .00000 SIG1,SIG2,SIG3= 1243.3 12879-007 -395.75
S.I.= 1639.1 SIGE= 1481.4

EL= 177 NODES= 69 70 MAT= 1 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	7434.8									
	2	150.00	5694.6									
	3	150.00	7660.1									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	8671.6									
	2	150.00	6385.8									
	3	150.00	7041.3									
FORCES ON MEMBER AT NODE		69	-3207.06	-28.0426		-28.9139	-29.0185		170.121	-192.144		
		70	3207.06	28.0426		28.9139	29.0185		-27.9807	84.1014		

EL= 178 NODES= 70 71 MAT= 1 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	3392.3									
	2	150.00	8593.8									
	3	150.00	8008.3									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	8650.8									
	2	150.00	5625.4									
	3	150.00	4687.1									
FORCES ON MEMBER AT NODE		70	-2977.52	-46.7782		123.812	-22.2213		-312.584	-138.269		
		71	2977.52	46.7782		-123.812	22.2213		-295.758	-81.7273		

EL= 179 NODES= 71 72 MAT= 1 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	1827.1									
	2	150.00	5877.9									
	3	150.00	7098.5									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	8948.7									
	2	150.00	4437.4									
	3	150.00	2857.0									
FORCES ON MEMBER AT NODE		71	-2504.39	-55.6927		170.260	-13.2696		-385.887	-118.328		
		72	2504.39	55.6927		-170.260	13.2696		-441.112	-154.494		

EL= 180 NODES= 72 73 MAT= 1 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-834.97									
	2	150.00	4760.7									
	3	150.00	6391.8									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	8644.1									
	2	150.00	2850.0									
	3	150.00	1134.3									
FORCES ON MEMBER AT NODE		72	-1825.89	-62.5677		230.440	-8.86641		-547.024	-159.453		
		73	1825.89	62.5677		-230.440	8.86641		-585.974	-148.171		

EL= 181 NODES= 73 74 MAT= 1 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX

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157

	1	150.00	-1845.4									
	2	150.00	2959.3									
	3	150.00	4922.2									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	4838.7									
	2	150.00	1930.4									
	3	150.00	897.75									
FORCES ON MEMBER AT NODE		73	-1113.50	-63.5374		145.383	-5.27466		-450.132	-191.888		
		74	1113.50	63.5374		-145.383	5.27466		-284.664	-120.504		

EL= 182 NODES= 74 75 MAT= 1 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-2685.4									
	2	150.00	2153.1									
	3	150.00	3369.4									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	8385.4									
	2	150.00	-477.24									
	3	150.00	-2430.7									
FORCES ON MEMBER AT NODE		74	805.497	-63.4216		272.820	-2.31895		-473.985	-120.854		
		75	-805.497	63.4216		-272.820	2.31895		-866.396	-190.969		

EL= 183 NODES= 75 76 MAT= 1 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	2191.9									
	2	150.00	-46.184									
	3	150.00	-165.05									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	1277.2									
	2	150.00	148.31									
	3	150.00	356.65									
FORCES ON MEMBER AT NODE		75	-233.763	5.86058		-20.3680	-.852936		218.984	11.4234		
		76	233.763	-5.86058		20.3680	.852936		-110.355	20.3684		

EL= 184 NODES= 76 77 MAT= 1 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-2405.1									
	2	150.00	253.58									
	3	150.00	1724.2									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	114.49									
	2	150.00	-705.24									
	3	150.00	1122.2									
FORCES ON MEMBER AT NODE		76	21.0402	6.54122		63.7581	-.159084		-359.804	-143.766		
		77	-21.0402	-6.54122		-63.7581	.159084		-80.1365	178.852		

EL= 185 NODES= 77 78 MAT= 1 PRESSURES(Z,Y)= .00000 .00000 AVE. TEMP= 150.00 3-D THIN-WALL BEAM 24

END I	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-113.85									
	2	150.00	-896.54									
	3	150.00	1206.8									
END J	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX	PT	TEMP	SIGX
	1	150.00	-757.27									
	2	150.00	-807.87									

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3308

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        3    150.00      1666.6
FORCES ON MEMBER AT NODE    77   36.8313        6.80737       -13.4566       -.907096-001   67.1579       -186.280
                            78  -36.8313       -6.80737        13.4566        .907096-001   14.8050        222.566

EL=  186  NODES=   78   79  MAT=   1  PRESSURES(I,J)=     00000          00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      157.61
        2   150.00     -575.99
        3   150.00      1309.0
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00     -435.42
        2   150.00     -37.748
        3   150.00      865.54
FORCES ON MEMBER AT NODE    78  -42.9426       -19.5193       -23.2883        1.03577       75.6255       -184.273
                            79   42.9426        19.5193        23.2883       -1.03577       36.8756        88.3036

EL=  187  NODES=   79   80  MAT=   1  PRESSURES(I,J)=     00000          00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00     -50.229
        2   150.00     -49.754
        3   150.00      724.92
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      215.00
        2   150.00      191.94
        3   150.00     -23.695
FORCES ON MEMBER AT NODE    79  -69.6507       -19.6902        .468056        1.19213       -.484744-001  -75.7303
                            80   69.6507        19.6902       -.468056       -1.19213       -2.25480      -21.0787

EL=  188  NODES=   80   81  MAT=   1  PRESSURES(I,J)=     00000          00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      123.56
        2   150.00      192.51
        3   150.00      15.412
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      487.84
        2   150.00      397.33
        3   150.00     -758.51
FORCES ON MEMBER AT NODE    80  -63.4532       -19.4602        3.17080        1.07516       -6.74052       17.3130
                            81   63.4532        19.4602       -3.17080       -1.07516       -8.84828      -112.892

EL=  189  NODES=   81   82  MAT=   1  PRESSURES(I,J)=     00000          00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      287.78
        2   150.00      401.85
        3   150.00     -681.10
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      681.56
        2   150.00      577.00
        3   150.00     -1425.2
FORCES ON MEMBER AT NODE    81  -49.6947       -19.2768        4.34718        1.64895       -11.1515       105.867
                            82   49.6947        19.2768       -4.34718       -1.64895       -10.2221      -195.728

EL=  190  NODES=   82   83  MAT=   1  PRESSURES(I,J)=     00000          00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
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END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      459.40
        2   150.00      582.90
        3   150.00     -1341.7
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      836.99
        2   150.00      695.11
        3   150.00     -1845.7
FORCES ON MEMBER AT NODE    82  -34.3370       -14.2806        5.25857        .331109       -12.0725       188.141
                            83   34.3339        14.2806       -5.25857       -.331108       -13.7723      -284.256

EL=  191  NODES=   83   84  MAT=   1  PRESSURES(I,J)=     00000          00000      AVE. TEMP= 150.00          3-D THIN-WALL BEAM  24
END I  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      586.45
        2   150.00      702.73
        3   150.00     -1851.4
END J  PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX          PT     TEMP        SIGX
        1   150.00      801.26
        2   150.00      759.83
        3   150.00     -2167.5
FORCES ON MEMBER AT NODE    83  -17.0097       -7.14073        3.31485       -.580761-001  -11.3872       249.699
                            84   17.0097        7.14073       -3.31485        .580761-001  -4.82980      -284.798

      DISPLACEMENT INCREMENT =    2337!-003 AT NODE     72      CRITERION =    .10000-002
            PLASTICITY RATIO =    81570-002 AT ELEM      6      CRITERION =    .10000-001
*** LOAD STEP    2   ITER    20  COMPLETED.  TIME=    000000      TIME INC=    .000000      NEW TRIANG MATRIX  CUM. ITER. =   14

END OF INPUT ENCOUNTERED ON FILE27

***** INPUT FILE SWITCHED FROM FILE27 TO FILE18
```

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160

```
          ANSYS - ENGINEERING ANALYSIS SYSTEM  REVISION 4.1       C       SARGENT & LUNDY  JAN 1,1983
     SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412)746-3304  TWX 510-690-8655

 HVAC PENETRATION WITH FIRE DAMPER - NONLINEAR FULL TEMPERATURE                14.2868    1/18/86 CP=    1697.432

          ***** ANSYS RUN TIME ESTIMATOR *****


***** ANSYS RUN TIME ESTIMATOR *****

COMPUTER = UNIVAC 1100              NUMBER OF MASTER DOF =     0
ANALYSIS TYPE =  0                  RMS WAVE FRONT =    88
NUMBER OF NODES =      74           TOTAL NO. OF ITERATIONS =      1
MAX. DOF PER NODE =  6              STIFF. MATRIX SAVE KEY = 0
NUMBER OF MATRICES = 1              ELEM. MATRIX SAVE KEY = 0
NUMBER OF STRESS SOLUTIONS=     1   ROTATED NODE FRACTION=   .000

  STIF  NUMBER    FORM. TIME  STRESS TIME    NAME
    24      65          .312          .955   PLASTIC THIN-WALL BEAM, 3-D
    48      60          .523          .538   PLASTIC TRIANGULAR SHELL
    63      66         1.093          .627   QUAD. FLAT SHELL


  ANALYSIS PHASE          FIRST      SUBSEQUENT
                        ITERATION    ITERATIONS       TOTAL

ELEMENT FORMULATION         22.48         22.48       22.48
WAVE FRONT SOLUTION          9.34          9.34        9.34
BACK SUBSTITUTION             .71           .71         .71
ELEMENT STRESSES            25.05         25.05       25.05

    TOTAL TIME (SEC)        57.60         57.60       57.60


***** ROUTINE COMPLETED *****  CP =       1697.540

END OF INPUT ENCOUNTERED ON FILE18


***** RUN COMPLETED *****  CP=     1697.6740    TIME=    14.2869


@PRD,LEAP
PMD NOT ALLOWED
```

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161

```
@SLXQT  OPSS*085ABSOLUTES.ANS095185410/PLOT33
SLXQT 2.2 SLTSR1 01/18/86 14:17:12


                PROGRAM ID ANS095185410                                  PROGRAM FILE DATE FEBRUARY 1, 1984 21:41:38

                RUN ID     SJH04                                         DIVISION STATION ID  CL1453800

                     *****    PROGRAM USED IS VALIDATED ACCORDING TO SDP 4-1    *****
                                AND EXECUTED FROM CSD CONTROLLED FILES
```

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3308

142

```
@XQT     OPSS*085ABSOLUTES.ANS095185A10/PLOT33
***** NO PLOT GENERATED *****
***** END OF PLOT33 *****

@PMD,LEAP
PMD NOT ALLOWED

@FIN
```

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3

3308

SARGENT & LUNDY

164

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     CONSOLE MESSAGES
SITE IDENTIFIER  S&L-8      SYSTEM TYPE  1100/80A
S & L  PROGRAM NUMBER   ANS095185410
*** PROGRAM ANS095185410 IS VALIDATED ACCORDING TO GOP 4-1 ***
XOT - SYS$         * OPS$           - ANS095185410 /            HAD      0 OVRFLW,      0 UNDFLW,      0 DIVFLT,      0 O/O FLT
*** PROGRAM ANS095185410/PLOT33 IS VALIDATED ACCORDING TO GOP 4-1 ***
XOT - OPS$         * 0SSABSOLUTES - ANS095185410 / PLOT33      HAD      0 OVRFLW,      0 UNDFLW,      0 DIVFLT,      0 O/O FLT
     $JH04  FIN
```

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165

BULLETIN!

FOR EVERY PROBLEM THERE
IS ONE SOLUTION WHICH IS
SIMPLE, NEAT AND WRONG

H. L. MENCKEN

COMPUTER SOFTWARE LIBRARY NOTICE

THE FOLLOWING PROGRAM AND TASK NUMBERS WILL EXPIRE JANUARY 27, 1986

```
01.3.009-1.00 FIC     01.6.036-3.00 SYM     20.1.651-0.00 DYN
20.1.682- 0.0 AOU     20.1.730-0.00 DAM     20.1.778-0.00 SED
20.1.856-0.00 BOR     20.1.965-0.00 PPP     20.1.981-0.00 TIM
20.2.037-0.00 APD     20.2.039-0.00 SDS     20.2.075-0.00 SEI
20.2.084-0.00 LOT     20.2.095-0.00 GRA     20.2.179-0.00 CHA
20.2.187-0.00 GKS     20.2.280- 0.0 APL     22.6.687-0.80 AIR
```

DAG   JAN 17, 1986   08:00   1100/80 OAKBROOK SYSTEM

SARGENT & LUNDY

SARGENT & LUNDY ENGINEERS
CHICAGO, ILLINOIS

PEAK-MEM 177684 AVERAGE-MEM 171008

** RUN TIME SUMMARY IN SUS **

RUNID: JH04 ACCT: 215 PROJECT: CL14538w0

TIME: TOTAL 00:28:12.576 CBSUPS: 3628258881

CPU: 00:19:22.478 I/O: 00:12:30.930

CC/ER: 00:04:18.166 WAIT 00:00:00.000

IMAGES READ: 250 PAGES: 162

START: 13:48:36 JAN 18,1985 FIN: 14:17:15 JAN 18,1985

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3308