



CALCULATION PACKAGE

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PROJECT/CUSTOMER:

FuelSolutions™ On-going Licensing Support

TITLE:

W150 Storage Cask Reduced Heat Blocked Vent Thermal Analysis

SCOPE:

Product: ☒ FuelSolutions™ ☐ VSC-24 ☐ Other _____
Service: ☒ Storage ☐ Transportation ☐ Other _____
Conditions: ☐ Normal ☐ Off-Normal ☒ Accident ☐ Other _____

Component(s):

W150 Storage Cask Assembly, W21 Canister Assembly, W74 Canister Assembly

Prepared by:

Verified by:

Approved by Engineering Manager:

RECORD OF REVISIONS

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RECORD OF VERIFICATION

	<u>YES</u>	<u>NO</u>	<u>N/A</u>
(a) The objective is clear and consistent with the analysis.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
(b) The inputs are correctly selected and incorporated into the design.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) References are complete, accurate, and retrievable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d) Basis for engineering judgments is adequately documented.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e) The assumptions necessary to perform the design activity are adequately described and reasonable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f) Assumptions and references, which are preliminary, are noted as being preliminary.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(g) Methods and units are clearly identified.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(h) Any limits of applicability are identified.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(i) Computer calculations are properly identified.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(j) Computer codes used are under configuration control.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(k) Computer codes used are applicable to the calculation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(l) Input parameters and boundary conditions are appropriate and correct.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
(m) An appropriate design method is used.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
(n) The output is reasonable compared to the inputs.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
(o) Conclusions are clear and consistent with analysis results.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

COMMENTS:

Division of preparer and verifier responsibilities are as follows:

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Steve Sisley - prepared calculation package write-up and presentation of results from computer runs.

Larry Nielsen - checked SINDA/FLUINT computer models and computer runs.

Carl Froehlich – checked calculation package write-up and results from computer runs.

Verifier:

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1.

INTRODUCTION

1.1 Objective

The objective of this calculation package is to determine the time required to reach the limiting material short-term allowable temperature of the FuelSolutions™ storage system under the all-vents blocked accident condition for canister heat loads that are less than the design-basis values.

1.2 Purpose

The purpose of this calculation package is to establish maximum acceptable cask inspection intervals for FuelSolutions™ storage casks that have heat loads that are lower than the design-basis values.

1.3 Scope

The scope of this calculation includes the thermal evaluation of the FuelSolutions™ W150 storage cask for the all-vents blocked accident condition. Blocked vent transient thermal evaluations are performed for reduced canister heat loads ranging from 5 kW to 25 kW. Although the heat load profiles used for the thermal analysis are based upon the Q_{\max} heat load profile of the FuelSolutions™ W21 canister design, the results are considered to also be applicable to the FuelSolutions™ W74 canister design. The applicability of the results of the analyses contained in this calculation package to the W21 and W74 is discussed in Section 6.2.

2. REQUIREMENTS

2.1 Design Inputs

- 2.1.1. Title 10, Code of Federal Regulations, Part 72 (10CFR72), *Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste*, United States Nuclear Regulatory Commission (USNRC), January 1, 1995.
(Refer to Table 1.)

2.2 Regulatory Commitments

- 2.2.1. Per NUREG-1536 [Reference 3.2.2], the cask inspection interval should be more frequent than the time interval required for the fuel [or any other limiting system component] to heat up to the established accident temperature criteria. Accordingly, the specified cask inspection intervals are at minimum 25% lower than the calculated time to reach the limiting component thermal limit.
- 2.2.2. Cask inspection intervals are limited to practical time increments (e.g., whole-day increments).

Table 1 - Applicable Regulatory Requirements

Regulation	Requirement
10CFR72.122(h)(4)	Periodic monitoring is required for dry spent fuel storage in a manner such that the licensee will be able to determine when corrective action needs to be taken to maintain safe storage conditions. The monitoring period must be based on the spent fuel storage cask design requirements.
10CFR72.128(a)(1)	Cask systems must be designed with the capability to test and monitor components important to safety.
10CFR72.128(a)(4)	Cask systems must be designed with a heat-removal capability having testability and reliability consistent with its importance to safety.

3. REFERENCES

3.1 BFS Calculation Packages

- 3.1.1. CMPC.1505.007, Revision 3, FuelSolutions™ W150 Storage Cask Heat Load Qualification and System Temperatures.
(What Used: Design-basis ambient conditions and insolation for the all-vents blocked accident condition from Table 4-2 (case 11); short-term material temperature limits from Table 4-3; component temperatures for the all-vents blocked condition for a design-basis heat load of 28 kW at 41 hours from Table 6-16.)
- 3.1.2. CMPC.1505.003, Revision 2, Wesflex™ W150 Storage Cask Thermal Model.
(What Used: Design configuration and SINDA/FLUINT computer model of the FuelSolutions™ storage system.)
- 3.1.3. CMPC.1505.200, Revision 6, FuelSolutions™ W21 Heat Load Qualification for Storage.
(What Used: Peak temperatures of fuel clad, canister shell, and concrete from blocked vent analysis at 60 hours into transient.)
- 3.1.4. CMPC.1505.400, Revision 5, FuelSolutions™ W74 Heat Load Qualification for Storage.
(What Used: Peak temperatures of fuel clad, canister shell, and concrete from blocked vent analysis at 58 hours into transient)
- 3.1.5. CMPC.1705.003, Revision 1, Bounding Canister Profiles for Thermal Calculations.
(What Used: Design-basis canister heat profile from Table 3 for “Max. Thermal 182” Canister”.)

3.2 General References

- 3.2.1. SINDA/FLUINT Computer Code, *System Improved Numerical Differencing Analyzer and Fluid Integrator*, Version 4.6 Cullimore and Ring Technologies, Inc, BFS File No. SOFT.000.001.
- 3.2.2. U.S. Nuclear Regulatory Commission, *Standard Review Plan for Dry Cask Storage Systems*, NUREG-1536, January 1997.
- 3.2.3. Nasser, K. W, Lohtia, R. P., Mass Concrete Properties at High Temperatures, ACI Journal, Title No. 68-19, March 1971.

4. ASSUMPTIONS

4.1 Design Configuration

The configuration of the FuelSolutions™ storage system used in this analysis is the same as that described in Reference 3.1.2 and used for the design-basis W150 storage cask heat load qualification in Reference 3.1.1. Bounding thermal analyses are performed based on the short cask/canister configuration (see Assumption 3, Section 4.3).

4.2 Design Criteria

4.2.1 Thermal Loading

The design-basis thermal loading for the all-vents blocked accident condition are defined in Reference 3.1.1. The thermal loading for the all-vents blocked accident condition includes the ambient air temperature, insulation, and decay heat from the canister payload. With the exception of the decay heat load from the canister payload, the thermal loads used for the blocked vent thermal analyses presented in this calculation package are identical to those described in Reference 3.1.1. These thermal loads are summarized as follows.

As shown in Table 4-2 of Reference 3.1.1, the design-basis all-vents blocked condition (case 11) includes steady-state pre-blockage conditions and transient post-blockage conditions. The pre- and post-blockage design-basis ambient temperatures are 77 °F (normal storage) and 100 °F (normal hot storage), respectively. Design-basis insulation values of 123 BTU/hr-ft² (388 W/m²) and 62 BTU/hr-ft² (194 W/m²) are applied on the top and side surfaces of the cask, respectively, during both pre-blockage steady-state and post-blockage transient conditions.

The design-basis all-vents blocked thermal analysis presented in Reference 3.1.1 is based on a total canister decay heat load of 28 kW. In this calculation package, all-vents blocked thermal analyses are performed for total canister decay heat loads of 25 kW, 20 kW, 15 kW, 10 kW, and 5kW. The canister heat load is distributed to the inside surfaces of the canister shell assembly in the same manner described in Section 5.2 of Reference 3.1.1. Specifically, a non-uniform axial decay heat distribution is applied to the inside radial surface of the canister shell over the axial length of the active fuel region and a uniform heat load is applied at the top end of the canister shell cavity. The applied canister decay heat load distribution for all of the canister heat loads evaluated in this calculation package are summarized in Table 2.

4.2.2 Material Temperature Limits

The material short-term temperature limits that apply to the all-vents blocked accident condition are established in Section 4.1.4 of Reference 3.1.1 and summarized in Table 4. Generally, the controlling short-term temperature limit for the all vents blocked accident condition is 350°F for concrete. However, for lower cask heat loads, the peak concrete temperature never reaches the 350°F short-term temperature limit, even under steady-state all vents blocked conditions. Since it is not acceptable for concrete temperatures to exceed the long-term temperature limits indefinitely, the time that the concrete temperature is allowed to exceed the long-term temperature limit must be established. This

limit is a function of both the concrete temperature and duration over which the long-term temperature limit is exceeded.

Extensive testing has been performed to determine the effects of elevated temperature on concrete properties. Generally, the test data indicates that at moderately high temperatures (i.e., between 200°F and 350°F) concrete does not experience any significant reduction in compressive strength over short periods (e.g., days or weeks). As shown in Reference 3.2.3, Table 1, concrete held at 250°F maintained its full compressive strength for 14 days or longer. This same reference also shows that concrete held at 300°F maintains its full compressive strength for at least 4 days and experiences only a slight reduction in compressive strength during the first 14 days. Based upon these results, the following allowable temperature criteria is applied to these cases:

- (1) The peak concrete temperature is allowed to exceed the 200°F long-term temperature limit for up to 14 days, provided that the peak concrete temperature does not exceed 250°F during that period of time.
- (2) The peak concrete temperature is allowed to exceed the 200°F long-term temperature limit for up to 7 days, provided that the peak concrete temperature does not exceed 300°F during that period of time.

4.3 Calculation Assumptions

The principal assumptions used for the all-vents blocked thermal evaluation presented in this calculation are as follows:

1. Prior to blockage of the W150 storage cask vents, a steady-state temperature distribution is determined based on an assumed ambient air temperature of 77°F and insolation as discussed in Section 4.2.1. At the start of the accident event, all inlet and outlet vent screens of the W150 storage cask are conservatively assumed to be instantaneously completely blocked and the ambient air temperature instantaneously increased to 100°F.
2. During the all-vents blocked accident condition, no blockage is assumed within the W150 cask annulus and air is assumed to circulate around the W150 cask heat shield as illustrated in Figure 6-11 of Reference 3.1.2.
3. A bounding thermal evaluation of the FuelSolutions™ storage system for the all-vents blocked accident thermal condition is performed based upon the shortest cask/canister configuration. This is conservative since the shorter length provides less surface area for heat transfer between the canister and the external environment. Consequently, given the same canister heat load, the shortest configuration will experience highest system temperatures.
4. The “Max. Thermal 182” Canister” heat profile from Table 3 of Reference 3.1.5 is assumed for all canister heat loads evaluated in this calculation package. This thermal profile was used for the design-basis blocked vent thermal analysis that was based on a bounding canister heat load of 28 kW. This same bounding profile is assumed for the 25 kW, 20 kW, 15 kW, 10 kW, and 5 kW canister heat loads evaluated herein using the heat load vs. axial location formulation of Reference 3.1.1, Section 5.1, Eq. (1), as discussed in Section 4.2.1 of this calculation package.

The resulting applied decay heat load distributions for each heat load evaluated in this calculation package are presented in Table 3.

Table 2 - Canister Heat Load Peaking Factors

Axial Position⁽¹⁾ (in.)	Design Peaking Factors, PF⁽²⁾
0	0.000
12	0.000
20	0.497
30	0.892
40	0.993
50	1.031
60	1.050
70	1.065
80	1.071
90	1.077
100	1.081
110	1.085
120	1.088
130	1.087
140	1.063
150	1.023
160	0.868
170	0.450
172	0.281
182	0.184 ⁽³⁾

Notes:

- ⁽¹⁾ Position relative to the bottom end of the canister shell assembly.
- ⁽²⁾ Reference 3.1.5, Table 3, “Max. Thermal 182” Canister.”
- ⁽³⁾ The total heat load applied at the canister closure lid is equal to the applied canister linear heat generation rate multiplied by 10.0 inches (i.e., = $0.184 \times Q_{\text{Total}} \times 10''/150''$), as described in Reference 3.1.5, Table 3, note 1.

Table 3 - Applied Canister Decay Heat Load Distributions

Axial Position⁽¹⁾ (in.)	Applied Canister Heat Loads (kW)				
	Case 11a (Q=25 kW)	Case 11b (Q=20 kW)	Case 11c (Q=15kW)	Case 11d (Q=10 kW)	Case 11e (Q=5 kW)
4.00	0	0	0	0	0
12.00	0	0	0	0	0
20.05	0.674	0.539	0.404	0.269	0.135
28.20	1.122	0.898	0.673	0.449	0.224
36.40	1.307	1.046	0.784	0.523	0.261
44.60	1.381	1.105	0.829	0.552	0.276
52.80	1.416	1.133	0.850	0.567	0.283
61.00	1.437	1.150	0.862	0.575	0.287
69.20	1.454	1.163	0.872	0.582	0.291
77.40	1.462	1.169	0.877	0.585	0.292
85.60	1.468	1.175	0.881	0.587	0.294
93.80	1.474	1.179	0.884	0.590	0.295
102.00	1.478	1.183	0.887	0.591	0.296
110.30	1.519	1.215	0.911	0.608	0.304
118.60	1.486	1.189	0.892	0.595	0.297
126.90	1.522	1.218	0.913	0.609	0.304
135.30	1.504	1.203	0.902	0.602	0.301
143.50	1.467	1.174	0.880	0.587	0.293
152.10	1.387	1.109	0.832	0.555	0.277
160.55	1.197	0.958	0.718	0.479	0.239
169.10	0.699	0.559	0.419	0.280	0.140
177.70	0.324	0.259	0.194	0.129	0.065
182 ⁽²⁾	0.307	0.245	0.184	0.123	0.061

Notes:

- (1) Position relative to the bottom end of the canister shell assembly.
- (2) The total heat load applied at the canister closure lid is equal to the applied canister linear heat generation rate multiplied by 10.0 inches (i.e., = $0.184 \times Q_{\text{Total}} \times 10''/150''$), as described in Reference 3.1.5, Table 3, note 1.

Table 4 - Storage System Short-Term Allowable Material Temperatures

Storage System Component	Component Material	Short-Term Temperature Limit (°F)⁽¹⁾
Canister Shell	Stainless Steel	1,000
W150 Thermal Shield	Coated aluminum	600
W150 Liner	Carbon Steel	1,000
W150 Concrete Wall	Concrete	350

Notes:

⁽¹⁾ Reference 3.1.1, Table 4-3.

5. CALCULATION METHODOLOGY

The temperature distributions within the W150 storage cask assembly and canister shell during the all-vents blocked accident condition are determined using the SINDA/FLUINT finite difference, lumped-parameter computer code (Reference 3.2.1). The SINDA/FLUINT computer model is used to simulate both steady-state and transient heat transfer via, conduction, convection, and radiation based on temperature-dependant material properties. Steady-state thermal analyses are performed to determine the initial temperature distributions within the storage system prior to the all-vents blocked accident condition. Transient thermal analyses are used to determine the temperature distributions and heat-up rates within the storage system after blockage of the W150 cask inlet and outlet vents.

The SINDA/FLUINT computer model of the FuelSolutions™ storage system used for the all-vents blocked accident thermal analysis is described in References 3.1.1 and 3.1.2. The same analysis methodology used for the design-basis all-vents blocked accident thermal analysis in Reference 3.1.1 is applied in this calculation package. The primary difference between the design-basis all-vents blocked accident thermal analysis in Reference 3.1.1 and the analyses provided in this calculation package is the magnitude of the canister heat load.

Coding within the SINDA/FLUINT computer model of the FuelSolutions™ storage system evaluates the flow velocities within both the inner and outer annular gaps during every iteration and computes the associated convective heat transfer coefficient depending on whether the flow is laminar or turbulent. If natural convection effects are found to be significant in relation to the forced convection flow, the buoyancy assisted coefficient is computed as well. A minimum heat transfer coefficient based on conduction only (i.e., a Nusselt number = 1.0) is assumed for the annular gaps. The thermal model is then updated for the computed flow rates and convection coefficients and the solution re-computed. This process continues until convergence is reached.

6. CALCULATIONS

The design-basis blocked vent accident thermal analysis for the W150 storage cask is performed for a maximum canister heat load of 28 kW in Reference 3.1.1. The results of the design-basis blocked vent accident thermal analysis show that the short-term temperature limit of the reinforced concrete is limiting and is reached at 41 hours after blockage of the cask vents. Based on these results, a daily (24-hour) cask inspection interval was determined to be sufficient to meet the continuous monitoring requirements of 10CFR72.122(h)(4) [Design Input 2.1.1] for W150 cask systems with design-basis heat load.

This calculation package establishes longer cask inspection intervals that may be used by licensees having W150 cask with heat loads that are lower than the design-basis value of 28 kW. Blocked vent accident thermal analyses are performed for reduced canister heat loads of 25 kW, 20 kW, 15 kW, 10 kW, and 5 kW in Section 6.1. These blocked vent accident thermal analyses are performed using the same computer model and analysis methodology employed in the design-basis thermal analysis described in Reference 3.1.1, with only reductions to the canister decay heat loads. The results of these reduced heat load blocked-vent accident thermal analyses are used to establish the corresponding maximum cask inspection intervals, as described in Section 6.3.

6.1 Reduced Heat Load Blocked Vent Accident Thermal Analyses

This section discusses the various blocked vent accident cases analyzed and the corresponding thermal results for reduced canister heat loads of 25 kW, 20 kW, 15 kW, 10 kW, and 5 kW. In each case, the time required to reach the limiting material short-term temperature limit is determined. These results are summarized in Table 11.

6.1.1 25 kW Canister Heat Load (Case 11a)

A blocked vent accident thermal analysis of the W150 storage cask was performed for a canister payload with a total decay heat of 25 kW using the analytical methodology described in Section 5. The canister decay heat load is applied to the surface of the canister volume using the axial profile from the design basis 28 kW heat load case, as described in Sections 4.2.1 and 4.3. Due to conservatism in the assumed canister decay heat load profile, the actual total heat load applied to the model for this analysis is 26.09 kW.

A time-history plot of the temperatures at key locations within the storage system during the blocked vent transient is shown in Figure 1. In addition, Table 5 provides a summary of the maximum temperatures within the storage system during the pre-blockage steady-state conditions and the post-blockage temperatures at the time that the limiting material allowable temperature is reached. The results of the 25 kW blocked vent accident thermal analysis show that the limiting material short-term allowable temperature (i.e., the local concrete temperature limit of 350°F) is reached at approximately 52 hours (2 days + 4 hours) after blockage of the cask vents. Figure 2 shows the axial temperature distribution within the cask at 50 hours into the thermal transient. The radial temperature distribution through the hottest section of the W150 cask wall at 50 hours into the thermal transient is shown in Figure 3.

6.1.2 20 kW Canister Heat Load (Case 11b)

A blocked vent accident thermal analysis of the W150 storage cask was performed for a canister payload with a total decay heat of 20 kW using the analytical methodology described in Section 5. The canister decay heat load is applied to the surface of the canister volume using the axial profile from the design basis 28 kW heat load case, as described in Sections 4.2.1 and 4.3. Due to conservatism in the assumed canister decay heat load profile, the actual total heat load applied to the model for this analysis is 20.87 kW.

A time-history plot of the temperatures at key locations within the storage system during the blocked vent transient is shown in Figure 4. In addition, Table 6 provides a summary of the maximum temperatures within the storage system during the pre-blockage steady-state conditions and the post-blockage temperatures at the time that the limiting material allowable temperature is reached. The results of the 20 kW blocked vent accident thermal analysis show that the limiting material short-term allowable temperature (i.e., the local concrete temperature limit of 350°F) is reached at 80 hours (3 days + 8 hours) after blockage of the cask vents. Figure 5 shows the axial temperature distribution within the cask at 80 hours into the thermal transient. The radial temperature distribution through the hottest section of the W150 cask wall at 80 hours into the thermal transient is shown in Figure 6.

6.1.3 15 kW Canister Heat Load (Case 11c)

A blocked vent accident thermal analysis of the W150 storage cask was performed for a canister payload with a total decay heat of 15 kW using the analytical methodology described in Section 5. The canister decay heat load is applied to the surface of the canister volume using the axial profile from the design basis 28 kW heat load case, as described in Sections 4.2.1 and 4.3. Due to conservatism in the assumed canister decay heat load profile, the actual total heat load applied to the model for this analysis is 15.65 kW.

A time-history plot of the temperatures at key locations within the storage system during the blocked vent transient is shown in Figure 7. In addition, Table 7 provides a summary of the maximum temperatures within the storage system during the pre-blockage steady-state conditions and the post-blockage temperatures at the time that the limiting material allowable temperature is reached. The results of the 15 kW blocked vent accident thermal analysis show that the limiting material short-term allowable temperature (i.e., the local concrete temperature limit of 350°F) is reached at 146 hours (6 days + 2 hours) after blockage of the cask vents. Figure 8 shows the axial temperature distribution within the cask at 146 hours into the thermal transient. The radial temperature distribution through the hottest section of the W150 cask wall at 146 hours into the thermal transient is shown in Figure 9.

6.1.4 10 kW Canister Heat Load (Case 11d)

A blocked vent accident thermal analysis of the W150 storage cask was performed for a canister payload with a total decay heat of 10 kW using the analytical methodology described in Section 5. The canister decay heat load is applied to the surface of the canister volume using the axial profile from the design basis 28 kW heat load case, as described in Sections 4.2.1 and 4.3. Due to

conservatisms in the assumed canister decay heat load profile, the actual total heat load applied to the model for this analysis is 10.43 kW.

A time-history plot of the temperatures at key locations within the storage system during the blocked vent transient is shown in Figure 10. In addition, Table 8 provides a summary of the maximum temperatures within the storage system during the pre-blockage steady-state conditions and the post-blockage temperatures at the time that the limiting material allowable temperature is reached. The results of the 10 kW blocked vent accident thermal analysis show that the limiting material short-term allowable temperature (i.e., the local concrete temperature limit of 350°F) is never reached, even under steady-state conditions. The peak concrete temperature at 360 hours (15 days) after blockage of the cask vents is 327°F. Figure 11 shows the axial temperature distribution within the cask at 360 hours into the thermal transient. The radial temperature distribution through the hottest section of the W150 cask wall at 360 hours into the thermal transient is shown in Figure 12.

6.1.5 5 kW Canister Heat Load (Case 11e)

A blocked vent accident thermal analysis of the W150 storage cask was performed for a canister payload with a total decay heat of 5 kW using the analytical methodology described in Section 5. The canister decay heat load is applied to the surface of the canister volume using the axial profile from the design basis 28 kW heat load case, as described in Sections 4.2.1 and 4.3. Due to conservatisms in the assumed canister decay heat load profile, the actual total heat load applied to the model for this analysis is 5.22 kW.

A time-history plot of the temperatures at key locations within the storage system during the blocked vent transient is shown in Figure 13. In addition, Table 9 provides a summary of the maximum temperatures within the storage system during the pre-blockage steady-state conditions and the post-blockage temperatures at the time that the limiting material allowable temperature is reached. The results of the 5 kW blocked vent accident thermal analysis show that the limiting material short-term allowable temperature (i.e., the local concrete temperature limit of 350°F) is never reached, even under steady-state conditions. The peak concrete temperature at 480 hours (20 days) after blockage of the cask vents is 230°F. Figure 14 shows the axial temperature distribution within the cask at 480 hours into the thermal transient. The radial temperature distribution through the hottest section of the W150 cask wall at 480 hours into the thermal transient is shown in Figure 15.

Table 5 - Storage Cask Blocked Vent Accident Maximum Temperatures, 25 kW (Case 11a)

Storage System Component	Calculated Temperatures ⁽¹⁾ (°F)		Allowable Material Temperature (°F)
	Pre-Blockage Steady-State	Post-Blockage (at 50 hours)	
Canister Shell	399	622	1,000
Inner Air Gap	190	546	---
Thermal Shield	246	523	600
Outer Air Gap	171	467	---
Liner	161	347	1,000
Liner Thermocouple	144	332	---
Local (Peak) Concrete	161	345 ⁽²⁾	350
Concrete Thermocouple	123	168	---

Notes:

⁽¹⁾ Data source: P034N_BigRock_BV_25kw.dc11.

⁽²⁾ As shown in Figure 1, the concrete short-term allowable temperature of 350°F is reached at 52 hours into the all vents blocked transient.

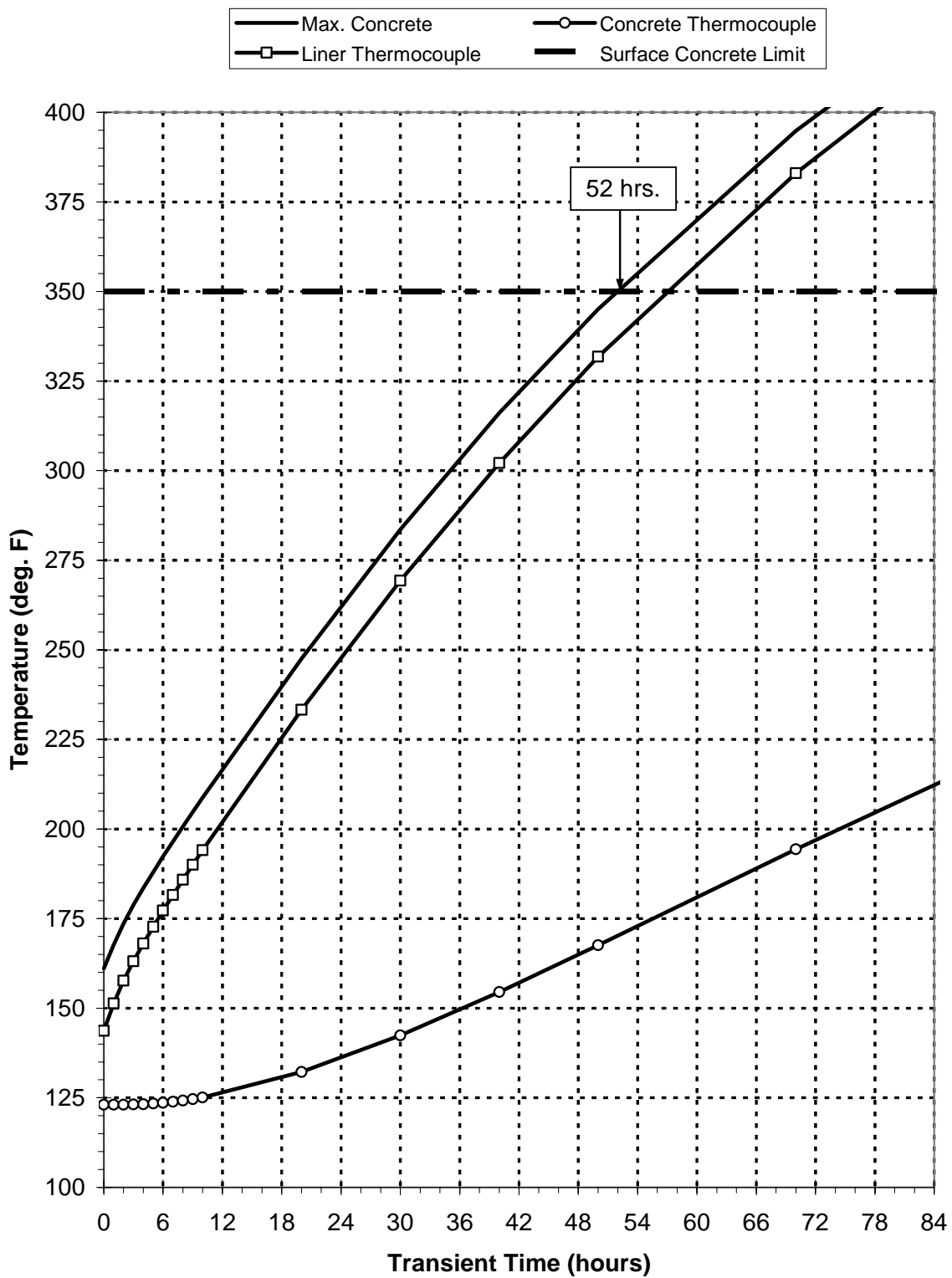


Figure 1 - Blocked Vent Transient Temperature Results, 25 kW (Case 11a)

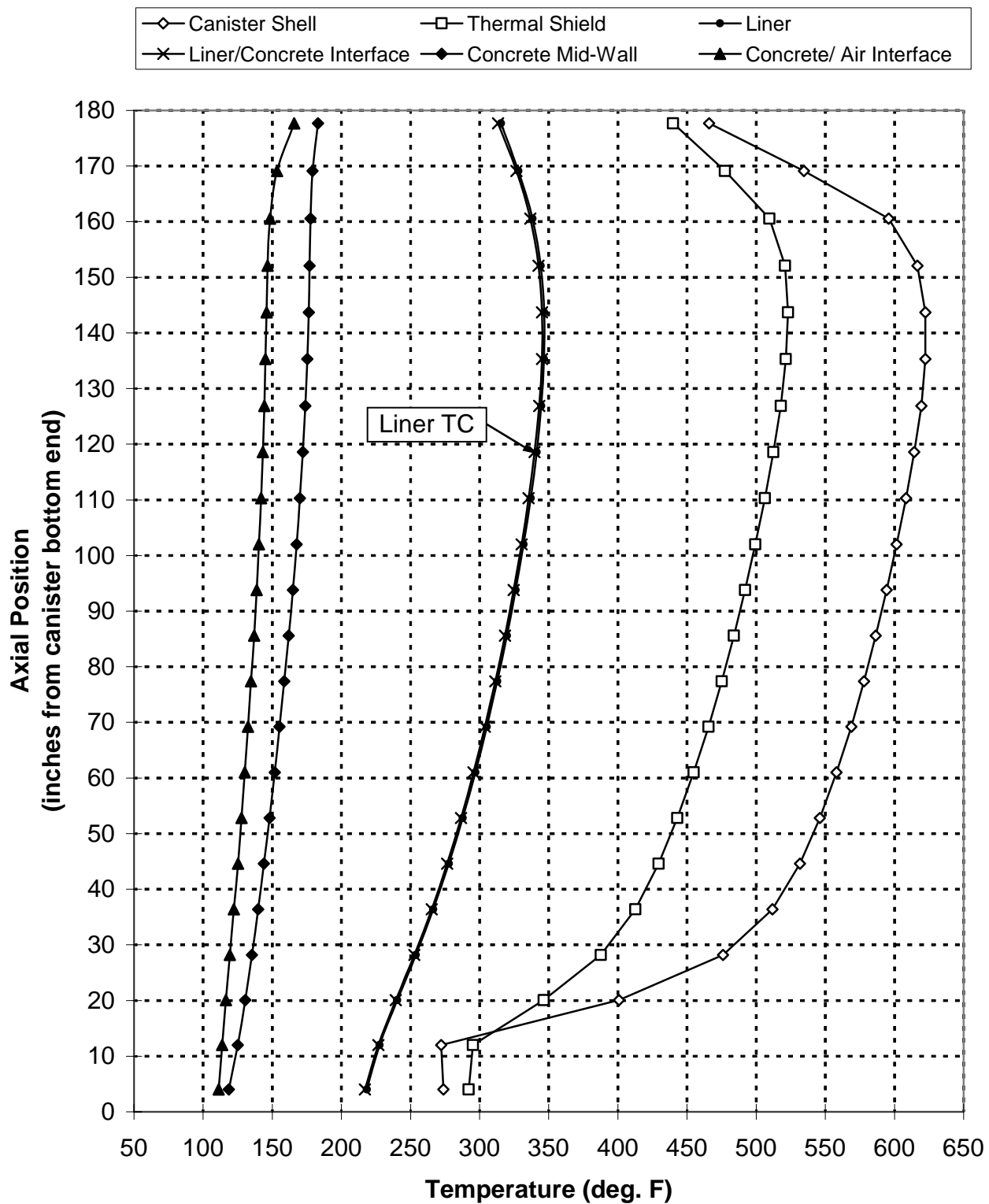
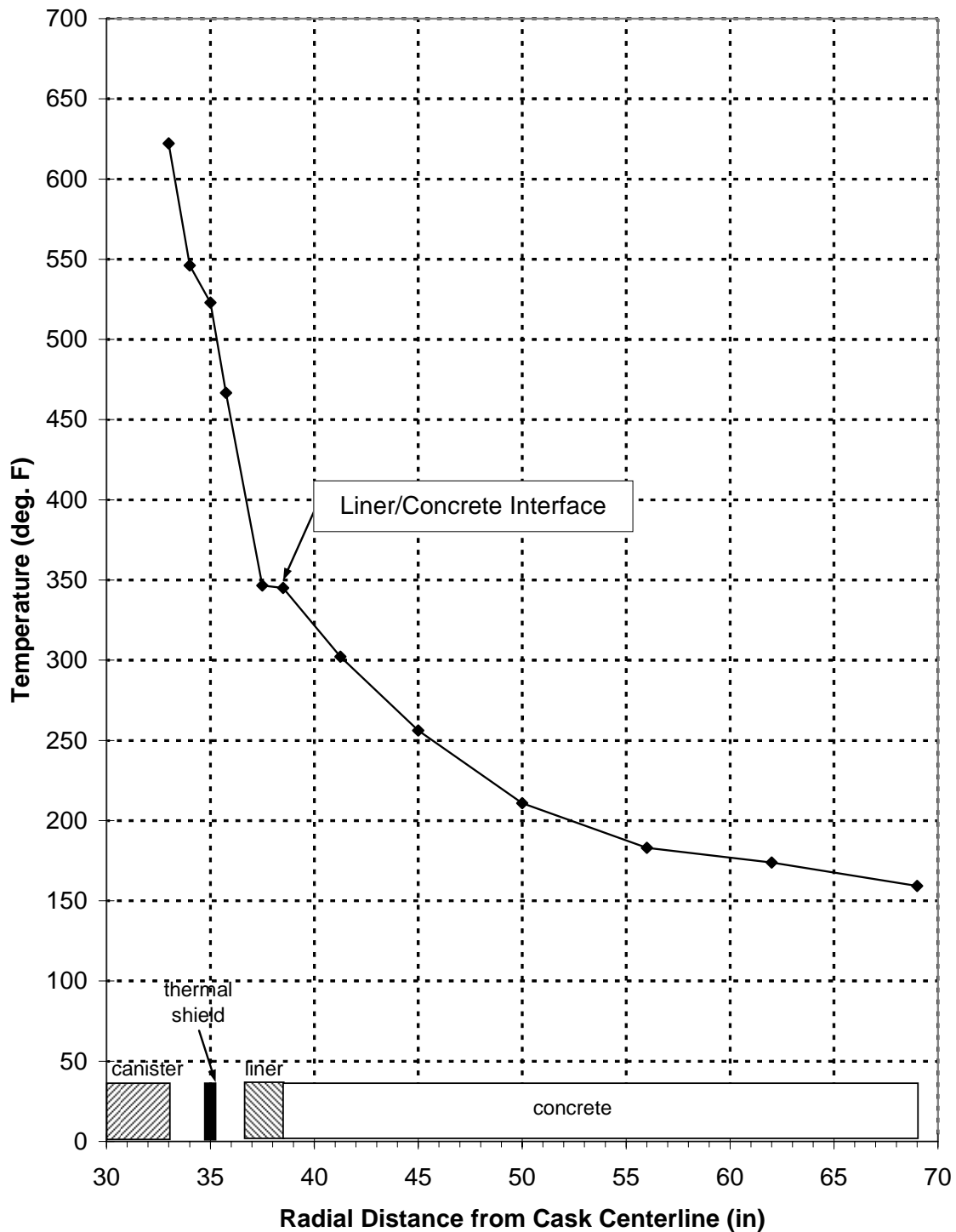


Figure 2 - Blocked Vent Axial Temperature Distribution @ 50 hours, 25 kW (Case 11a)



Note: Temperature distribution shown is through the hottest radial section.

Figure 3 - Blocked Vent Radial Temperature Distribution @ 50 hours, 25 kW (Case 11a)

**Table 6 - Storage Cask Blocked Vent Accident Maximum Temperatures,
20 kW (Case 11b)**

Storage System Component	Calculated Temperatures ⁽¹⁾ (°F)		Allowable Material Temperature (°F)
	Pre-Blockage Steady-State	Post-Blockage (at 80 hours)	
Canister Shell	355	587	1,000
Inner Air Gap	174	512	---
Thermal Shield	219	498	600
Outer Air Gap	158	454	---
Liner	149	348	1,000
Liner Thermocouple	133	335	---
Local (Peak) Concrete	149	347	350
Concrete Thermocouple	118	184	---

Notes:

⁽³⁾ Data source: P034N_BigRock_BV_20kw.dc11.

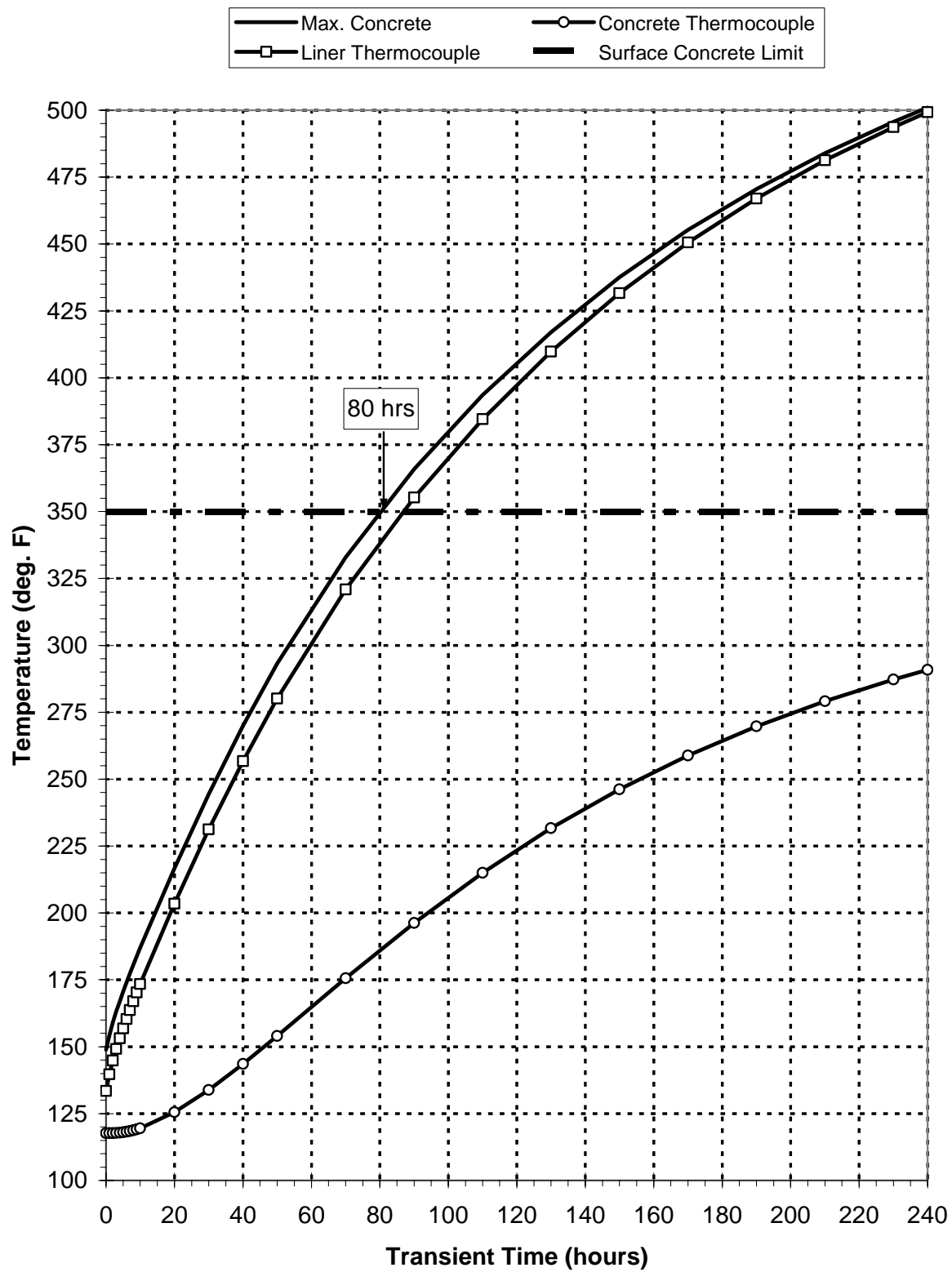


Figure 4 - Blocked Vent Transient Temperature Results, 20 kW (Case 11b)

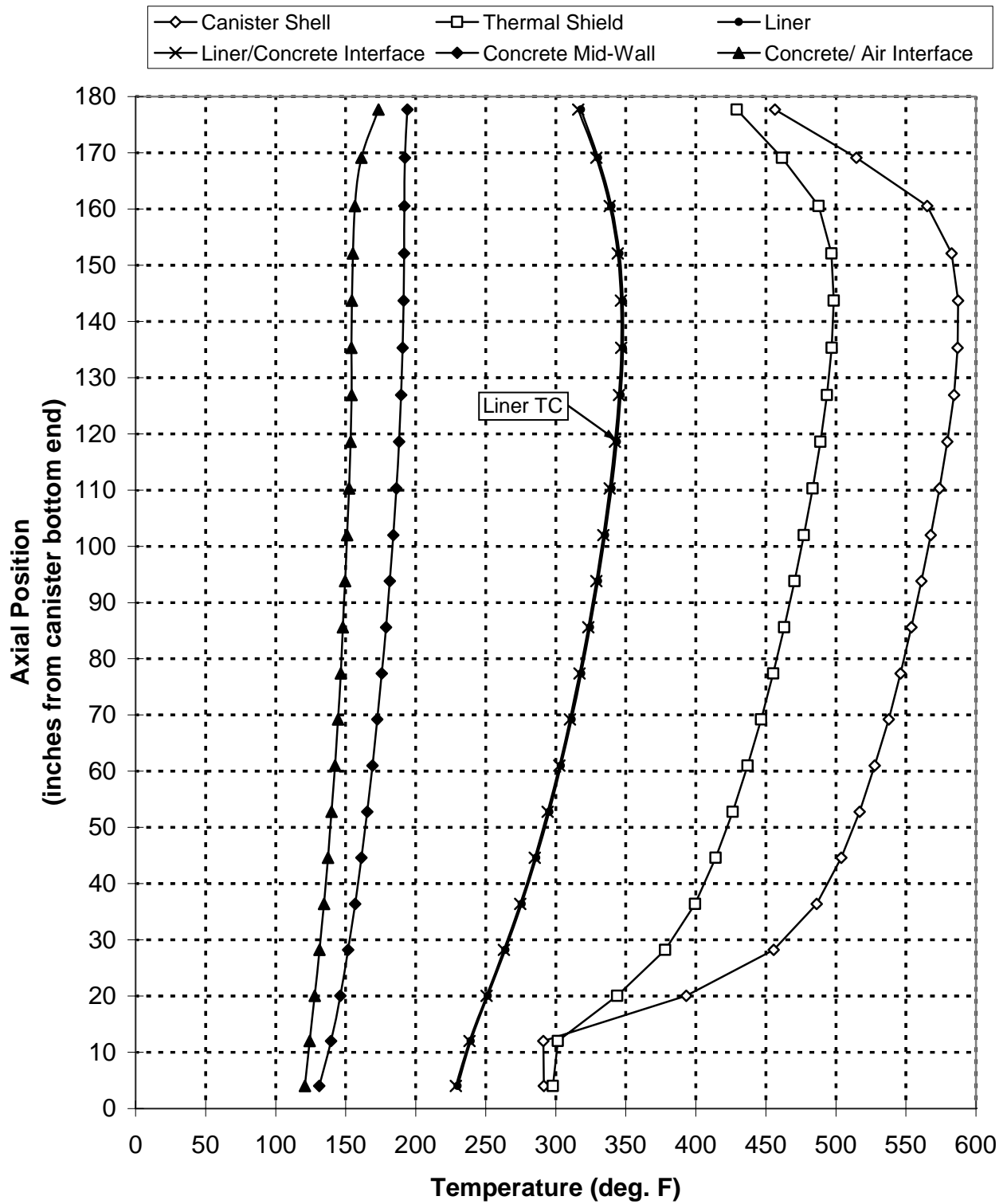
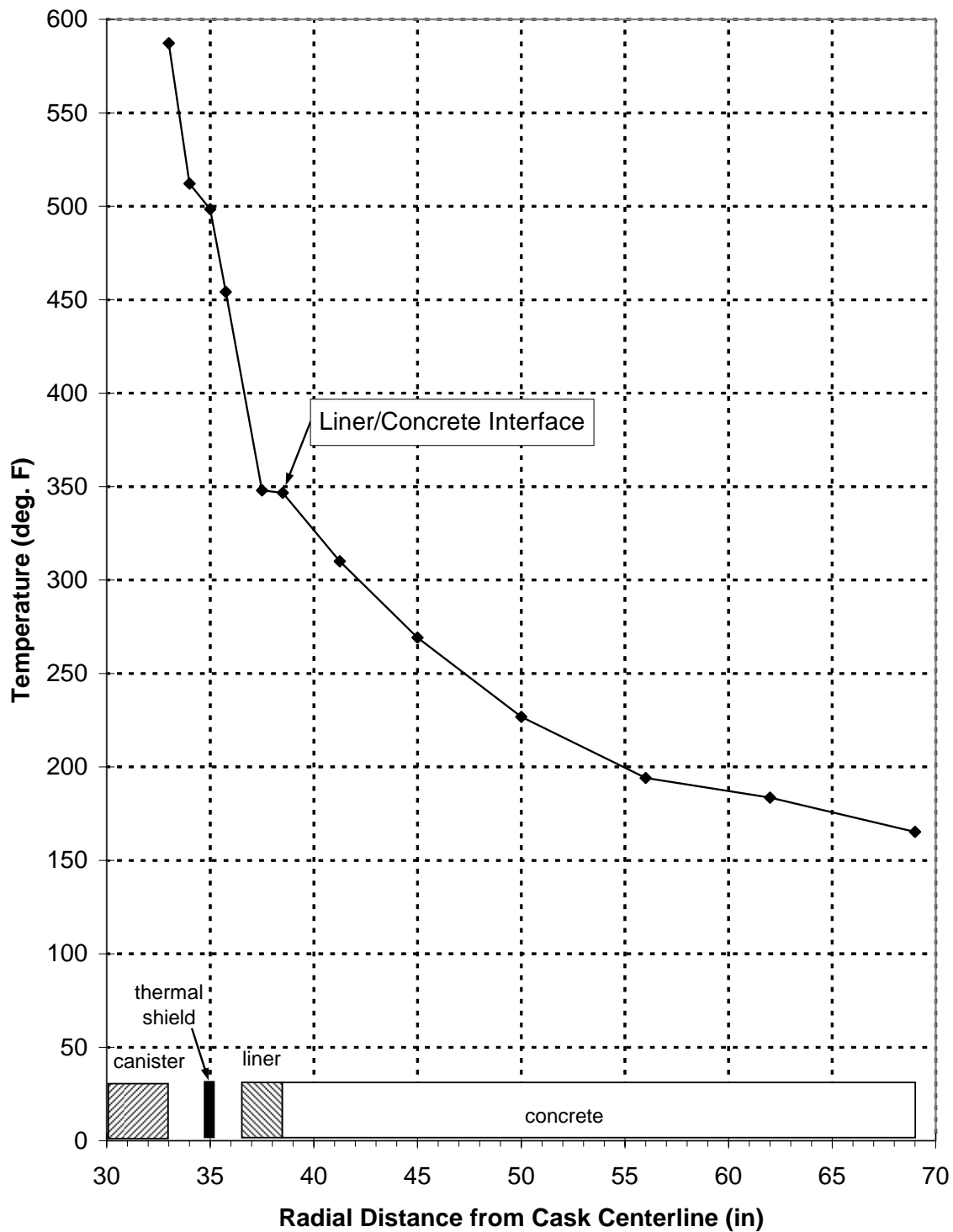


Figure 5 - Blocked Vent Axial Temperature Distribution @ 80 hours, 20 kW (Case 11b)



Note: Temperature distribution shown is through the hottest radial section.

Figure 6 - Blocked Vent Radial Temperature Distribution @ 80 hours, 20 kW (Case 11b)

**Table 7 - Storage Cask Blocked Vent Accident Maximum Temperatures,
15 kW (Case 11c)**

Storage System Component	Calculated Temperatures ⁽¹⁾ (°F)		Allowable Material Temperature (°F)
	Pre-Blockage Steady-State	Post-Blockage (at 146 hours)	
Canister Shell	307	547	1,000
Inner Air Gap	157	484	---
Thermal Shield	191	471	600
Outer Air Gap	144	434	---
Liner	137	351	1,000
Liner Thermocouple	123	342	---
Local (Peak) Concrete	137	350	350
Concrete Thermocouple	112	209	---

Notes:

⁽¹⁾ Data source: P034N_BigRock_BV_15kw.dc11.

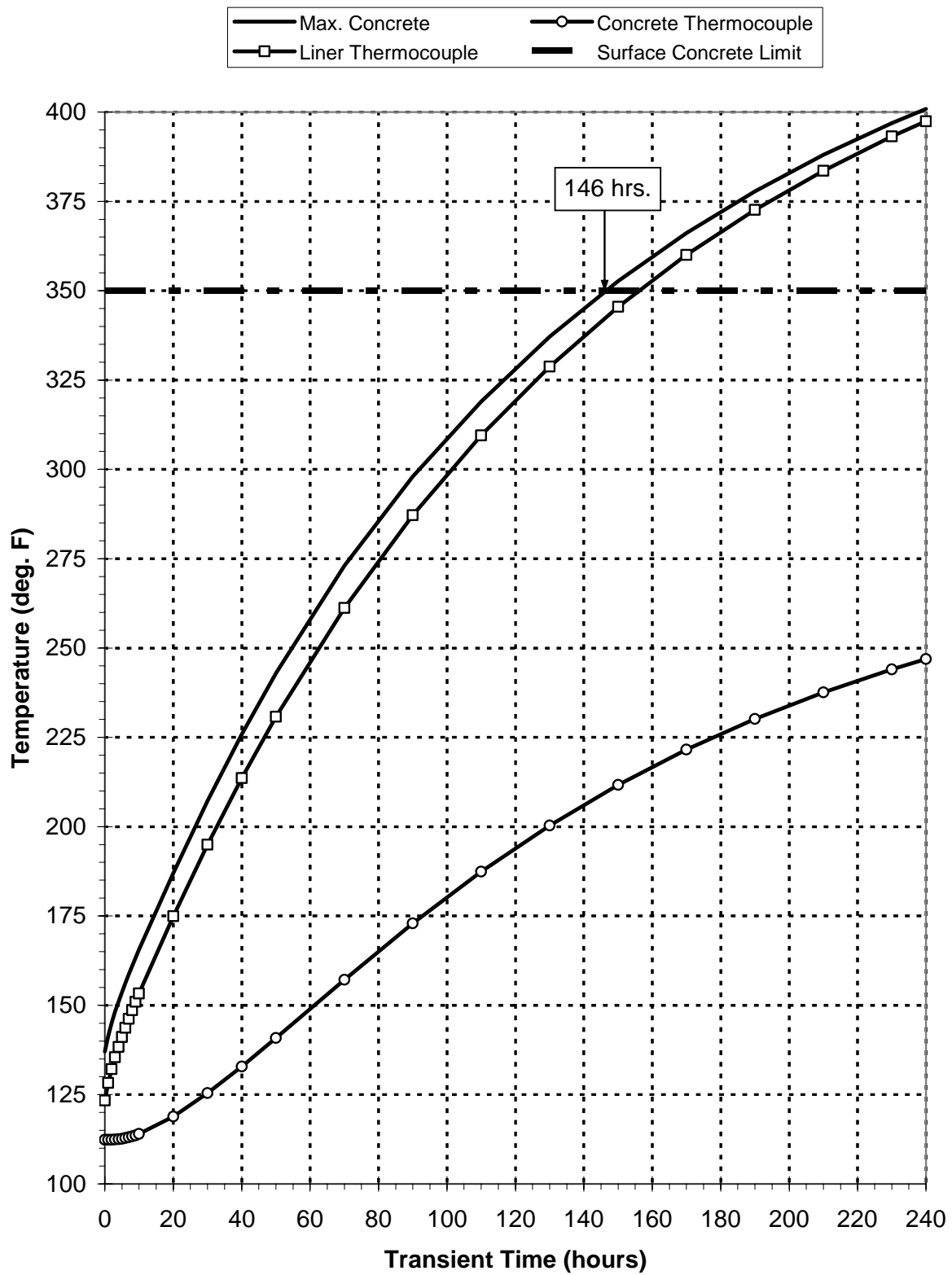


Figure 7 - Blocked Vent Transient Temperature Results, 15 kW (Case 11c)

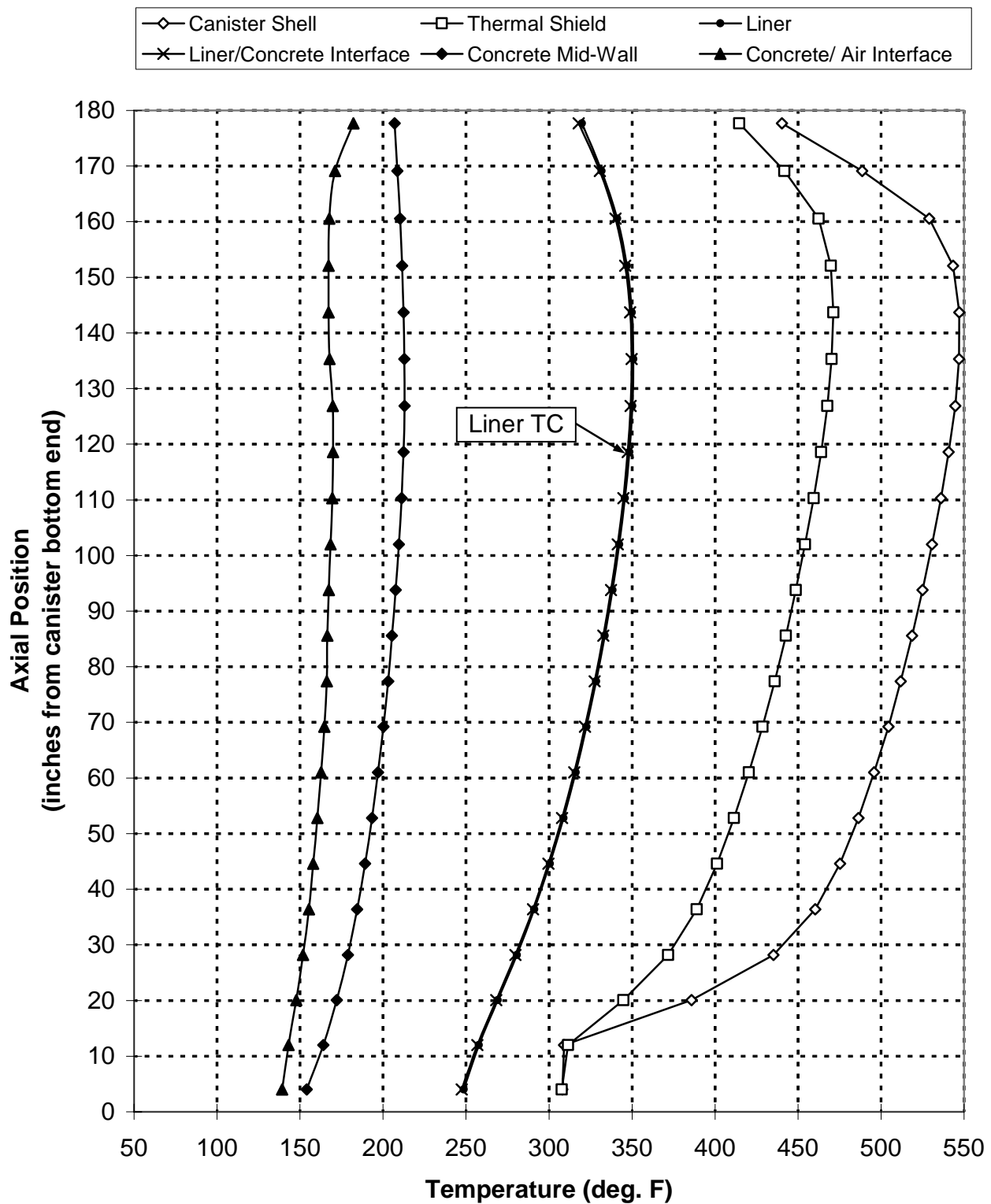
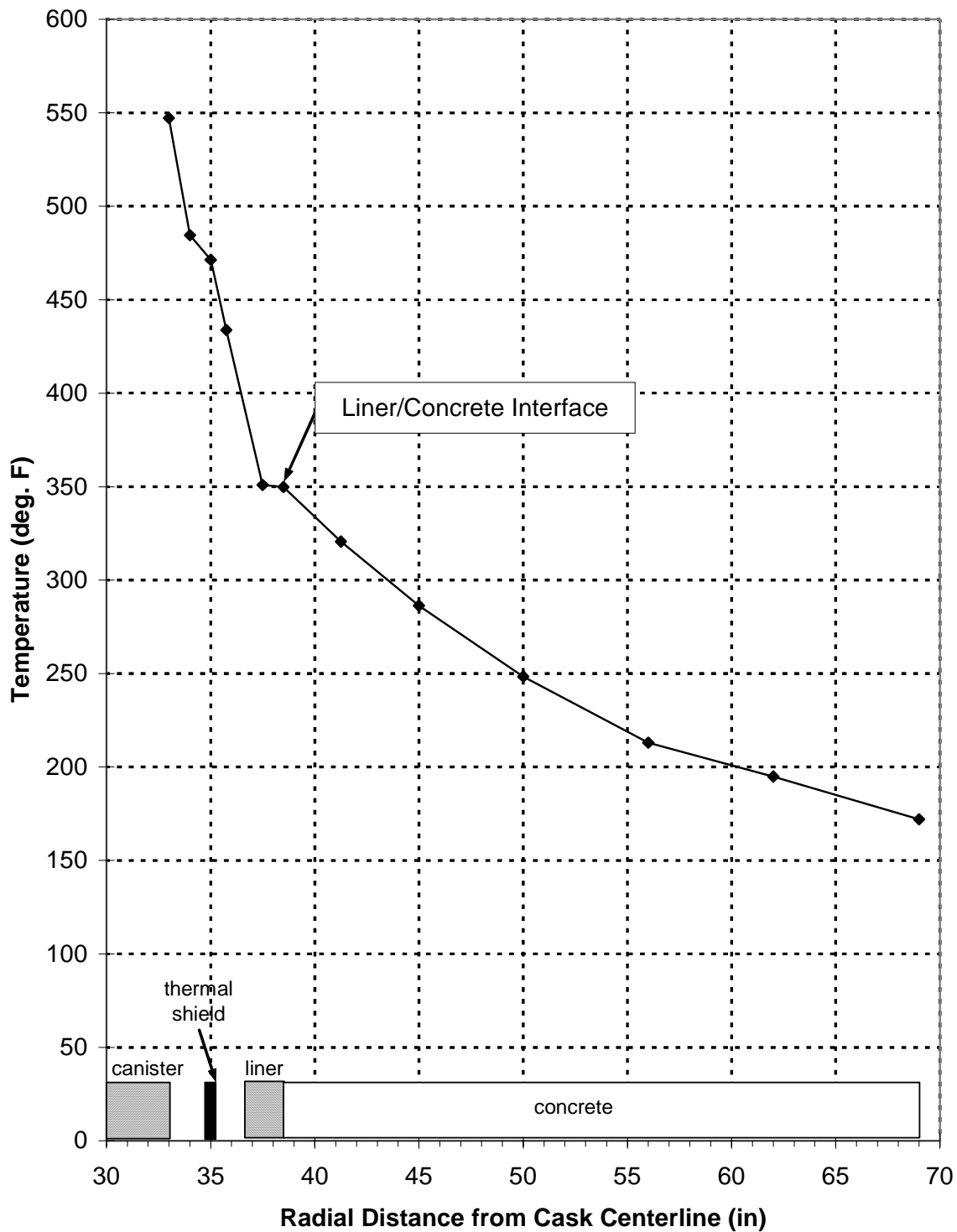


Figure 8 - Blocked Vent Axial Temperature Distribution @ 146 hours, 15 kW (Case 11c)



Note: Temperature distribution shown is through the hottest radial section.

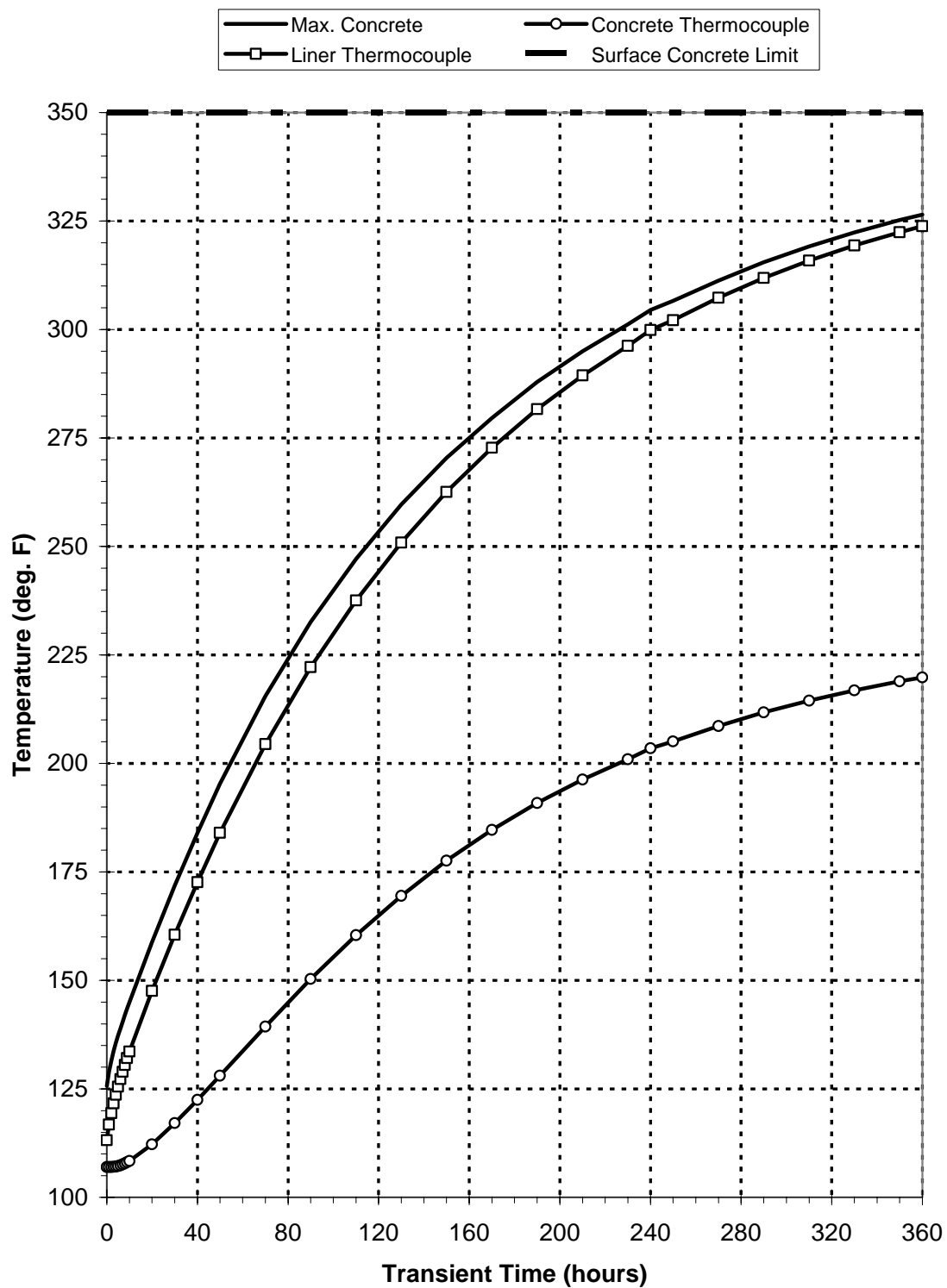
Figure 9 - Blocked Vent Radial Temperature Distribution @ 146 hours, 15 kW (Case 11c)

**Table 8 - Storage Cask Blocked Vent Accident Maximum Temperatures,
10 kW (Case 11d)**

Storage System Component	Calculated Temperatures ⁽¹⁾ (°F)		Allowable Material Temperature (°F)
	Pre-Blockage Steady-State	Post-Blockage (at 360 hours)	
Canister Shell	252	481	1,000
Inner Air Gap	138	425	---
Thermal Shield	162	419	600
Outer Air Gap	129	393	---
Liner	126	327	1,000
Liner Thermocouple	113	324	---
Local (Peak) Concrete	126	326	350
Concrete Thermocouple	110	220	---

Notes:

⁽¹⁾ Data source: P034N_BigRock_BV_10kw.dc11.



**Figure 10 - Blocked Vent Transient Temperature Results, 10 kW
(Case 11d)**

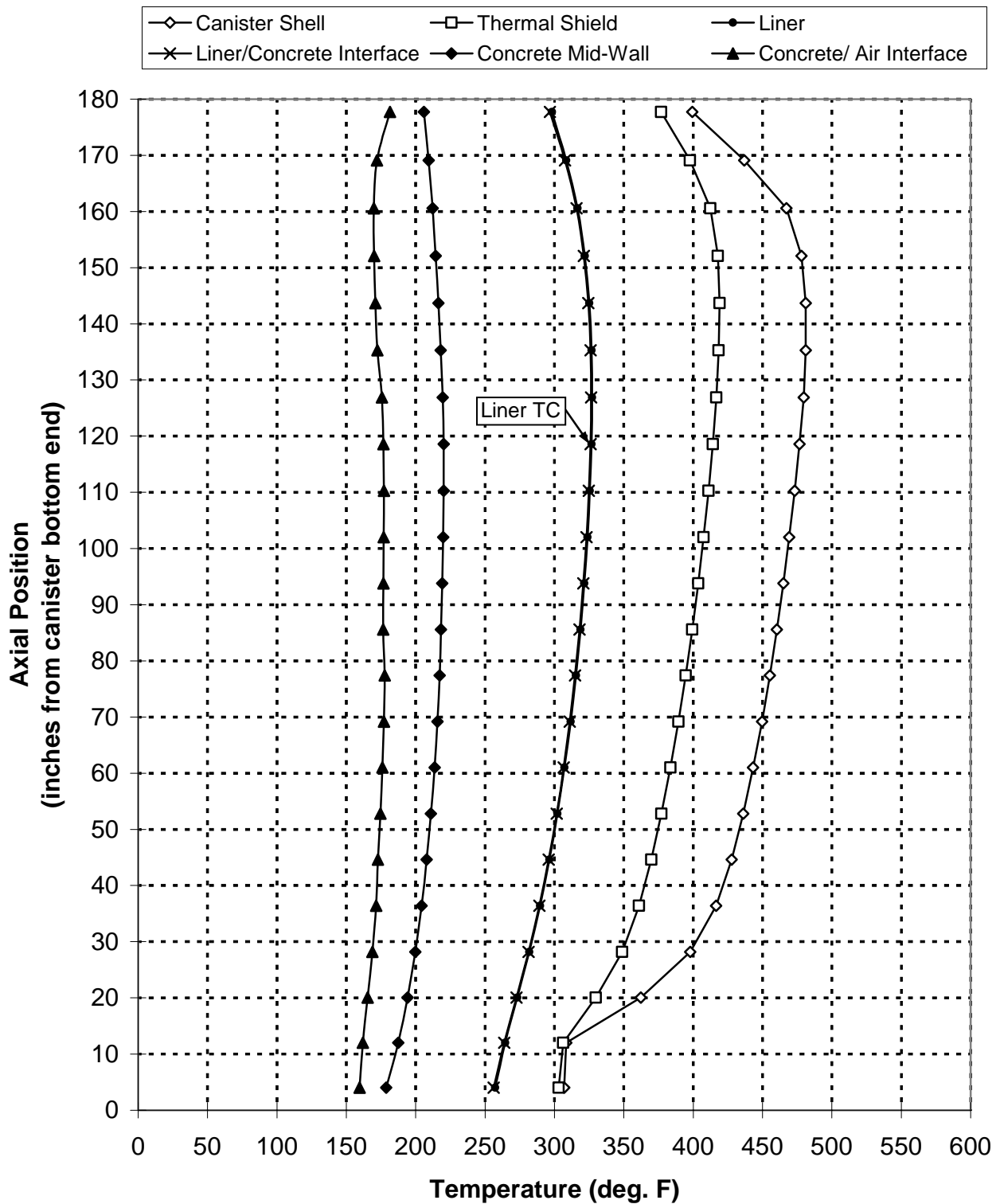
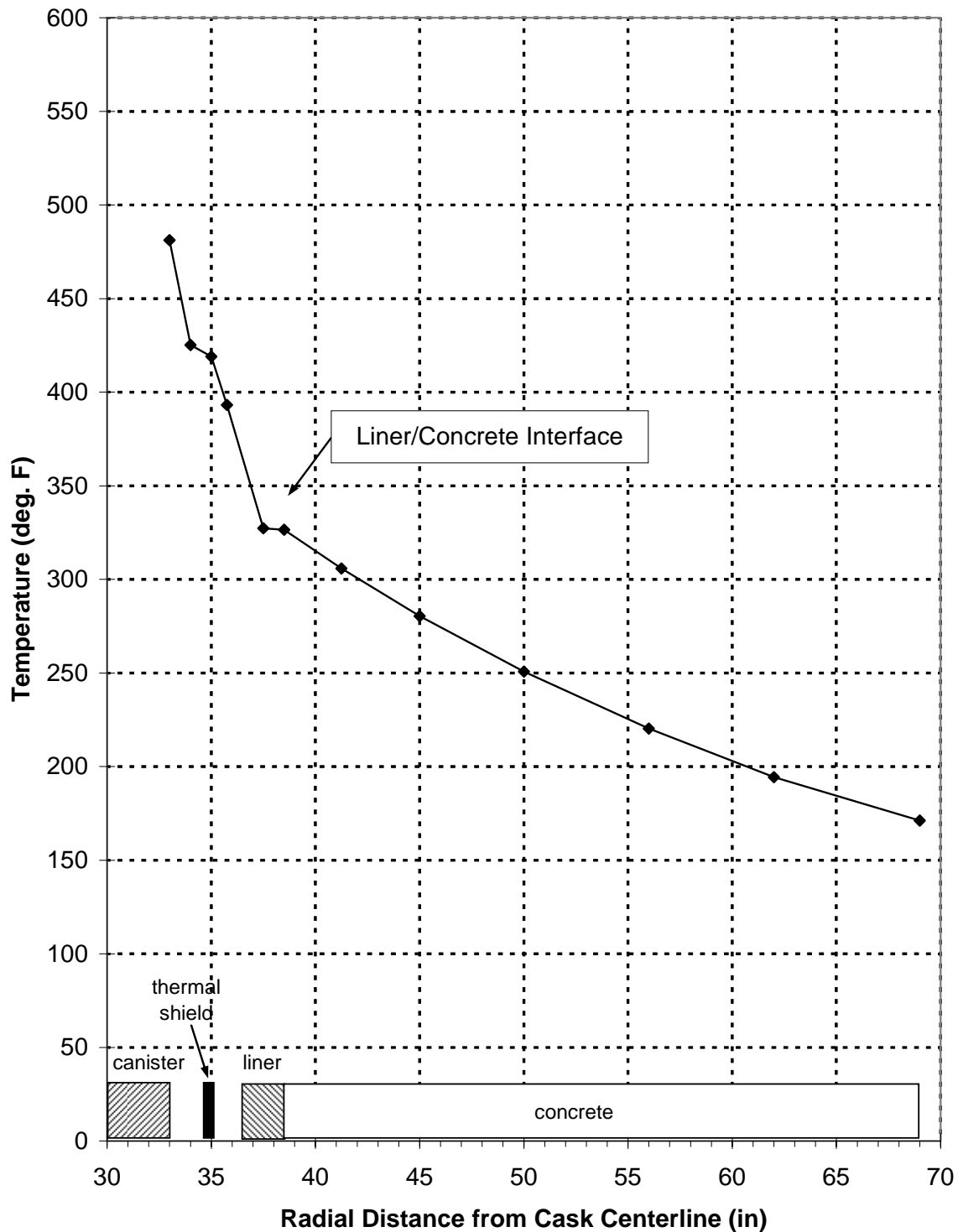


Figure 11 - Blocked Vent Axial Temperature Distribution @ 360 hours, 10 kW (Case 11d)



Note: Temperature distribution shown is through the hottest radial section.

Figure 12 - Blocked Vent Radial Temperature Distribution @ 360 hours, 10 kW (Case 11d)

**Table 9 - Storage Cask Blocked Vent Accident Maximum Temperatures,
5 kW (Case 11e)**

Storage System Component	Calculated Temperatures ⁽¹⁾ (°F)		Allowable Material Temperature (°F)
	Pre-Blockage Steady-State	Post-Blockage (at 480 hours)	
Canister Shell	185	335	1,000
Inner Air Gap	116	304	---
Thermal Shield	129	291	600
Outer Air Gap	111	276	---
Liner	114	230	1,000
Liner Thermocouple	103	227	---
Local (Peak) Concrete	114	230	350
Concrete Thermocouple	101	175	---

Notes:

⁽¹⁾ Data source: P034N_BigRock_BV_5kw.dc11.

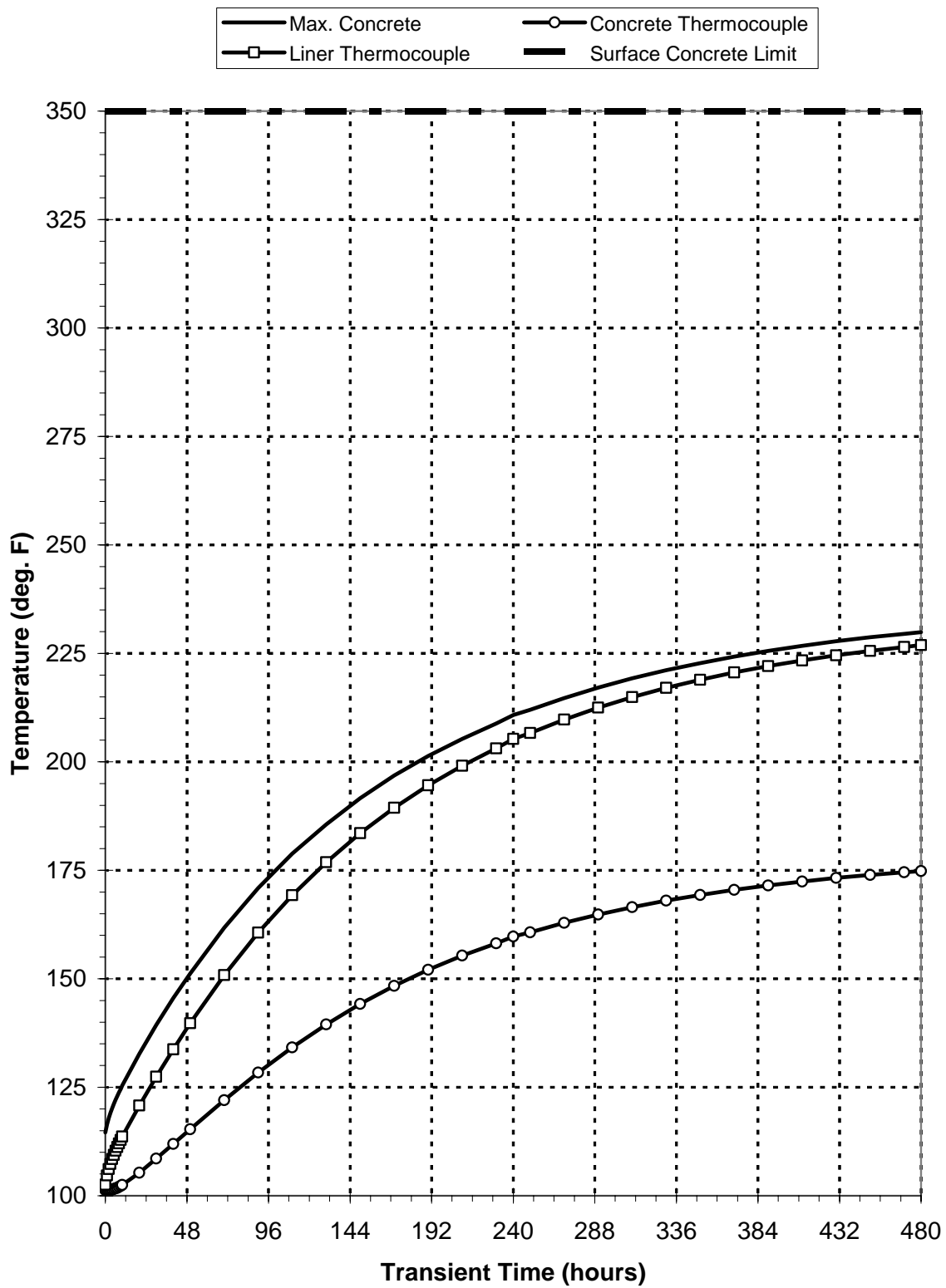


Figure 13 - Blocked Vent Transient Temperature Results, 5 kW (Case 11e)

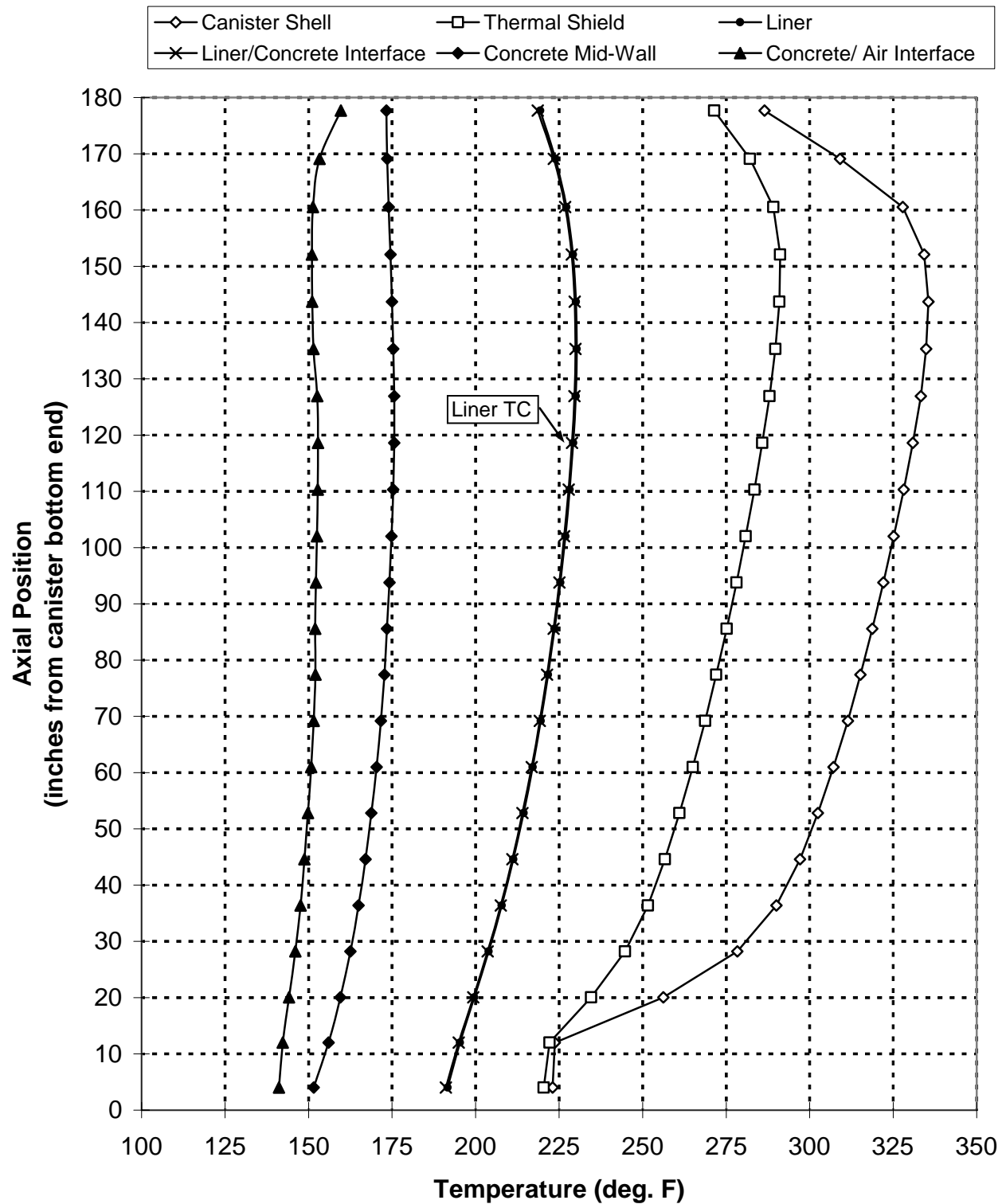
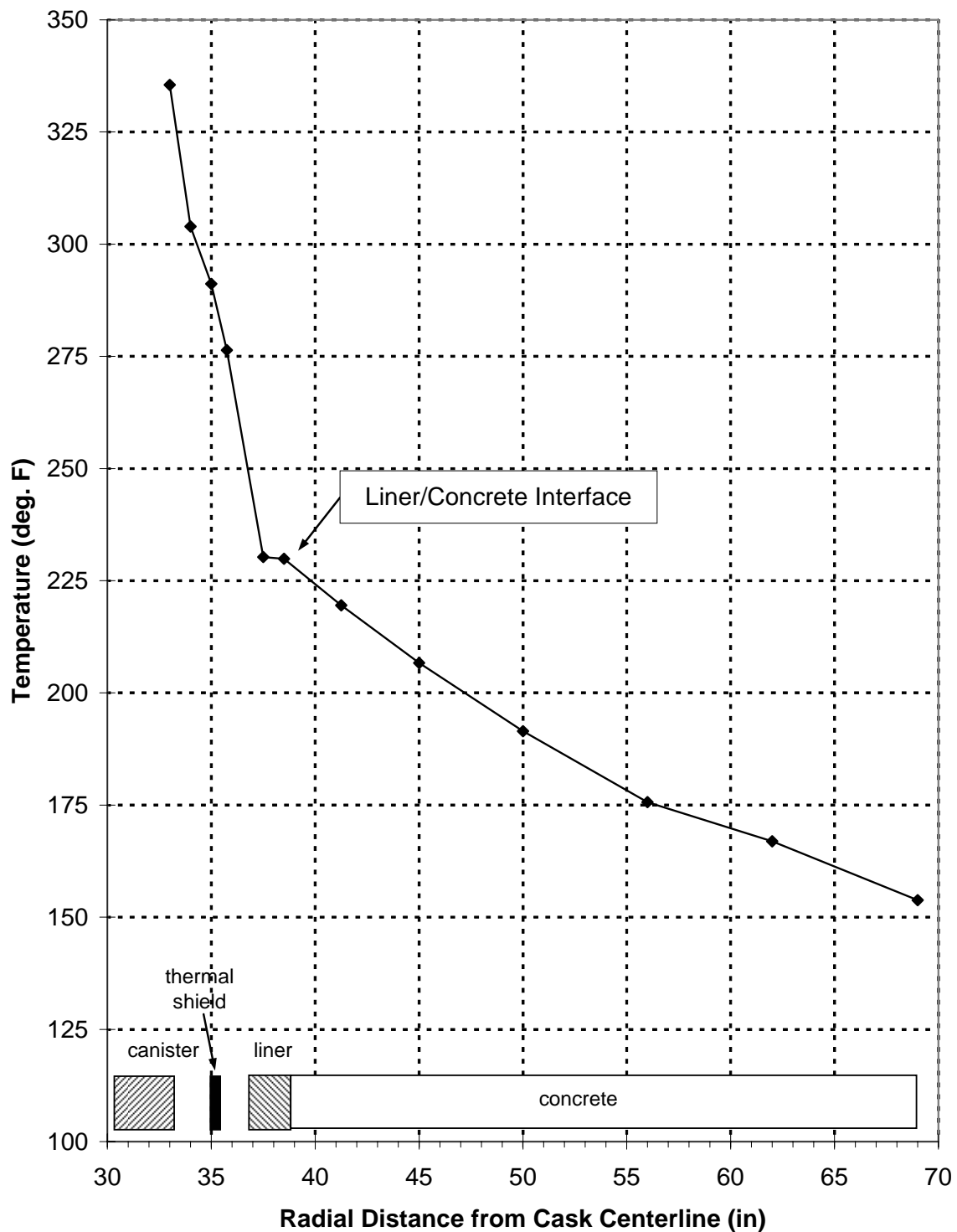


Figure 14 - Blocked Vent Axial Temperature Distribution @ 480 hours, 5 kW (Case 11e)



Note: Temperature distribution shown is through the hottest radial section.

Figure 15 - Blocked Vent Radial Temperature Distribution @ 480 hours, 5 kW (Case 11e)

6.2 Applicability to FuelSolutions™ Canisters

This section discusses the applicability of the reduced-heat blocked vent thermal analysis results presented in this calculation package to the W21 and W74 canisters. The applicability is determined by comparing the time calculated to reach the limiting system temperature under blocked vent conditions. The results presented in this calculation and the W21 and W74 canister thermal qualification calculations (References 3.1.3 and 3.1.4, respectively) all show that the short-term local (peak) temperature limit of 350°F for concrete is limiting by a wide margin.

As shown in Table 10 and discussed below, the results demonstrate that the generic blocked vent thermal analyses presented in this calculation bound those from the W21 canister and W74 canister blocked vent thermal analyses for comparable heat loads (i.e., the short-term concrete temperature is reached faster). This is due to the conservative modeling assumptions used in the generic blocked vent thermal model. The primary difference between the generic blocked vent thermal model and the detailed models used for the W21 and W74 canister blocked vent analyses is the canister sub-model. The generic model includes the canister shell assembly, but not the canister internals or SNF payload, whereas the detailed models used for the W21 and W74 canister evaluations include the canister basket assemblies and SNF payload. Consequently, for the generic model the heat load from the canister internals is distributed to the canister shell. This conservatively neglects the thermal mass of the canister internals which tends to spread the decay heat axially over the length of the canister shell and adds to the thermal inertia of the cask system, thus slowing the rate of temperature change. This can be seen in the results presented in Table 10, which show that the peak concrete temperature limit is reached in 52 hours for the generic blocked vent analysis with a decay heat load of 25 kW, whereas, the detailed blocked vent analyses for the W21 and W74 canisters, which both have higher design-basis heat loads, take 60 hours and 58 hours, respectively, to reach the concrete short-term temperature limit. Therefore, application of the results from the generic reduced-heat blocked vent thermal analyses to the W21 and W74 canisters is conservative.

Table 10 - Comparison of Limiting Blocked-Vent Temperatures

Blocked Vent Analysis	Design-Basis Heat Load (kW)	Time to Reach Temperature Limit (hours)	Local (Peak) Concrete Temperature (°F)
Generic ⁽¹⁾	25.0	52	350
W21 Canister ⁽²⁾	25.1	60	350
W74 Canister ⁽³⁾	26.4	58	350

Notes:

⁽¹⁾ Refer to Section 6.1.1.

⁽²⁾ References 3.1.3, Table 6-10.

⁽³⁾ References 3.1.4, Table 6-8.

6.3 Maximum Vent Inspection Intervals

The FuelSolutions™ storage system is designed with a heat-removal capability that is reliable and testable, in accordance with the requirements of 10CFR72.128(a)(4) [Design Input 2.1.1]. In addition, the W150 storage cask is equipped with thermocouples located on the cask liner and at the mid-thickness of the reinforced concrete wall, providing the capability to test and monitor the storage system in accordance with the requirements of 10CFR72.128(a)(1) [Design Input 2.1.1].

In accordance with 10CFR72.122(h)(4) [Design Input 2.1.1], periodic monitoring is required for dry spent fuel storage in a manner such that the licensee will be able to determine when corrective action needs to be taken to maintain safe storage conditions. The monitoring period must be based on the spent fuel storage cask design requirements. Because the W150 storage cask relies only on passive convective cooling for heat-removal, the only credible scenario that could require corrective action to be taken to maintain safe storage conditions is blockage of the W150 cask inlet and/or outlet vents. Detection of cask vent blockage is accomplished either by visual inspection of the vent screens or monitoring of the cask temperature using the liner thermocouple. Either method satisfies the periodic inspection requirement for the W150 cask.

The required inspection interval is specified as a whole-day increment that is at least 25% shorter than the time required to reach the limiting short-term allowable temperature of the storage system. This criteria provides a practical inspection interval for the licensees and sufficient margin to allow corrective actions to be taken to maintain safe storage conditions. Table 11 summarizes the results of the reduced-heat blocked vent accident thermal analyses and the corresponding required vent inspection intervals.

The results of the thermal analysis show that for cask heat loads of 10 kW and lower, the peak concrete temperature never reaches the 350°F short-term temperature limit, even under steady-state all vents blocked conditions. Since it is not acceptable for concrete temperatures to exceed the long-term temperature limits indefinitely, the time that the concrete temperature is allowed to exceed the long-term temperature limit has been established in Section 4.2.2.

For the 10 kW and 5 kW cask heat loads, inspection intervals of 1-week and 2-weeks are proposed. As shown in Figure 10, the peak concrete temperature at the 168-hour (1-week) inspection interval is approximately 280°F, at which time, the concrete temperature has exceeded the 200°F long-term temperature limit for less than 5 days. As discussed in Section 4.2.2, the peak concrete temperature is allowed to exceed the 200°F long-term temperature limit for up to 7 days, provided that the peak concrete temperature does not exceed 300°F during that period of time. Similarly, Figure 13 shows that the peak concrete temperature at the 336-hour (2-week) inspection interval is approximately 220°F, at which time, the concrete temperature has exceeded the 200°F long-term temperature limit for less than 7 days. As discussed in Section 4.2.2, the peak concrete temperature is allowed to exceed the 200°F long-term temperature limit for up to 14 days, provided that the peak concrete temperature does not exceed 250°F during that period of time.

Table 11 - Maximum Cask Inspection Intervals

Total Canister Heat Load, Q (kW)	Calculated Time to Reach Limiting Short-Term Allowable Temperature⁽¹⁾ (hr)	Maximum Cask Inspection Interval⁽²⁾ (hr)
$25.0 < Q \leq 28.0$	41 ⁽³⁾	24 (1 day)
$20.0 < Q \leq 25.0$	52	24 (1 day)
$15.0 < Q \leq 20.0$	80	48 (2 day)
$10.0 < Q \leq 15.0$	146	96 (4 day)
$5.0 < Q \leq 10.0$	N/A ⁽⁴⁾	168 (1 week) ⁽⁵⁾
$Q \leq 5.0$	N/A ⁽⁴⁾	336 (2 week) ⁽⁶⁾

Notes:

- ⁽¹⁾ Based on the highest total heat load in the specified range.
- ⁽²⁾ Maximum cask inspection interval is limited to the nearest whole-day increment that is less than 25% lower than the calculated time to reach the limiting storage system component short-term allowable temperature.
- ⁽³⁾ Reference 3.1.1, Section 6.2.3.
- ⁽⁴⁾ For cask heat loads of 10 kW and under, the concrete short-term temperature limit is never reached during the blocked vent condition.
- ⁽⁵⁾ As shown in Figure 10, the peak concrete temperature at the 168-hour (1-week) inspection is approximately 280°F, at which time, the concrete temperature has exceeded the 200°F long-term temperature limit for less than 5 days. As discussed in Section 4.2.2, the peak concrete temperature is allowed to exceed the 200°F long-term temperature limit for up to 7 days, provided that the peak concrete temperature does not exceed 300°F during that period of time.
- ⁽⁶⁾ As shown in Figure 13, the peak concrete temperature at the 336-hour (2-week) inspection is approximately 220°F, at which time, the concrete temperature has exceeded the 200°F long-term temperature limit for less than 7 days. As discussed in Section 4.2.2, the peak concrete temperature is allowed to exceed the 200°F long-term temperature limit for up to 14 days, provided that the peak concrete temperature does not exceed 250°F during that period of time.

7. CONCLUSIONS

7.1 Results

The results of the reduced heat blocked vent analyses show that the cask inspection intervals for casks having lower-than-design-basis heat loads can be lengthened. Table 11 provides a summary of the calculated time to reach the short-term peak concrete temperature limit and the corresponding proposed cask inspection interval for cask heat loads of 25 kW, 20 kW, 15 kW, 10 kW, and 5 kW.

7.2 Compliance With Requirements

The cask inspection intervals for the reduced cask heat loads satisfy the applicable requirement of 10CFR72 [Design Input 2.1.1] and the NRC guidance provided in NUREG-1536 [Reference 3.2.2].

7.3 Range of Validity

The results of this calculation package are bounding and valid for an all-vents blocked accident condition for both the long and short W150 storage cask configurations loaded with a corresponding thermally qualified FuelSolutions™ canister. These currently include all W21 and W74 canister configurations.

7.4 Summary of Conservatism

The sources of conservatism noted in this calculation package are as follow:

1. The manner in which the canister decay heat load is applied to the surface of the canister shell results in total applied heat loads that are over 4% greater than the indicated values.
2. The cask inspection interval for each cask heat load is taken as the nearest whole day increment that is at least 25% lower than the calculated time to reach the short-term peak concrete temperature limit of 350 °F.

7.5 Limitations or Special Instructions

None.

8. ELECTRONIC FILES

8.1 Computer Runs

Filename	File Date	Computer Code	Cat	Version	Platform	Machine
P034N_BigRock_BV_25kw.oc11	5/17/05	SINDA/FLUINT	2	4.6-1	PC-Windows	0008744FA7FC
P034N_BigRock_BV_25kw.dc11	5/17/05	SINDA/FLUINT	2	4.6-1	PC-Windows	0008744FA7FC
P034N_BigRock_BV_20kw.oc11	4/30/05	SINDA/FLUINT	2	4.6-1	PC-Windows	0008744FA7FC
P034N_BigRock_BV_20kw.dc11	4/30/05	SINDA/FLUINT	2	4.6-1	PC-Windows	0008744FA7FC
P034N_BigRock_BV_15kw.oc11	4/30/05	SINDA/FLUINT	2	4.6-1	PC-Windows	0008744FA7FC
P034N_BigRock_BV_15kw.dc11	4/30/05	SINDA/FLUINT	2	4.6-1	PC-Windows	0008744FA7FC
P034N_BigRock_BV_10kw.oc11	4/30/05	SINDA/FLUINT	2	4.6-1	PC-Windows	0008744FA7FC
P034N_BigRock_BV_10kw.dc11	4/30/05	SINDA/FLUINT	2	4.6-1	PC-Windows	0008744FA7FC
P034N_BigRock_BV_5kw.oc11	5/7/05	SINDA/FLUINT	2	4.6-1	PC-Windows	0008744FA7FC
P034N_BigRock_BV_5kw.dc11	5/7/05	SINDA/FLUINT	2	4.6-1	PC-Windows	0008744FA7FC

Run Descriptions:

P034N_BigRock_BV_25kw.oc11:	Generic all vents blocked transient thermal analysis, 25 kW, output, case 11
P034N_BigRock_BV_25kw.dc11:	Generic all vents blocked transient thermal analysis, 25 kW, data, case 11
P034N_BigRock_BV_20kw.oc11:	Generic all vents blocked transient thermal analysis, 20 kW, output, case 11
P034N_BigRock_BV_20kw.dc11:	Generic all vents blocked transient thermal analysis, 20 kW, data, case 11
P034N_BigRock_BV_15kw.oc11:	Generic all vents blocked transient thermal analysis, 15 kW, output, case 11
P034N_BigRock_BV_15kw.dc11:	Generic all vents blocked transient thermal analysis, 15 kW, data, case 11
P034N_BigRock_BV_10kw.oc11:	Generic all vents blocked transient thermal analysis, 10 kW, output, case 11
P034N_BigRock_BV_10kw.dc11:	Generic all vents blocked transient thermal analysis, 10 kW, data, case 11
P034N_BigRock_BV_5kw.oc11:	Generic all vents blocked transient thermal analysis, 5 kW, output, case 11
P034N_BigRock_BV_5kw.dc11:	Generic all vents blocked transient thermal analysis, 5 kW, data, case 11

8.2 Other Electronic Files

None.

9. ATTACHMENT A - SAMPLE COMPUTER OUTPUT

Run P034N_BigRock_BV_20kw.dc11, 20 kW Blocked Vent Analysis

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 0.0000000E+00

THE TEMPERATURES FOR THE SIDE NODES

CAN...AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	25.45	25.14	26.18	25.59	32.86	32.86	33.01	33.13	33.19	33.17	33.09	33.00	32.94
2.	25.56	25.18	26.46	26.08	33.60	33.61	33.79	33.92	33.96	33.87	33.70	33.53	33.42
3.	89.26	26.74	41.37	27.39	35.06	35.06	35.11	35.10	34.99	34.76	34.45	34.18	34.02
4.	125.96	29.26	54.67	29.40	36.99	36.98	36.83	36.60	36.28	35.83	35.36	34.97	34.75
5.	141.63	32.14	62.46	31.73	39.11	39.10	38.75	38.31	37.74	37.08	36.43	35.92	35.63
6.	149.02	35.16	67.43	34.19	41.29	41.27	40.76	40.11	39.31	38.43	37.64	37.11	36.86
7.	153.70	38.22	71.40	36.72	43.50	43.47	42.80	41.94	40.91	39.80	38.80	38.13	37.78
8.	157.36	41.31	74.98	39.29	45.71	45.68	44.84	43.79	42.52	41.15	39.93	39.09	38.65
9.	160.75	44.41	78.46	41.88	47.91	47.87	46.88	45.62	44.12	42.50	41.05	40.05	39.51
10.	163.52	47.51	81.68	44.49	50.09	50.04	48.89	47.45	45.70	43.85	42.19	41.03	40.41
11.	166.20	50.60	84.85	47.10	52.24	52.19	50.88	49.24	47.27	45.18	43.35	42.15	41.54
12.	168.81	53.68	87.97	49.71	54.33	54.28	52.81	50.97	48.76	46.44	44.39	43.02	42.31
13.	171.33	56.76	91.03	52.31	56.37	56.31	54.67	52.63	50.19	47.60	45.33	43.79	42.99
14.	173.88	59.89	94.12	54.96	58.34	58.27	56.47	54.22	51.54	48.70	46.20	44.50	43.61
15.	176.28	62.93	97.08	57.52	60.18	60.10	58.14	55.70	52.79	49.72	47.01	45.16	44.19
16.	178.47	66.03	99.93	60.10	61.84	61.76	59.65	57.04	53.93	50.66	47.77	45.80	44.75
17.	179.48	69.06	102.18	62.60	63.26	63.18	60.95	58.19	54.93	51.52	48.53	46.53	45.50
18.	179.26	72.00	103.76	64.97	64.34	64.25	61.94	59.09	55.73	52.22	49.13	47.02	45.91
19.	176.09	74.75	103.89	67.11	64.96	64.87	62.54	59.69	56.34	52.82	49.67	47.46	46.29
20.	164.56	77.12	100.29	68.83	65.01	64.93	62.68	59.95	56.76	53.42	50.35	48.06	46.79
21.	130.74	78.46	88.50	69.68	64.48	64.40	62.25	59.76	56.99	54.20	51.52	49.28	47.98
22.	103.01	78.89	80.26	69.93	63.74	63.63	60.80	58.59	56.82	55.37	53.81	51.83	50.17

AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 56.36905 C
CONCRETE THERMOCOUPLE T= 47.60214 C
AVERAGE CONCRETE TEMP. = 0.0000000E+00 C
AVERAGE CANISTER TEMP. = 100.0000 C
AVERAGE HEAT SHIELD TEMP. = 100.0000 C
AVERAGE LINER TEMP. = 100.0000 C
AVERAGE INNER GAP TEMP. = 0.0000000E+00 C
AVERAGE OUTER GAP TEMP. = 0.0000000E+00 C
AVE. CONCRETE EXTERIOR TEMP= 100.0000 C

CONCRETE EXTERIOR H= 1.000000 W/SQM/C
INNER GAP HEAT TRANSFER COEF= 2.000000 W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 2.000000 W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000 C
TOTAL MASS FLOW RATE = 8.000000 kg/sec
INNER AIR VELOCITY = 15.36493 m/sec
OUTER AIR VELOCITY = 12.98915 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 78.89020 C
INNER GAP AIR EXIT TEMP. = 69.92862 C
PRESSURE DROP IN INNER GAP= 0.0000000E+00 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.0000000E+00 Velocity Head

KK = 3

THE TOTAL HEAT INPUT FROM CANISTER = 0.0000000E+00 Watts
THE TOTAL HEAT INPUT FROM SIDE = 0.0000000E+00 Watts
THE TOTAL HEAT INPUT FROM LID = 0.0000000E+00 Watts
THE TOTAL HEAT INPUT FROM BASE = 0.0000000E+00 Watts

THE TEMPERATURES FOR THE CASKLID NODES

CAN...10...11...12...13...20...21...22...30...31...32...41

96.41	75.48	65.00	56.76	56.70	62.54
62.52	62.48	56.24	57.97	64.16	53.21

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 0.000000E+00

 THE TEMPERATURES FOR THE SIDE NODES
 CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1.	25.45	25.14	26.18	25.59	32.86	32.86	33.01	33.13	33.19	33.17	33.09	33.00	32.94
2.	25.56	25.18	26.46	26.08	33.60	33.61	33.79	33.92	33.96	33.87	33.70	33.53	33.42
3.	89.26	26.74	41.37	27.39	35.06	35.06	35.11	35.10	34.99	34.76	34.45	34.18	34.02
4.	125.96	29.26	54.67	29.40	36.99	36.98	36.83	36.60	36.28	35.83	35.36	34.97	34.75
5.	141.63	32.14	62.46	31.73	39.11	39.10	38.75	38.31	37.74	37.08	36.43	35.92	35.63
6.	149.02	35.16	67.43	34.19	41.29	41.27	40.76	40.11	39.31	38.43	37.64	37.11	36.86
7.	153.70	38.22	71.40	36.72	43.50	43.47	42.80	41.94	40.91	39.80	38.80	38.13	37.78
8.	157.36	41.31	74.98	39.29	45.71	45.68	44.84	43.79	42.52	41.15	39.93	39.09	38.65
9.	160.75	44.41	78.46	41.88	47.91	47.87	46.88	45.62	44.12	42.50	41.05	40.05	39.51
10.	163.52	47.51	81.68	44.49	50.09	50.04	48.89	47.45	45.70	43.85	42.19	41.03	40.41
11.	166.20	50.60	84.85	47.10	52.24	52.19	50.88	49.24	47.27	45.18	43.35	42.15	41.54
12.	168.81	53.68	87.97	49.71	54.33	54.28	52.81	50.97	48.76	46.44	44.39	43.02	42.31
13.	171.33	56.76	91.03	52.31	56.37	56.31	54.67	52.63	50.19	47.60	45.33	43.79	42.99
14.	173.88	59.89	94.12	54.96	58.34	58.27	56.47	54.22	51.54	48.70	46.20	44.50	43.61
15.	176.28	62.93	97.08	57.52	60.18	60.10	58.14	55.70	52.79	49.72	47.01	45.16	44.19
16.	178.47	66.03	99.93	60.10	61.84	61.76	59.65	57.04	53.93	50.66	47.77	45.80	44.75
17.	179.48	69.06	102.18	62.60	63.26	63.18	60.95	58.19	54.93	51.52	48.53	46.53	45.50
18.	179.26	72.00	103.76	64.97	64.34	64.25	61.94	59.09	55.73	52.22	49.13	47.02	45.91
19.	176.09	74.75	103.89	67.11	64.96	64.87	62.54	59.69	56.34	52.82	49.67	47.46	46.29
20.	164.56	77.12	100.29	68.83	65.01	64.93	62.68	59.95	56.76	53.42	50.35	48.06	46.79
21.	130.74	78.46	88.50	69.68	64.48	64.40	62.25	59.76	56.99	54.20	51.52	49.28	47.98
22.	103.01	78.89	80.26	69.93	63.74	63.63	60.80	58.59	56.82	55.37	53.81	51.83	50.17

AMBIENT TEMPERATURE = 37.77778 C
 LINER THERMOCOUPLE T= 56.36905 C
 CONCRETE THERMOCOUPLE T= 47.60214 C
 AVERAGE CONCRETE TEMP. = 46.34875 C
 AVERAGE CANISTER TEMP. = 144.0437 C
 AVERAGE HEAT SHIELD TEMP. = 78.45632 C
 AVERAGE LINER TEMP. = 51.78695 C
 AVERAGE INNER GAP TEMP. = 52.37723 C
 AVERAGE OUTER GAP TEMP. = 48.51810 C
 AVE. CONCRETE EXTERIOR TEMP= 41.26998 C

CONCRETE EXTERIOR H= 2.057633 W/SQM/C
 INNER GAP HEAT TRANSFER COEF= 76.45999 W/SQM/C
 OUTER GAP HEAT TRANSFER COEF= 96.28346 W/SQM/C
 INNER GAP AIR FLOW FRACTION = 0.6000000 C
 TOTAL MASS FLOW RATE = 6.400000 kg/sec
 INNER AIR VELOCITY = 25.60822 m/sec
 OUTER AIR VELOCITY = 32.47289 m/sec
 TOTAL TEMPERATURE RISE = 62.22222 C
 INNER GAP AIR EXIT TEMP. = 78.89020 C
 INNER GAP AIR EXIT TEMP. = 69.92862 C
 PRESSURE DROP IN INNER GAP= 284.0977 Velocity Head
 PRESSURE DROP IN OUTER GAP= 608.1538 Velocity Head

KK = 3
 THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
 THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
 THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
 THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES
 CAN...10..11..12..13..20..21..22..30..31..32..41

96.41	75.48	65.00	56.76	56.70	62.54
62.52	62.48	56.24	57.97	64.16	53.21

THE CASE FOR QTOTAL = 20000.0 Watts

 THE TIME IS: 1.000000

 THE TEMPERATURES FOR THE SIDE NODES
 CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1.	27.51	67.52	56.94	71.03	35.99	35.84	33.60	33.19	33.19	33.17	33.11	33.27	33.91
2.	27.53	64.46	57.25	74.77	36.86	36.72	34.42	33.98	33.97	33.88	33.72	33.80	34.39
3.	91.49	66.64	72.85	78.99	38.49	38.34	35.77	35.16	35.00	34.76	34.47	34.45	35.00
4.	128.41	71.75	86.83	82.61	40.54	40.37	37.50	36.67	36.28	35.83	35.38	35.24	35.74
5.	144.23	77.72	95.21	85.61	42.72	42.54	39.43	38.37	37.74	37.08	36.44	36.20	36.64

6.	151.72	83.75	100.65	88.27	44.93	44.74	41.44	40.17	39.31	38.43	37.66	37.45	38.07
7.	156.49	89.60	104.96	90.76	47.14	46.94	43.47	42.01	40.91	39.80	38.83	38.48	39.01
8.	160.23	95.18	108.78	93.12	49.34	49.14	45.50	43.85	42.52	41.15	39.95	39.44	39.90
9.	163.68	100.50	112.38	95.40	51.52	51.31	47.53	45.69	44.12	42.50	41.07	40.40	40.77
10.	166.49	105.53	115.62	97.58	53.67	53.45	49.54	47.51	45.71	43.85	42.21	41.39	41.69
11.	169.22	110.30	118.72	99.68	55.78	55.56	51.51	49.30	47.27	45.18	43.38	42.59	43.12
12.	171.86	114.82	121.70	101.71	57.84	57.62	53.43	51.03	48.77	46.44	44.42	43.48	43.92
13.	174.40	119.11	124.55	103.66	59.83	59.60	55.29	52.69	50.19	47.60	45.36	44.25	44.60
14.	176.97	123.28	127.35	105.54	61.74	61.51	57.07	54.28	51.54	48.70	46.23	44.96	45.23
15.	179.39	127.16	130.00	107.39	63.53	63.30	58.73	55.76	52.79	49.72	47.04	45.62	45.82
16.	181.58	130.92	132.47	109.14	65.14	64.90	60.22	57.09	53.93	50.66	47.81	46.27	46.42
17.	182.58	134.39	134.33	110.90	66.51	66.27	61.51	58.24	54.93	51.52	48.57	47.16	47.72
18.	182.34	137.47	135.53	112.68	67.54	67.30	62.49	59.14	55.74	52.22	49.17	47.66	48.15
19.	179.12	139.93	135.32	114.55	68.13	67.89	63.09	59.74	56.34	52.82	49.72	48.11	48.53
20.	167.49	141.11	131.51	116.73	68.19	67.95	63.23	60.00	56.76	53.42	50.39	48.70	49.05
21.	133.41	139.17	119.71	119.54	67.69	67.46	62.81	59.81	56.99	54.20	51.56	49.95	50.29
22.	105.26	129.61	110.19	123.82	67.04	66.76	61.38	58.66	56.84	55.40	53.87	52.47	52.40

AMBIENT TEMPERATURE =	37.77778	C
LINER THERMOCOUPLE T=	59.82663	C
CONCRETE THERMOCOUPLE T=	47.60336	C
AVERAGE CONCRETE TEMP. =	46.64102	C
AVERAGE CANISTER TEMP. =	146.8057	C
AVERAGE HEAT SHIELD TEMP. =	110.8732	C
AVERAGE LINER TEMP. =	55.18074	C
AVERAGE INNER GAP TEMP. =	111.4018	C
AVERAGE OUTER GAP TEMP. =	96.74075	C
AVE. CONCRETE EXTERIOR TEMP=	42.83669	C

CONCRETE EXTERIOR H=	2.177391	W/SQM/C
INNER GAP HEAT TRANSFER COEF=	4.346307	W/SQM/C
OUTER GAP HEAT TRANSFER COEF=	4.419618	W/SQM/C
INNER GAP AIR FLOW FRACTION =	0.6000000	C
TOTAL MASS FLOW RATE =	8.1453897E-02	kg/sec
INNER AIR VELOCITY =	0.2172801	m/sec
OUTER AIR VELOCITY =	0.2755253	m/sec
TOTAL TEMPERATURE RISE =	62.22222	C
INNER GAP AIR EXIT TEMP. =	129.6105	C
INNER GAP AIR EXIT TEMP. =	123.8228	C
PRESSURE DROP IN INNER GAP=	0.1283320	Velocity Head
PRESSURE DROP IN OUTER GAP=	0.2701886	Velocity Head

KK = 3

THE TOTAL HEAT INPUT FROM CANISTER =	20868.36	Watts
THE TOTAL HEAT INPUT FROM SIDE =	2630.646	Watts
THE TOTAL HEAT INPUT FROM LID =	3028.957	Watts
THE TOTAL HEAT INPUT FROM BASE =	126.5690	Watts

THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

96.80	86.14	65.60	60.60	60.56	62.67
62.66	62.62	56.66	58.65	70.90	57.14

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 2.000000

THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	29.55	71.41	59.64	74.95	38.20	38.02	34.61	33.42	33.22	33.18	33.18	33.59	34.33
2.	29.47	68.31	59.96	78.72	39.18	39.00	35.52	34.24	33.99	33.88	33.79	34.14	34.80
3.	93.92	70.26	75.86	82.94	40.95	40.76	36.93	35.43	35.02	34.76	34.53	34.79	35.41
4.	131.20	75.07	90.12	86.56	43.13	42.92	38.72	36.95	36.30	35.84	35.44	35.59	36.16
5.	147.25	80.77	98.68	89.56	45.41	45.19	40.68	38.66	37.77	37.09	36.51	36.56	37.07
6.	154.90	86.57	104.25	92.22	47.68	47.45	42.71	40.46	39.34	38.44	37.74	37.87	38.56
7.	159.80	92.24	108.66	94.71	49.93	49.69	44.75	42.29	40.94	39.81	38.91	38.90	39.52
8.	163.64	97.69	112.55	97.06	52.15	51.91	46.79	44.13	42.54	41.16	40.04	39.87	40.41
9.	167.19	102.92	116.22	99.32	54.35	54.10	48.81	45.97	44.14	42.51	41.16	40.84	41.29
10.	170.08	107.89	119.52	101.49	56.51	56.25	50.82	47.79	45.73	43.86	42.30	41.84	42.22
11.	172.88	112.62	122.67	103.57	58.62	58.36	52.78	49.57	47.29	45.19	43.49	43.13	43.74
12.	175.58	117.12	125.68	105.57	60.68	60.41	54.70	51.30	48.79	46.45	44.53	44.02	44.54
13.	178.16	121.41	128.55	107.49	62.66	62.39	56.54	52.96	50.21	47.61	45.47	44.80	45.23
14.	180.77	125.60	131.38	109.34	64.56	64.29	58.31	54.54	51.56	48.71	46.34	45.51	45.87
15.	183.22	129.50	134.03	111.16	66.34	66.06	59.96	56.02	52.81	49.73	47.15	46.18	46.46

16.	185.44	133.30	136.51	112.89	67.93	67.64	61.44	57.35	53.95	50.67	47.92	46.85	47.07
17.	186.44	136.80	138.36	114.60	69.28	68.99	62.71	58.50	54.95	51.53	48.72	47.88	48.50
18.	186.19	139.93	139.55	116.34	70.29	70.00	63.68	59.39	55.76	52.24	49.32	48.40	48.95
19.	182.92	142.47	139.29	118.17	70.86	70.58	64.27	59.99	56.36	52.84	49.87	48.85	49.33
20.	171.14	143.75	135.36	120.25	70.90	70.62	64.40	60.24	56.78	53.44	50.54	49.45	49.85
21.	136.70	141.99	123.31	122.97	70.39	70.11	63.98	60.06	57.01	54.22	51.72	50.70	51.10
22.	107.98	132.64	113.44	127.09	69.67	69.35	62.51	58.95	56.93	55.48	54.07	53.18	53.14

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          62.65854      C
CONCRETE THERMOCOUPLE T=         47.61420      C
AVERAGE CONCRETE TEMP. =         46.97902      C
AVERAGE CANISTER TEMP. =         150.1183      C
AVERAGE HEAT SHIELD TEMP. =       114.5409      C
AVERAGE LINER TEMP. =           57.87933      C
AVERAGE INNER GAP TEMP. =        114.0873      C
AVERAGE OUTER GAP TEMP. =        100.5767      C
AVE. CONCRETE EXTERIOR TEMP=       43.43787      C

CONCRETE EXTERIOR H=             2.189038      W/SQM/C
INNER GAP HEAT TRANSFER COEF=     4.336652      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=     4.418008      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =            8.5594401E-02  kg/sec
INNER AIR VELOCITY =              0.2283250      m/sec
OUTER AIR VELOCITY =              0.2895310      m/sec
TOTAL TEMPERATURE RISE =          62.22222      C
INNER GAP AIR EXIT TEMP. =        132.6417      C
INNER GAP AIR EXIT TEMP. =        127.0858      C
PRESSURE DROP IN INNER GAP=       0.1365198      Velocity Head
PRESSURE DROP IN OUTER GAP=       0.2891134      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =        2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =         3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =         126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

  97.24   87.29   66.34   62.31   62.28   62.98
  62.96   62.93   57.10   59.25   71.05   57.56
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS:      3.000000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

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1.	31.63	73.71	61.95	77.35	40.09	39.88	35.72	33.80	33.28	33.20	33.27	33.87	34.63
2.	31.46	70.52	62.27	81.19	41.15	40.95	36.74	34.66	34.05	33.90	33.88	34.42	35.11
3.	96.34	72.55	78.43	85.49	43.03	42.81	38.22	35.88	35.09	34.79	34.63	35.08	35.72
4.	133.96	77.52	92.92	89.17	45.31	45.07	40.07	37.42	36.37	35.86	35.54	35.89	36.47
5.	150.21	83.40	101.62	92.23	47.67	47.42	42.08	39.14	37.84	37.11	36.62	36.86	37.39
6.	158.02	89.39	107.27	94.93	50.00	49.74	44.13	40.95	39.41	38.47	37.86	38.21	38.91
7.	163.03	95.22	111.75	97.45	52.29	52.02	46.19	42.79	41.01	39.83	39.03	39.25	39.88
8.	166.98	100.82	115.70	99.83	54.54	54.27	48.24	44.63	42.61	41.19	40.16	40.23	40.78
9.	170.62	106.18	119.42	102.11	56.76	56.48	50.27	46.46	44.21	42.53	41.29	41.20	41.66
10.	173.59	111.27	122.75	104.29	58.93	58.64	52.27	48.28	45.80	43.88	42.43	42.22	42.61
11.	176.45	116.11	125.94	106.39	61.05	60.75	54.24	50.06	47.36	45.22	43.64	43.56	44.17
12.	179.20	120.70	128.98	108.41	63.10	62.81	56.15	51.79	48.86	46.48	44.69	44.46	44.99
13.	181.84	125.07	131.88	110.35	65.08	64.78	57.98	53.44	50.28	47.64	45.62	45.24	45.68
14.	184.49	129.33	134.73	112.22	66.98	66.67	59.74	55.02	51.63	48.74	46.50	45.96	46.31
15.	186.97	133.30	137.41	114.05	68.74	68.43	61.38	56.49	52.88	49.76	47.31	46.63	46.91
16.	189.20	137.15	139.90	115.79	70.32	70.01	62.85	57.81	54.02	50.70	48.09	47.32	47.54
17.	190.22	140.69	141.75	117.53	71.66	71.34	64.11	58.95	55.02	51.57	48.92	48.44	49.03
18.	189.95	143.85	142.92	119.28	72.66	72.34	65.06	59.85	55.82	52.28	49.54	48.98	49.50
19.	186.64	146.39	142.62	121.15	73.21	72.90	65.64	60.44	56.42	52.88	50.08	49.43	49.88
20.	174.74	147.63	138.58	123.23	73.22	72.91	65.77	60.69	56.84	53.48	50.76	50.03	50.40
21.	139.97	145.73	126.26	126.00	72.67	72.36	65.33	60.51	57.09	54.27	51.94	51.29	51.66
22.	110.72	135.94	116.08	130.23	71.88	71.52	63.77	59.43	57.09	55.62	54.35	53.72	53.65

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AMBIENT TEMPERATURE =          37.77778      C

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LINER THERMOCOUPLE T=          65.08102      C
CONCRETE THERMOCOUPLE T=       47.64398      C
AVERAGE CONCRETE TEMP. =       47.34383      C
AVERAGE CANISTER TEMP. =       153.3881      C
AVERAGE HEAT SHIELD TEMP. =    117.6246      C
AVERAGE LINER TEMP. =          60.18399      C
AVERAGE INNER GAP TEMP. =      111.9000      C
AVERAGE OUTER GAP TEMP. =      107.9148      C
AVE. CONCRETE EXTERIOR TEMP=    43.86308      C

CONCRETE EXTERIOR H=            2.199894      W/SQM/C
INNER GAP HEAT TRANSFER COEF=    4.625436      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=    4.640251      W/SQM/C
INNER GAP AIR FLOW FRACTION =    0.6000000      C
  TOTAL MASS FLOW RATE =        5.9406143E-02  kg/sec
  INNER AIR VELOCITY =         0.2377008      m/sec
  OUTER AIR VELOCITY =         0.3014202      m/sec
TOTAL TEMPERATURE RISE =        62.22222      C
INNER GAP AIR EXIT TEMP. =       135.9439      C
INNER GAP AIR EXIT TEMP. =       130.2261      C
PRESSURE DROP IN INNER GAP=      0.1407137      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.3114562      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =       2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =        3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =       126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

  97.71   89.01   67.11   63.20   63.17   63.40
  63.38   63.35   57.55   59.79   71.24   57.93
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS:    4.000000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR.  -----  CONCR.

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1.	33.73	76.25	64.02	79.91	41.78	41.55	36.82	34.27	33.38	33.25	33.38	34.09	34.87
2.	33.47	73.04	64.34	83.82	42.92	42.70	37.97	35.21	34.17	33.94	34.00	34.66	35.36
3.	98.75	75.02	80.78	88.17	44.88	44.65	39.52	36.46	35.21	34.82	34.75	35.33	35.97
4.	136.66	79.97	95.51	91.90	47.26	47.01	41.43	38.02	36.50	35.90	35.66	36.13	36.72
5.	153.10	85.85	104.36	94.99	49.70	49.43	43.49	39.76	37.97	37.15	36.74	37.12	37.65
6.	161.05	91.85	110.11	97.71	52.08	51.80	45.57	41.58	39.54	38.51	38.00	38.49	39.20
7.	166.18	97.70	114.67	100.24	54.41	54.12	47.65	43.43	41.14	39.88	39.18	39.55	40.18
8.	170.23	103.33	118.68	102.64	56.69	56.39	49.71	45.27	42.75	41.23	40.31	40.53	41.07
9.	173.95	108.73	122.46	104.93	58.92	58.62	51.75	47.11	44.35	42.58	41.43	41.50	41.96
10.	177.00	113.87	125.85	107.12	61.11	60.80	53.76	48.92	45.93	43.93	42.59	42.53	42.92
11.	179.92	118.75	129.08	109.22	63.23	62.92	55.73	50.70	47.49	45.28	43.82	43.91	44.51
12.	182.73	123.39	132.16	111.24	65.30	64.98	57.63	52.42	48.99	46.53	44.87	44.82	45.34
13.	185.41	127.81	135.09	113.18	67.27	66.95	59.46	54.07	50.41	47.70	45.81	45.60	46.03
14.	188.09	132.13	137.97	115.04	69.17	68.84	61.22	55.65	51.76	48.80	46.68	46.32	46.67
15.	190.61	136.14	140.67	116.88	70.93	70.59	62.84	57.11	53.01	49.82	47.50	47.00	47.26
16.	192.87	140.03	143.17	118.61	72.50	72.16	64.31	58.43	54.14	50.76	48.29	47.71	47.91
17.	193.89	143.62	145.03	120.34	73.82	73.49	65.55	59.56	55.14	51.63	49.16	48.88	49.44
18.	193.61	146.82	146.19	122.10	74.81	74.47	66.50	60.45	55.95	52.34	49.78	49.43	49.92
19.	190.26	149.39	145.85	123.96	75.35	75.01	67.07	61.04	56.55	52.94	50.33	49.89	50.30
20.	178.26	150.66	141.70	126.08	75.33	75.00	67.18	61.29	56.97	53.54	51.01	50.49	50.82
21.	143.21	148.79	129.11	128.85	74.72	74.39	66.71	61.10	57.22	54.35	52.20	51.76	52.09
22.	113.47	138.84	118.62	133.09	73.85	73.47	65.03	60.02	57.33	55.81	54.66	54.17	54.04

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          67.27356      C
CONCRETE THERMOCOUPLE T=       47.69858      C
AVERAGE CONCRETE TEMP. =       47.72563      C
AVERAGE CANISTER TEMP. =       156.5872      C
AVERAGE HEAT SHIELD TEMP. =    120.5543      C
AVERAGE LINER TEMP. =          62.26255      C
AVERAGE INNER GAP TEMP. =      113.7412      C
AVERAGE OUTER GAP TEMP. =      111.3901      C
AVE. CONCRETE EXTERIOR TEMP=    44.19973      C

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CONCRETE EXTERIOR H=      2.209365      W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.665641      W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 4.670996      W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000      C
TOTAL MASS FLOW RATE = 6.2392663E-02      kg/sec
INNER AIR VELOCITY = 0.2420295      m/sec
OUTER AIR VELOCITY = 0.3069092      m/sec
TOTAL TEMPERATURE RISE = 62.22222      C
INNER GAP AIR EXIT TEMP. = 138.8380      C
INNER GAP AIR EXIT TEMP. = 133.0902      C
PRESSURE DROP IN INNER GAP= 0.1444861      Velocity Head
PRESSURE DROP IN OUTER GAP= 0.3222395      Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646      Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

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98.20  90.25  67.89  63.76  63.73  63.88
63.86  63.83  58.01  60.29  71.43  58.28
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 5.000000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

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1.	35.86	72.40	65.74	76.35	43.33	43.09	37.89	34.80	33.53	33.31	33.49	34.29	35.07
2.	35.51	69.08	66.08	80.67	44.55	44.32	39.18	35.83	34.34	34.00	34.12	34.87	35.57
3.	101.14	72.67	82.80	85.68	46.60	46.36	40.80	37.12	35.39	34.89	34.88	35.54	36.19
4.	139.31	79.93	97.80	89.91	49.06	48.80	42.77	38.71	36.68	35.97	35.79	36.35	36.94
5.	155.93	88.07	106.83	93.33	51.57	51.29	44.87	40.47	38.16	37.21	36.88	37.34	37.88
6.	164.00	96.02	112.72	96.28	54.01	53.72	46.99	42.31	39.73	38.58	38.15	38.74	39.44
7.	169.24	103.49	117.39	99.00	56.38	56.08	49.09	44.16	41.34	39.95	39.33	39.80	40.42
8.	173.38	110.42	121.50	101.56	58.69	58.37	51.17	46.01	42.94	41.30	40.47	40.78	41.32
9.	177.19	116.85	125.37	103.99	60.94	60.62	53.22	47.85	44.54	42.65	41.59	41.76	42.22
10.	180.30	122.78	128.82	106.31	63.14	62.81	55.23	49.66	46.13	44.01	42.75	42.80	43.18
11.	183.29	128.26	132.11	108.52	65.28	64.95	57.20	51.44	47.69	45.36	44.01	44.20	44.79
12.	186.15	133.35	135.25	110.63	67.34	67.01	59.11	53.17	49.19	46.61	45.06	45.13	45.63
13.	188.87	138.07	138.22	112.65	69.32	68.98	60.94	54.81	50.60	47.78	46.00	45.91	46.32
14.	191.60	142.58	141.14	114.58	71.22	70.88	62.69	56.38	51.95	48.88	46.88	46.63	46.96
15.	194.14	146.70	143.87	116.45	72.98	72.63	64.31	57.84	53.20	49.90	47.70	47.31	47.56
16.	196.42	150.63	146.40	118.22	74.54	74.19	65.76	59.15	54.33	50.85	48.50	48.03	48.22
17.	197.45	154.15	148.27	119.96	75.86	75.50	67.00	60.28	55.33	51.73	49.40	49.25	49.76
18.	197.17	157.17	149.43	121.75	76.83	76.48	67.94	61.16	56.13	52.44	50.03	49.81	50.25
19.	193.79	159.39	149.06	123.68	77.35	77.00	68.49	61.74	56.73	53.04	50.58	50.27	50.64
20.	181.71	159.95	144.83	125.98	77.30	76.95	68.59	61.99	57.15	53.65	51.26	50.88	51.16
21.	146.42	156.45	132.02	129.24	76.63	76.28	68.08	61.79	57.42	54.47	52.47	52.15	52.44
22.	116.22	142.32	121.20	134.61	75.67	75.26	66.26	60.69	57.62	56.04	54.98	54.56	54.39

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AMBIENT TEMPERATURE = 37.77778      C
LINER THERMOCOUPLE T= 69.32455      C
CONCRETE THERMOCOUPLE T= 47.78113      C
AVERAGE CONCRETE TEMP. = 48.12084      C
AVERAGE CANISTER TEMP. = 159.7113      C
AVERAGE HEAT SHIELD TEMP. = 123.3511      C
AVERAGE LINER TEMP. = 64.20150      C
AVERAGE INNER GAP TEMP. = 120.3249      C
AVERAGE OUTER GAP TEMP. = 110.6924      C
AVE. CONCRETE EXTERIOR TEMP= 44.47879      C

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CONCRETE EXTERIOR H=      2.217633      W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.809582      W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 4.806139      W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000      C
TOTAL MASS FLOW RATE = 6.8261422E-02      kg/sec
INNER AIR VELOCITY = 0.1820889      m/sec
OUTER AIR VELOCITY = 0.2309006      m/sec
TOTAL TEMPERATURE RISE = 62.22222      C
INNER GAP AIR EXIT TEMP. = 142.3238      C
INNER GAP AIR EXIT TEMP. = 134.6055      C

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PRESSURE DROP IN INNER GAP= 0.1119884 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.2416598 Velocity Head

KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

98.72 91.88 68.66 64.20 64.16 64.40
64.38 64.35 58.47 60.75 71.62 58.58

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 6.000000

THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	37.98	79.43	67.78	83.17	44.79	44.53	38.92	35.37	33.72	33.39	33.61	34.46	35.25
2.	37.55	76.13	68.13	87.28	46.07	45.84	40.35	36.50	34.55	34.08	34.25	35.06	35.75
3.	103.49	78.41	85.11	91.88	48.21	47.95	42.04	37.83	35.62	34.97	35.01	35.73	36.37
4.	141.90	83.81	100.31	95.81	50.75	50.47	44.07	39.46	36.92	36.05	35.93	36.54	37.13
5.	158.67	90.18	109.45	99.03	53.33	53.04	46.22	41.24	38.41	37.31	37.02	37.54	38.07
6.	166.87	96.63	115.40	101.86	55.83	55.52	48.38	43.09	39.99	38.68	38.30	38.95	39.65
7.	172.21	102.90	120.12	104.48	58.23	57.92	50.51	44.96	41.59	40.05	39.49	40.02	40.64
8.	176.44	108.90	124.28	106.96	60.57	60.25	52.60	46.82	43.20	41.40	40.63	41.01	41.54
9.	180.33	114.63	128.18	109.32	62.85	62.52	54.66	48.66	44.80	42.75	41.76	41.98	42.44
10.	183.51	120.05	131.67	111.56	65.07	64.73	56.69	50.48	46.39	44.11	42.92	43.04	43.41
11.	186.56	125.19	134.99	113.72	67.22	66.87	58.66	52.26	47.95	45.47	44.19	44.46	45.03
12.	189.47	130.05	138.16	115.79	69.29	68.94	60.57	53.98	49.44	46.73	45.26	45.39	45.87
13.	192.24	134.66	141.17	117.77	71.28	70.92	62.39	55.62	50.86	47.89	46.20	46.18	46.57
14.	195.00	139.14	144.11	119.67	73.18	72.82	64.14	57.18	52.21	48.99	47.08	46.90	47.21
15.	197.57	143.30	146.86	121.55	74.94	74.57	65.76	58.64	53.45	50.01	47.90	47.58	47.81
16.	199.87	147.31	149.41	123.31	76.50	76.13	67.21	59.94	54.58	50.96	48.71	48.32	48.48
17.	200.91	150.99	151.28	125.08	77.81	77.44	68.44	61.07	55.58	51.86	49.64	49.55	50.03
18.	200.63	154.25	152.43	126.88	78.77	78.40	69.36	61.94	56.38	52.57	50.28	50.13	50.53
19.	197.23	156.84	152.04	128.80	79.27	78.90	69.91	62.52	56.98	53.17	50.84	50.59	50.92
20.	185.08	158.03	147.72	131.01	79.18	78.82	69.98	62.76	57.40	53.78	51.52	51.20	51.44
21.	149.60	155.88	134.67	133.95	78.45	78.09	69.43	62.55	57.69	54.62	52.74	52.49	52.74
22.	118.98	144.76	123.59	138.50	77.40	76.97	67.45	61.39	57.98	56.32	55.32	54.92	54.70

AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 71.28128 C
CONCRETE THERMOCOUPLE T= 47.89297 C
AVERAGE CONCRETE TEMP. = 48.52741 C
AVERAGE CANISTER TEMP. = 162.7628 C
AVERAGE HEAT SHIELD TEMP. = 126.0843 C
AVERAGE LINER TEMP. = 66.03852 C
AVERAGE INNER GAP TEMP. = 119.4475 C
AVERAGE OUTER GAP TEMP. = 116.0456 C
AVE. CONCRETE EXTERIOR TEMP= 44.71828 C

CONCRETE EXTERIOR H= 2.226048 W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.714888 W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 4.718954 W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000 C
TOTAL MASS FLOW RATE = 5.7823874E-02 kg/sec
INNER AIR VELOCITY = 0.2313697 m/sec
OUTER AIR VELOCITY = 0.2933919 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 144.7611 C
INNER GAP AIR EXIT TEMP. = 138.4978 C
PRESSURE DROP IN INNER GAP= 0.1417373 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.3146531 Velocity Head

KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

99.27 92.75 69.42 64.58 64.55 64.94
64.92 64.88 58.94 61.20 71.80 58.90

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 7.000000

THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	40.10	78.18	69.45	82.07	46.16	45.89	39.92	35.95	33.94	33.49	33.74	34.61	35.40
2.	39.60	74.85	69.82	86.43	47.53	47.28	41.49	37.20	34.81	34.19	34.39	35.23	35.92
3.	105.81	77.97	87.07	91.43	49.75	49.48	43.25	38.58	35.90	35.08	35.15	35.90	36.54
4.	144.42	84.60	102.51	95.66	52.37	52.08	45.34	40.23	37.22	36.17	36.07	36.71	37.30
5.	161.34	92.17	111.81	99.08	55.01	54.71	47.54	42.05	38.71	37.42	37.16	37.73	38.25
6.	169.65	99.68	117.89	102.06	57.56	57.24	49.73	43.92	40.29	38.80	38.46	39.14	39.83
7.	175.09	106.84	122.70	104.80	60.01	59.68	51.89	45.80	41.90	40.17	39.65	40.22	40.83
8.	179.41	113.57	126.94	107.38	62.38	62.05	54.01	47.66	43.51	41.53	40.79	41.21	41.73
9.	183.38	119.89	130.92	109.83	64.69	64.34	56.08	49.51	45.11	42.88	41.92	42.19	42.63
10.	186.63	125.78	134.47	112.15	66.92	66.57	58.11	51.33	46.70	44.24	43.10	43.25	43.61
11.	189.73	131.28	137.85	114.38	69.09	68.73	60.09	53.11	48.27	45.60	44.38	44.68	45.24
12.	192.69	136.43	141.06	116.50	71.17	70.81	62.01	54.83	49.76	46.87	45.45	45.63	46.09
13.	195.50	141.25	144.10	118.53	73.17	72.80	63.83	56.47	51.18	48.03	46.40	46.41	46.79
14.	198.29	145.87	147.08	120.48	75.08	74.70	65.58	58.04	52.52	49.13	47.28	47.14	47.43
15.	200.89	150.12	149.86	122.38	76.83	76.45	67.20	59.48	53.76	50.15	48.10	47.82	48.03
16.	203.21	154.18	152.42	124.18	78.40	78.01	68.64	60.79	54.89	51.11	48.92	48.57	48.72
17.	204.26	157.86	154.31	125.95	79.70	79.32	69.86	61.91	55.89	52.01	49.87	49.82	50.26
18.	203.99	161.05	155.46	127.77	80.66	80.27	70.78	62.78	56.69	52.73	50.53	50.41	50.77
19.	200.58	163.47	155.04	129.75	81.13	80.75	71.31	63.35	57.29	53.34	51.08	50.87	51.16
20.	188.38	164.31	150.65	132.06	81.00	80.62	71.36	63.57	57.71	53.94	51.77	51.49	51.69
21.	152.74	161.31	137.40	135.28	80.20	79.83	70.76	63.35	58.01	54.81	53.01	52.79	53.00
22.	121.72	147.84	126.01	140.48	79.06	78.61	68.62	62.12	58.38	56.62	55.67	55.26	54.99

AMBIENT TEMPERATURE =	37.77778	C
LINER THERMOCOUPLE T=	73.16965	C
CONCRETE THERMOCOUPLE T=	48.03415	C
AVERAGE CONCRETE TEMP. =	48.94444	C
AVERAGE CANISTER TEMP. =	165.7377	C
AVERAGE HEAT SHIELD TEMP. =	128.7223	C
AVERAGE LINER TEMP. =	67.80817	C
AVERAGE INNER GAP TEMP. =	124.6990	C
AVERAGE OUTER GAP TEMP. =	116.2542	C
AVE. CONCRETE EXTERIOR TEMP=	44.92989	C
CONCRETE EXTERIOR H=	2.233475	W/SQM/C
INNER GAP HEAT TRANSFER COEF=	4.759447	W/SQM/C
OUTER GAP HEAT TRANSFER COEF=	4.774402	W/SQM/C
INNER GAP AIR FLOW FRACTION =	0.6000000	C
TOTAL MASS FLOW RATE =	7.4483536E-02	kg/sec
INNER AIR VELOCITY =	0.1986865	m/sec
OUTER AIR VELOCITY =	0.2519474	m/sec
TOTAL TEMPERATURE RISE =	62.22222	C
INNER GAP AIR EXIT TEMP. =	147.8448	C
INNER GAP AIR EXIT TEMP. =	140.4755	C
PRESSURE DROP IN INNER GAP=	0.1246072	Velocity Head
PRESSURE DROP IN OUTER GAP=	0.2704609	Velocity Head

KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

99.83 94.12 70.18 64.94 64.90 65.49
65.46 65.43 59.41 61.62 71.97 59.18

THE CASE FOR QTOTAL = 20000.0 Watts

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THE TIME IS:      8.000000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1.  42.23  87.02  71.10  90.59  47.48  47.19  40.89  36.54  34.19  33.60  33.86  34.75  35.54
2.  41.65  83.82  71.48  94.62  48.91  48.66  42.60  37.91  35.11  34.32  34.52  35.38  36.07
3.  108.09  85.38  89.02  99.04  51.21  50.94  44.43  39.34  36.22  35.22  35.29  36.06  36.70
4.  146.89  89.71  104.70  102.83  53.91  53.62  46.59  41.03  37.55  36.31  36.21  36.88  37.46
5.  163.93  95.00  114.15  105.98  56.63  56.32  48.83  42.87  39.05  37.57  37.31  37.89  38.41
6.  172.35  100.51  120.33  108.75  59.23  58.91  51.06  44.77  40.65  38.95  38.62  39.32  40.00
7.  177.89  105.98  125.23  111.32  61.73  61.39  53.25  46.66  42.26  40.33  39.82  40.40  41.00
8.  182.29  111.33  129.55  113.74  64.13  63.78  55.39  48.54  43.88  41.69  40.96  41.39  41.91
9.  186.33  116.54  133.59  116.04  66.46  66.11  57.48  50.39  45.48  43.04  42.09  42.38  42.81
10. 189.64  121.56  137.20  118.23  68.72  68.35  59.52  52.22  47.07  44.40  43.28  43.45  43.80
11. 192.80  126.39  140.62  120.32  70.90  70.53  61.51  54.00  48.63  45.77  44.57  44.89  45.42
12. 195.81  131.04  143.88  122.32  73.00  72.62  63.43  55.72  50.13  47.04  45.65  45.84  46.28
13. 198.66  135.50  146.96  124.23  75.01  74.62  65.26  57.36  51.54  48.20  46.60  46.63  46.98
14. 201.49  139.89  149.97  126.06  76.92  76.53  67.01  58.92  52.88  49.30  47.48  47.36  47.62
15. 204.12  144.00  152.77  127.86  78.68  78.29  68.62  60.37  54.13  50.33  48.30  48.04  48.24
16. 206.46  148.02  155.36  129.54  80.25  79.85  70.06  61.67  55.26  51.28  49.14  48.80  48.92
17. 207.53  151.76  157.26  131.22  81.55  81.15  71.28  62.79  56.26  52.20  50.11  50.06  50.47
18. 207.25  155.14  158.41  132.91  82.49  82.09  72.19  63.65  57.06  52.92  50.77  50.66  50.99
19. 203.83  157.93  157.97  134.69  82.95  82.55  72.70  64.21  57.65  53.53  51.33  51.12  51.38
20. 191.60  159.51  153.50  136.70  82.77  82.38  72.73  64.43  58.07  54.14  52.02  51.74  51.91
21. 155.84  158.17  140.04  139.32  81.90  81.52  72.07  64.18  58.38  55.03  53.28  53.06  53.24
22. 124.45  148.69  128.35  143.30  80.67  80.20  69.77  62.87  58.81  56.95  56.02  55.58  55.26
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AMBIENT TEMPERATURE =      37.77778      C
LINER THERMOCOUPLE T=      75.00574      C
CONCRETE THERMOCOUPLE T=      48.20392      C
AVERAGE CONCRETE TEMP. =      49.37115      C
AVERAGE CANISTER TEMP. =      168.6393      C
AVERAGE HEAT SHIELD TEMP. =      131.2906      C
AVERAGE LINER TEMP. =      69.52127      C
AVERAGE INNER GAP TEMP. =      127.5440      C
AVERAGE OUTER GAP TEMP. =      117.8145      C
AVE. CONCRETE EXTERIOR TEMP=      45.12153      C

CONCRETE EXTERIOR H=      2.240473      W/SQM/C
INNER GAP HEAT TRANSFER COEF=      4.398972      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=      4.481852      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =      9.1396488E-02      kg/sec
INNER AIR VELOCITY =      0.2606039      m/sec
OUTER AIR VELOCITY =      0.3304628      m/sec
TOTAL TEMPERATURE RISE =      62.22222      C
INNER GAP AIR EXIT TEMP. =      148.6900      C
INNER GAP AIR EXIT TEMP. =      143.2986      C
PRESSURE DROP IN INNER GAP=      0.1654923      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.3572578      Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =      20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =      3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =      126.5690      Watts
*****

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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

100.42  94.13  70.92  65.29  65.25  66.03
66.00  65.97  59.89  62.02  72.14  59.48
*****

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THE CASE FOR QTOTAL = 20000.0 Watts
*****
THE TIME IS:      9.000000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1.  44.35  81.11  73.07  85.02  48.76  48.46  41.83  37.14  34.46  33.74  33.99  34.89  35.67
2.  43.71  77.78  73.46  89.57  50.27  50.00  43.69  38.63  35.45  34.47  34.66  35.53  36.21
3.  110.35  81.24  91.20  94.81  52.65  52.36  45.59  40.11  36.57  35.37  35.43  36.21  36.84
4.  149.29  88.37  107.01  99.22  55.43  55.12  47.80  41.84  37.92  36.47  36.36  37.03  37.60

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5.	166.46	96.44	116.54	102.78	58.21	57.89	50.10	43.72	39.44	37.74	37.46	38.05	38.57
6.	174.97	104.40	122.76	105.85	60.87	60.53	52.37	45.63	41.04	39.13	38.78	39.49	40.16
7.	180.60	111.95	127.71	108.67	63.41	63.05	54.59	47.54	42.67	40.51	39.98	40.58	41.16
8.	185.08	119.01	132.06	111.32	65.84	65.48	56.75	49.43	44.28	41.87	41.13	41.57	42.07
9.	189.19	125.62	136.13	113.83	68.20	67.83	58.86	51.30	45.89	43.22	42.27	42.56	42.98
10.	192.56	131.74	139.77	116.21	70.48	70.10	60.91	53.13	47.48	44.59	43.45	43.63	43.97
11.	195.77	137.44	143.23	118.47	72.68	72.29	62.91	54.92	49.05	45.96	44.76	45.08	45.60
12.	198.83	142.75	146.51	120.64	74.79	74.40	64.84	56.64	50.54	47.23	45.85	46.04	46.46
13.	201.72	147.70	149.62	122.69	76.81	76.41	66.67	58.28	51.96	48.40	46.80	46.83	47.16
14.	204.58	152.44	152.64	124.66	78.73	78.33	68.42	59.84	53.30	49.50	47.68	47.56	47.81
15.	207.23	156.78	155.47	126.58	80.50	80.09	70.04	61.28	54.54	50.52	48.51	48.25	48.42
16.	209.60	160.92	158.08	128.38	82.06	81.65	71.48	62.58	55.67	51.49	49.35	49.02	49.12
17.	210.68	164.64	159.98	130.16	83.37	82.95	72.69	63.69	56.67	52.41	50.33	50.28	50.65
18.	210.41	167.85	161.13	131.99	84.30	83.88	73.59	64.55	57.47	53.14	51.00	50.88	51.18
19.	206.99	170.25	160.68	133.97	84.73	84.32	74.09	65.10	58.06	53.74	51.57	51.35	51.57
20.	194.73	170.99	156.15	136.33	84.51	84.11	74.08	65.30	58.48	54.36	52.26	51.97	52.11
21.	158.89	167.70	142.54	139.66	83.57	83.17	73.37	65.04	58.80	55.28	53.55	53.31	53.46
22.	127.17	153.02	130.64	145.14	82.24	81.76	70.90	63.63	59.27	57.31	56.37	55.90	55.54

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          76.80911      C
CONCRETE THERMOCOUPLE T=         48.40097      C
AVERAGE CONCRETE TEMP. =         49.80716      C
AVERAGE CANISTER TEMP. =         171.4631      C
AVERAGE HEAT SHIELD TEMP. =       133.8014      C
AVERAGE LINER TEMP. =             71.19973      C
AVERAGE INNER GAP TEMP. =         129.7702      C
AVERAGE OUTER GAP TEMP. =         120.6344      C
AVE. CONCRETE EXTERIOR TEMP=       45.29891      C

CONCRETE EXTERIOR H=              2.247685      W/SQM/C
INNER GAP HEAT TRANSFER COEF=      4.814819      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=      4.823942      W/SQM/C
INNER GAP AIR FLOW FRACTION =       0.6000000      C
TOTAL MASS FLOW RATE =      7.1704812E-02      kg/sec
INNER AIR VELOCITY =              0.1912742      m/sec
OUTER AIR VELOCITY =              0.2425482      m/sec
TOTAL TEMPERATURE RISE =           62.22222      C
INNER GAP AIR EXIT TEMP. =         153.0233      C
INNER GAP AIR EXIT TEMP. =         145.1352      C
PRESSURE DROP IN INNER GAP=        0.1226033      Velocity Head
PRESSURE DROP IN OUTER GAP=        0.2655634      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =   20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =       2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =        3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =       126.5690      Watts
*****

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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

101.03   96.48   71.65   65.63   65.59   66.57
66.54   66.51   60.37   62.41   72.30   59.73
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THE CASE FOR QTOTAL = 20000.0 Watts
*****
THE TIME IS:    10.00000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR.  -----  CONCR.

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1.	46.47	81.58	74.52	85.52	49.99	49.69	42.75	37.73	34.76	33.89	34.12	35.02	35.79
2.	45.76	78.25	74.93	90.23	51.57	51.30	44.75	39.35	35.81	34.64	34.80	35.67	36.34
3.	112.57	82.17	92.94	95.70	54.04	53.75	46.73	40.89	36.96	35.55	35.57	36.36	36.98
4.	151.64	89.93	108.97	100.29	56.90	56.58	49.00	42.67	38.33	36.66	36.51	37.18	37.75
5.	168.91	98.61	118.65	103.97	59.75	59.41	51.35	44.57	39.86	37.93	37.62	38.21	38.71
6.	177.52	107.09	125.00	107.14	62.46	62.11	53.66	46.51	41.48	39.32	38.94	39.65	40.31
7.	183.22	115.06	130.05	110.03	65.04	64.68	55.91	48.44	43.11	40.71	40.15	40.74	41.32
8.	187.78	122.46	134.48	112.74	67.51	67.14	58.09	50.34	44.73	42.08	41.30	41.74	42.23
9.	191.96	129.33	138.64	115.30	69.90	69.52	60.22	52.21	46.34	43.43	42.44	42.73	43.13
10.	195.39	135.67	142.34	117.71	72.20	71.81	62.29	54.05	47.93	44.80	43.64	43.81	44.13
11.	198.66	141.52	145.86	120.01	74.42	74.02	64.30	55.85	49.50	46.18	44.95	45.26	45.76
12.	201.75	146.94	149.19	122.20	76.55	76.15	66.23	57.57	51.00	47.45	46.04	46.23	46.63
13.	204.68	151.98	152.34	124.27	78.58	78.17	68.07	59.21	52.41	48.62	46.99	47.02	47.33
14.	207.57	156.77	155.41	126.24	80.51	80.09	69.83	60.78	53.75	49.72	47.88	47.75	47.98

15.	210.26	161.14	158.26	128.15	82.28	81.86	71.44	62.22	54.99	50.75	48.71	48.44	48.59
16.	212.64	165.29	160.89	129.94	83.85	83.43	72.88	63.51	56.12	51.71	49.56	49.22	49.29
17.	213.74	168.99	162.81	131.69	85.15	84.73	74.10	64.62	57.12	52.65	50.56	50.48	50.82
18.	213.48	172.16	163.97	133.48	86.07	85.65	74.99	65.48	57.92	53.38	51.24	51.09	51.35
19.	210.06	174.49	163.50	135.45	86.48	86.06	75.47	66.02	58.51	53.99	51.80	51.57	51.75
20.	197.79	175.04	158.93	137.81	86.22	85.80	75.43	66.21	58.93	54.61	52.51	52.19	52.29
21.	161.90	171.34	145.16	141.22	85.20	84.80	74.66	65.91	59.26	55.56	53.81	53.56	53.67
22.	129.86	155.41	132.97	146.97	83.78	83.29	72.01	64.39	59.76	57.69	56.73	56.22	55.81

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AMBIENT TEMPERATURE =      37.77778      C
LINER THERMOCOUPLE T=      78.57678      C
CONCRETE THERMOCOUPLE T=      48.62387      C
AVERAGE CONCRETE TEMP. =      50.25197      C
AVERAGE CANISTER TEMP. =      174.2156      C
AVERAGE HEAT SHIELD TEMP. =      136.2380      C
AVERAGE LINER TEMP. =      72.84060      C
AVERAGE INNER GAP TEMP. =      132.9770      C
AVERAGE OUTER GAP TEMP. =      122.0508      C
AVE. CONCRETE EXTERIOR TEMP=      45.46592      C

CONCRETE EXTERIOR H=      2.254262      W/SQM/C
INNER GAP HEAT TRANSFER COEF=      4.851830      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=      4.855836      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =      6.7360297E-02      kg/sec
INNER AIR VELOCITY =      0.1796851      m/sec
OUTER AIR VELOCITY =      0.2278524      m/sec
TOTAL TEMPERATURE RISE =      62.22222      C
INNER GAP AIR EXIT TEMP. =      155.4058      C
INNER GAP AIR EXIT TEMP. =      146.9729      C
PRESSURE DROP IN INNER GAP=      0.1167230      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.2510607      Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =      20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =      3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =      126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

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101.66	97.63	72.38	65.97	65.92	67.10
67.07	67.04	60.85	62.79	72.46	59.99

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THE CASE FOR QTOTAL = 20000.0 Watts
*****
THE TIME IS:      12.00000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1.	50.68	85.50	77.87	89.39	52.38	52.05	44.54	38.93	35.40	34.23	34.39	35.27	36.03
2.	49.85	82.19	78.32	94.22	54.10	53.81	46.82	40.81	36.59	35.03	35.09	35.94	36.60
3.	116.90	86.07	96.78	99.79	56.73	56.42	48.95	42.47	37.81	35.97	35.88	36.64	37.24
4.	156.16	93.78	113.14	104.46	59.74	59.41	51.35	44.33	39.22	37.09	36.82	37.47	38.02
5.	173.60	102.42	123.02	108.22	62.72	62.37	53.80	46.30	40.79	38.38	37.95	38.51	38.99
6.	182.38	110.90	129.51	111.44	65.55	65.18	56.19	48.30	42.43	39.79	39.28	39.96	40.59
7.	188.24	118.91	134.67	114.38	68.22	67.84	58.50	50.27	44.08	41.19	40.50	41.06	41.61
8.	192.93	126.36	139.21	117.14	70.76	70.37	60.74	52.20	45.71	42.56	41.66	42.06	42.52
9.	197.24	133.31	143.46	119.73	73.21	72.81	62.90	54.09	47.33	43.92	42.80	43.06	43.43
10.	200.78	139.73	147.25	122.18	75.56	75.15	65.01	55.95	48.94	45.30	44.01	44.15	44.44
11.	204.14	145.67	150.84	124.51	77.82	77.40	67.04	57.76	50.51	46.69	45.34	45.61	46.07
12.	207.33	151.19	154.23	126.72	79.98	79.56	69.00	59.49	52.02	47.97	46.44	46.58	46.94
13.	210.33	156.33	157.44	128.82	82.04	81.61	70.85	61.14	53.43	49.14	47.40	47.38	47.65
14.	213.28	161.22	160.56	130.81	84.00	83.56	72.62	62.70	54.77	50.24	48.28	48.11	48.29
15.	216.02	165.68	163.46	132.74	85.79	85.34	74.24	64.14	56.00	51.27	49.12	48.81	48.91
16.	218.44	169.92	166.12	134.54	87.37	86.92	75.69	65.43	57.13	52.24	49.99	49.59	49.63
17.	219.57	173.71	168.06	136.32	88.66	88.21	76.89	66.54	58.14	53.19	51.00	50.86	51.14
18.	219.34	176.97	169.22	138.14	89.56	89.11	77.77	67.39	58.94	53.93	51.69	51.48	51.67
19.	215.94	179.37	168.73	140.12	89.92	89.48	78.21	67.91	59.52	54.54	52.27	51.96	52.08
20.	203.68	180.02	164.06	142.52	89.57	89.13	78.11	68.06	59.94	55.18	52.99	52.60	52.62
21.	167.76	176.44	150.01	145.97	88.41	87.98	77.22	67.70	60.28	56.18	54.35	54.02	54.06
22.	135.19	160.29	137.36	151.78	86.80	86.27	74.22	65.94	60.80	58.49	57.46	56.86	56.34

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          82.04184      C
CONCRETE THERMOCOUPLE T=        49.14069      C
AVERAGE CONCRETE TEMP. =        51.16653      C
AVERAGE CANISTER TEMP. =        179.5050      C
AVERAGE HEAT SHIELD TEMP. =      140.9490      C
AVERAGE LINER TEMP. =           76.04636      C
AVERAGE INNER GAP TEMP. =        137.1988      C
AVERAGE OUTER GAP TEMP. =        126.5723      C
AVE. CONCRETE EXTERIOR TEMP=      45.78089      C

CONCRETE EXTERIOR H=             2.267012      W/SQM/C
INNER GAP HEAT TRANSFER COEF=     4.857914      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=     4.866596      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =           6.8768144E-02  kg/sec
INNER AIR VELOCITY =              0.1834406      m/sec
OUTER AIR VELOCITY =              0.2326146      m/sec
TOTAL TEMPERATURE RISE =          62.22222      C
INNER GAP AIR EXIT TEMP. =         160.2898      C
INNER GAP AIR EXIT TEMP. =         151.7752      C
PRESSURE DROP IN INNER GAP=        0.1212587      Velocity Head
PRESSURE DROP IN OUTER GAP=        0.2615153      Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646      Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690      Watts
*****

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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

102.97  99.83  73.79  66.62  66.57  68.14
68.11  68.07  61.82  63.53  72.76  60.50
*****

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THE CASE FOR QTOTAL = 20000.0 Watts
*****
THE TIME IS: 14.00000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1. 54.85 88.69 81.07 92.54 54.68 54.33 46.28 40.12 36.08 34.62 34.68 35.53 36.27
2. 53.93 85.42 81.55 97.51 56.54 56.24 48.84 42.28 37.44 35.48 35.40 36.21 36.85
3. 121.10 89.44 100.44 103.24 59.33 59.01 51.12 44.06 38.74 36.45 36.21 36.92 37.50
4. 160.47 97.36 117.09 108.04 62.49 62.15 53.64 46.01 40.21 37.60 37.16 37.76 38.28
5. 178.04 106.21 127.15 111.89 65.61 65.24 56.20 48.06 41.81 38.91 38.30 38.81 39.27
6. 186.96 114.88 133.77 115.19 68.54 68.16 58.67 50.11 43.48 40.34 39.65 40.26 40.87
7. 192.95 123.06 139.05 118.21 71.30 70.90 61.05 52.12 45.15 41.74 40.87 41.37 41.89
8. 197.77 130.68 143.69 121.02 73.92 73.51 63.34 54.08 46.80 43.12 42.03 42.38 42.81
9. 202.19 137.77 148.03 123.66 76.43 76.01 65.55 56.00 48.43 44.49 43.19 43.38 43.72
10. 205.84 144.32 151.90 126.15 78.83 78.41 67.69 57.88 50.05 45.88 44.41 44.48 44.74
11. 209.29 150.38 155.56 128.52 81.14 80.70 69.76 59.71 51.64 47.28 45.75 45.94 46.36
12. 212.55 156.01 159.02 130.75 83.34 82.90 71.74 61.45 53.14 48.57 46.86 46.92 47.24
13. 215.62 161.23 162.28 132.87 85.43 84.98 73.61 63.11 54.56 49.74 47.82 47.72 47.95
14. 218.63 166.21 165.45 134.89 87.41 86.95 75.39 64.68 55.90 50.84 48.70 48.45 48.59
15. 221.41 170.74 168.39 136.83 89.22 88.76 77.03 66.12 57.13 51.87 49.55 49.16 49.22
16. 223.87 175.05 171.09 138.64 90.81 90.34 78.47 67.42 58.27 52.86 50.43 49.95 49.94
17. 225.04 178.90 173.05 140.41 92.11 91.64 79.68 68.53 59.28 53.81 51.45 51.21 51.43
18. 224.83 182.20 174.21 142.23 92.99 92.51 80.54 69.36 60.07 54.57 52.15 51.84 51.97
19. 221.46 184.63 173.71 144.19 93.30 92.83 80.95 69.86 60.65 55.18 52.74 52.33 52.38
20. 209.25 185.28 168.97 146.64 92.85 92.40 80.78 69.97 61.06 55.83 53.47 52.98 52.94
21. 173.40 181.65 154.70 150.14 91.55 91.10 79.76 69.53 61.40 56.88 54.91 54.47 54.45
22. 140.41 164.86 141.62 156.08 89.75 89.18 76.39 67.50 61.89 59.34 58.21 57.50 56.88
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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          85.43011      C
CONCRETE THERMOCOUPLE T=        49.74194      C
AVERAGE CONCRETE TEMP. =        52.11233      C
AVERAGE CANISTER TEMP. =        184.5174      C
AVERAGE HEAT SHIELD TEMP. =      145.4327      C
AVERAGE LINER TEMP. =           79.17191      C
AVERAGE INNER GAP TEMP. =        141.6132      C
AVERAGE OUTER GAP TEMP. =        130.5465      C
AVE. CONCRETE EXTERIOR TEMP=      46.08400      C

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CONCRETE EXTERIOR H=          2.278970      W/SQM/C
INNER GAP HEAT TRANSFER COEF=  4.876089      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=  4.886544      W/SQM/C
INNER GAP AIR FLOW FRACTION =  0.6000000      C
TOTAL MASS FLOW RATE =        6.8167619E-02  kg/sec
INNER AIR VELOCITY =          0.1818386      m/sec
OUTER AIR VELOCITY =          0.2305833      m/sec
TOTAL TEMPERATURE RISE =        62.22222      C
INNER GAP AIR EXIT TEMP. =      164.8575      C
INNER GAP AIR EXIT TEMP. =      156.0791      C
PRESSURE DROP IN INNER GAP=    0.1223911      Velocity Head
PRESSURE DROP IN OUTER GAP=    0.2636079      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646      Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

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104.34 101.97 75.17 67.26 67.20 69.15
69.12 69.08 62.81 64.23 73.04 60.98
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 16.00000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1.	58.96	100.03	83.91	103.62	56.90	56.53	47.97	41.30	36.80	35.04	34.98	35.79	36.51
2.	57.95	96.81	84.44	108.20	58.89	58.58	50.81	43.74	38.35	35.98	35.73	36.49	37.10
3.	125.15	98.79	103.77	113.24	61.84	61.51	53.25	45.66	39.73	37.00	36.56	37.21	37.77
4.	164.57	103.78	120.75	117.52	65.17	64.81	55.89	47.70	41.25	38.17	37.52	38.06	38.56
5.	182.24	109.80	131.01	121.05	68.41	68.04	58.55	49.82	42.90	39.50	38.67	39.11	39.55
6.	191.28	116.03	137.79	124.13	71.46	71.06	61.12	51.93	44.60	40.95	40.03	40.57	41.15
7.	197.39	122.21	143.21	126.96	74.31	73.90	63.56	53.99	46.30	42.37	41.27	41.69	42.18
8.	202.33	128.23	147.97	129.62	77.01	76.58	65.91	56.00	47.97	43.76	42.44	42.70	43.10
9.	206.84	134.08	152.41	132.13	79.58	79.15	68.17	57.95	49.62	45.14	43.60	43.71	44.02
10.	210.58	139.69	156.37	134.50	82.04	81.59	70.35	59.85	51.24	46.53	44.83	44.81	45.04
11.	214.12	145.08	160.11	136.75	84.39	83.94	72.45	61.69	52.84	47.95	46.17	46.27	46.65
12.	217.45	150.24	163.64	138.90	86.63	86.17	74.45	63.46	54.36	49.24	47.29	47.26	47.53
13.	220.58	155.18	166.96	140.94	88.75	88.29	76.35	65.12	55.78	50.42	48.26	48.06	48.24
14.	223.65	160.01	170.18	142.89	90.76	90.29	78.15	66.70	57.12	51.52	49.15	48.80	48.89
15.	226.47	164.52	173.16	144.79	92.59	92.11	79.80	68.15	58.36	52.55	50.00	49.51	49.52
16.	228.97	168.90	175.89	146.58	94.20	93.71	81.25	69.45	59.50	53.55	50.88	50.31	50.25
17.	230.17	172.95	177.87	148.37	95.49	95.00	82.45	70.56	60.51	54.51	51.91	51.56	51.71
18.	230.00	176.59	179.04	150.17	96.35	95.86	83.29	71.38	61.30	55.27	52.62	52.19	52.25
19.	226.67	179.57	178.53	152.09	96.62	96.13	83.67	71.85	61.87	55.89	53.22	52.68	52.67
20.	214.53	181.24	173.74	154.30	96.08	95.61	83.43	71.93	62.27	56.55	53.97	53.36	53.24
21.	178.83	179.74	159.26	157.24	94.63	94.16	82.27	71.40	62.60	57.65	55.48	54.92	54.82
22.	145.50	168.15	145.74	161.80	92.63	92.04	78.54	69.08	63.03	60.23	58.98	58.15	57.42

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AMBIENT TEMPERATURE = 37.77778      C
LINER THERMOCOUPLE T= 88.75336      C
CONCRETE THERMOCOUPLE T= 50.41672      C
AVERAGE CONCRETE TEMP. = 53.08664      C
AVERAGE CANISTER TEMP. = 189.2701      C
AVERAGE HEAT SHIELD TEMP. = 149.7000      C
AVERAGE LINER TEMP. = 82.22881      C
AVERAGE INNER GAP TEMP. = 145.9330      C
AVERAGE OUTER GAP TEMP. = 133.8520      C
AVE. CONCRETE EXTERIOR TEMP= 46.38642      C

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CONCRETE EXTERIOR H=          2.290072      W/SQM/C
INNER GAP HEAT TRANSFER COEF=  4.475856      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=  4.571478      W/SQM/C
INNER GAP AIR FLOW FRACTION =  0.6000000      C
TOTAL MASS FLOW RATE =        9.2953891E-02  kg/sec
INNER AIR VELOCITY =          0.2479566      m/sec
OUTER AIR VELOCITY =          0.3144251      m/sec
TOTAL TEMPERATURE RISE =        62.22222      C
INNER GAP AIR EXIT TEMP. =      168.1455      C

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INNER GAP AIR EXIT TEMP. =      161.7955      C
PRESSURE DROP IN INNER GAP=      0.1698427      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.3644301      Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =      20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =      3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =      126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

105.77 102.86 76.52 67.87 67.81 70.13
70.09 70.05 63.80 64.91 73.32 61.47
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS:      18.00000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

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1.	62.99	95.62	87.21	99.35	59.07	58.68	49.62	42.49	37.55	35.50	35.31	36.06	36.76
2.	61.92	92.43	87.77	104.53	61.20	60.87	52.74	45.21	39.28	36.53	36.09	36.77	37.37
3.	129.06	96.46	107.42	110.47	64.30	63.96	55.33	47.27	40.77	37.59	36.93	37.51	38.05
4.	168.46	104.34	124.55	115.43	67.78	67.41	58.11	49.40	42.35	38.80	37.91	38.37	38.84
5.	186.21	113.19	134.91	119.41	71.16	70.76	60.87	51.60	44.04	40.15	39.08	39.44	39.84
6.	195.35	121.90	141.75	122.83	74.31	73.90	63.53	53.77	45.79	41.62	40.45	40.90	41.44
7.	201.57	130.15	147.22	125.95	77.26	76.83	66.05	55.88	47.51	43.06	41.70	42.02	42.47
8.	206.61	137.87	152.03	128.84	80.03	79.59	68.45	57.93	49.20	44.46	42.87	43.04	43.40
9.	211.22	145.08	156.52	131.57	82.67	82.22	70.76	59.91	50.87	45.85	44.04	44.05	44.32
10.	215.04	151.77	160.52	134.12	85.19	84.72	72.98	61.84	52.51	47.25	45.27	45.16	45.35
11.	218.65	157.98	164.31	136.54	87.59	87.12	75.12	63.71	54.12	48.67	46.63	46.62	46.94
12.	222.05	163.75	167.88	138.83	89.87	89.39	77.15	65.49	55.65	49.97	47.75	47.61	47.83
13.	225.24	169.13	171.23	140.99	92.03	91.54	79.08	67.17	57.07	51.16	48.72	48.42	48.55
14.	228.35	174.26	174.48	143.03	94.07	93.57	80.89	68.76	58.42	52.26	49.61	49.15	49.20
15.	231.22	178.93	177.49	145.00	95.92	95.42	82.55	70.22	59.66	53.30	50.47	49.87	49.83
16.	233.75	183.37	180.24	146.84	97.54	97.03	84.02	71.52	60.80	54.30	51.36	50.67	50.55
17.	234.99	187.36	182.24	148.65	98.84	98.33	85.22	72.62	61.82	55.27	52.39	51.90	51.99
18.	234.85	190.78	183.42	150.49	99.68	99.17	86.04	73.44	62.61	56.03	53.11	52.54	52.54
19.	231.57	193.35	182.91	152.52	99.89	99.39	86.38	73.89	63.17	56.65	53.71	53.04	52.96
20.	219.53	194.14	178.09	154.96	99.27	98.77	86.07	73.91	63.56	57.33	54.49	53.74	53.55
21.	184.05	190.71	163.50	158.52	97.66	97.18	84.78	73.29	63.86	58.48	56.07	55.38	55.21
22.	150.45	173.49	149.68	164.54	95.48	94.86	80.66	70.66	64.19	61.16	59.77	58.80	57.97

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AMBIENT TEMPERATURE =      37.77778      C
LINER THERMOCOUPLE T=      92.02917      C
CONCRETE THERMOCOUPLE T=      51.15570      C
AVERAGE CONCRETE TEMP. =      54.08698      C
AVERAGE CANISTER TEMP. =      193.7738      C
AVERAGE HEAT SHIELD TEMP. =      153.7910      C
AVERAGE LINER TEMP. =      85.23549      C
AVERAGE INNER GAP TEMP. =      149.3831      C
AVERAGE OUTER GAP TEMP. =      138.4841      C
AVE. CONCRETE EXTERIOR TEMP=      46.69572      C

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CONCRETE EXTERIOR H=      2.301281      W/SQM/C
INNER GAP HEAT TRANSFER COEF=      4.881854      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=      4.903571      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =      6.9737114E-02      kg/sec
INNER AIR VELOCITY =      0.1860253      m/sec
OUTER AIR VELOCITY =      0.2358922      m/sec
TOTAL TEMPERATURE RISE =      62.22222      C
INNER GAP AIR EXIT TEMP. =      173.4883      C
INNER GAP AIR EXIT TEMP. =      164.5425      C
PRESSURE DROP IN INNER GAP=      0.1292024      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.2786766      Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =      20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =      3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =      126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

107.24 106.07 77.82 68.47 68.40 71.07
71.04 70.99 64.80 65.57 73.59 61.90

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 20.00000

THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	66.94	104.61	89.99	108.24	61.17	60.76	51.25	43.66	38.32	35.99	35.65	36.35	37.02
2.	65.81	101.41	90.59	113.15	63.43	63.09	54.63	46.67	40.25	37.11	36.46	37.08	37.64
3.	132.82	103.89	110.62	118.57	66.70	66.34	57.38	48.87	41.84	38.23	37.33	37.83	38.34
4.	172.17	109.63	127.99	123.14	70.32	69.94	60.29	51.11	43.49	39.47	38.34	38.70	39.15
5.	189.96	116.41	138.49	126.90	73.84	73.43	63.16	53.38	45.23	40.85	39.52	39.78	40.15
6.	199.19	123.35	145.46	130.16	77.10	76.67	65.90	55.62	47.01	42.34	40.90	41.25	41.75
7.	205.51	130.16	151.03	133.15	80.14	79.70	68.50	57.78	48.77	43.80	42.15	42.37	42.79
8.	210.64	136.75	155.92	135.95	82.99	82.54	70.97	59.87	50.49	45.21	43.34	43.40	43.72
9.	215.34	143.09	160.50	138.58	85.70	85.23	73.33	61.89	52.17	46.61	44.52	44.41	44.64
10.	219.24	149.14	164.57	141.06	88.27	87.80	75.59	63.85	53.83	48.03	45.75	45.53	45.67
11.	222.92	154.90	168.41	143.42	90.73	90.24	77.77	65.74	55.46	49.46	47.11	46.98	47.26
12.	226.39	160.38	172.03	145.66	93.05	92.56	79.83	67.54	56.99	50.76	48.24	47.97	48.14
13.	229.62	165.58	175.44	147.78	95.25	94.75	81.78	69.24	58.43	51.95	49.21	48.78	48.86
14.	232.79	170.65	178.73	149.81	97.32	96.81	83.62	70.84	59.78	53.06	50.11	49.52	49.51
15.	235.69	175.34	181.77	151.79	99.20	98.68	85.30	72.31	61.03	54.10	50.97	50.24	50.15
16.	238.26	179.88	184.55	153.64	100.83	100.31	86.77	73.62	62.17	55.11	51.87	51.05	50.87
17.	239.53	184.04	186.56	155.49	102.13	101.60	87.97	74.72	63.19	56.08	52.89	52.26	52.27
18.	239.43	187.75	187.75	157.37	102.95	102.43	88.79	75.52	63.98	56.85	53.62	52.90	52.82
19.	236.20	190.74	187.23	159.39	103.12	102.60	89.08	75.95	64.53	57.47	54.23	53.41	53.25
20.	224.28	192.29	182.39	161.75	102.40	101.89	88.70	75.93	64.90	58.16	55.03	54.13	53.86
21.	189.06	190.42	167.68	164.95	100.65	100.15	87.26	75.20	65.17	59.35	56.69	55.85	55.59
22.	155.26	177.13	153.49	169.99	98.28	97.63	82.77	72.25	65.38	62.11	60.57	59.47	58.53

AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 95.24945 C
CONCRETE THERMOCOUPLE T= 51.95135 C
AVERAGE CONCRETE TEMP. = 55.11085 C
AVERAGE CANISTER TEMP. = 198.0510 C
AVERAGE HEAT SHIELD TEMP. = 157.6990 C
AVERAGE LINER TEMP. = 88.18230 C
AVERAGE INNER GAP TEMP. = 148.9613 C
AVERAGE OUTER GAP TEMP. = 145.4581 C
AVE. CONCRETE EXTERIOR TEMP= 47.01644 C

CONCRETE EXTERIOR H= 2.312147 W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.776566 W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 4.810992 W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000 C
TOTAL MASS FLOW RATE = 6.0484543E-02 kg/sec
INNER AIR VELOCITY = 0.2398809 m/sec
OUTER AIR VELOCITY = 0.3041846 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 177.1347 C
INNER GAP AIR EXIT TEMP. = 169.9850 C
PRESSURE DROP IN INNER GAP= 0.1663258 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.3697030 Velocity Head

KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

108.76 107.64 79.09 69.05 68.97 71.99
71.95 71.91 65.80 66.22 73.85 62.37

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 22.00000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	70.80	105.06	92.52	108.65	63.22	62.80	52.84	44.83	39.10	36.50	36.01	36.66	37.30
2.	69.63	101.93	93.17	113.84	65.61	65.27	56.50	48.12	41.24	37.72	36.86	37.40	37.94
3.	136.44	105.01	113.55	119.64	69.04	68.67	59.41	50.47	42.94	38.90	37.76	38.17	38.65
4.	175.70	111.56	131.15	124.51	72.82	72.42	62.44	52.81	44.66	40.18	38.79	39.06	39.47
5.	193.52	119.15	141.82	128.47	76.46	76.05	65.42	55.17	46.45	41.60	39.98	40.14	40.48
6.	202.83	126.83	148.92	131.90	79.84	79.40	68.26	57.47	48.28	43.11	41.38	41.61	42.07
7.	209.24	134.27	154.61	135.03	82.97	82.52	70.93	59.69	50.07	44.58	42.64	42.75	43.12
8.	214.46	141.40	159.62	137.93	85.90	85.44	73.46	61.82	51.81	46.01	43.84	43.78	44.05
9.	219.23	148.20	164.29	140.67	88.68	88.20	75.87	63.88	53.52	47.42	45.02	44.80	44.99
10.	223.21	154.62	168.44	143.23	91.31	90.82	78.18	65.87	55.20	48.85	46.27	45.92	46.01
11.	226.95	160.69	172.36	145.65	93.82	93.32	80.40	67.79	56.84	50.29	47.63	47.36	47.58
12.	230.47	166.42	176.04	147.94	96.19	95.68	82.50	69.61	58.39	51.60	48.76	48.35	48.47
13.	233.76	171.82	179.50	150.11	98.42	97.91	84.47	71.33	59.83	52.80	49.73	49.17	49.19
14.	236.96	177.04	182.83	152.16	100.53	100.00	86.34	72.94	61.19	53.91	50.63	49.91	49.84
15.	239.90	181.85	185.90	154.16	102.43	101.90	88.03	74.42	62.45	54.96	51.50	50.63	50.48
16.	242.50	186.47	188.71	156.02	104.08	103.54	89.51	75.74	63.60	55.97	52.40	51.43	51.20
17.	243.80	190.67	190.74	157.87	105.38	104.84	90.72	76.84	64.61	56.94	53.42	52.63	52.57
18.	243.74	194.37	191.94	159.75	106.18	105.64	91.51	77.64	65.40	57.71	54.15	53.27	53.12
19.	240.57	197.30	191.42	161.78	106.30	105.76	91.77	78.04	65.94	58.34	54.77	53.79	53.55
20.	228.77	198.68	186.56	164.23	105.49	104.97	91.31	77.96	66.29	59.03	55.60	54.53	54.19
21.	193.85	196.36	171.78	167.61	103.59	103.08	89.73	77.12	66.52	60.26	57.33	56.33	55.99
22.	159.91	181.12	157.23	173.11	101.03	100.35	84.86	73.84	66.58	63.07	61.38	60.15	59.09

AMBIENT TEMPERATURE =	37.77778	C
LINER THERMOCOUPLE T=	98.42328	C
CONCRETE THERMOCOUPLE T=	52.79730	C
AVERAGE CONCRETE TEMP. =	56.15594	C
AVERAGE CANISTER TEMP. =	202.1094	C
AVERAGE HEAT SHIELD TEMP. =	161.4121	C
AVERAGE LINER TEMP. =	91.08705	C
AVERAGE INNER GAP TEMP. =	161.3471	C
AVERAGE OUTER GAP TEMP. =	141.3283	C
AVE. CONCRETE EXTERIOR TEMP=	47.35181	C

CONCRETE EXTERIOR H=	2.321123	W/SQM/C
INNER GAP HEAT TRANSFER COEF=	4.496992	W/SQM/C
OUTER GAP HEAT TRANSFER COEF=	4.606680	W/SQM/C
INNER GAP AIR FLOW FRACTION =	0.6000000	C
TOTAL MASS FLOW RATE =	7.6729678E-02	kg/sec
INNER AIR VELOCITY =	0.2046781	m/sec
OUTER AIR VELOCITY =	0.2595452	m/sec
TOTAL TEMPERATURE RISE =	62.22222	C
INNER GAP AIR EXIT TEMP. =	181.1167	C
INNER GAP AIR EXIT TEMP. =	173.1124	C
PRESSURE DROP IN INNER GAP=	0.1490533	Velocity Head
PRESSURE DROP IN OUTER GAP=	0.3102058	Velocity Head

KK = 3

THE TOTAL HEAT INPUT FROM CANISTER =	20868.36	Watts
THE TOTAL HEAT INPUT FROM SIDE =	2630.646	Watts
THE TOTAL HEAT INPUT FROM LID =	3028.957	Watts
THE TOTAL HEAT INPUT FROM BASE =	126.5690	Watts

THE TEMPERATURES FOR THE CASKLID NODES

CAN...10..11..12..13..20..21..22..30..31..32..41

110.31	108.92	80.33	69.61	69.53	72.89
72.84	72.79	66.81	66.85	74.11	62.78

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 24.00000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	74.58	113.07	95.92	116.51	65.27	64.82	54.42	46.00	39.90	37.03	36.40	36.98	37.59
2.	73.39	109.99	96.59	121.42	67.79	67.43	58.33	49.57	42.24	38.36	37.28	37.74	38.25
3.	139.95	112.04	117.18	126.78	71.36	70.98	61.40	52.06	44.06	39.61	38.22	38.53	38.98

4.	179.08	117.06	134.82	131.30	75.28	74.88	64.56	54.51	45.85	40.93	39.27	39.44	39.81
5.	196.91	123.12	145.46	135.04	79.06	78.63	67.66	56.95	47.70	42.38	40.48	40.53	40.84
6.	206.28	129.42	152.54	138.29	82.54	82.09	70.58	59.33	49.57	43.92	41.89	42.01	42.42
7.	212.77	135.70	158.21	141.28	85.76	85.30	73.33	61.60	51.40	45.41	43.16	43.15	43.47
8.	218.06	141.84	163.20	144.06	88.78	88.30	75.92	63.78	53.17	46.86	44.37	44.18	44.41
9.	222.90	147.83	167.87	146.68	91.62	91.13	78.39	65.87	54.90	48.28	45.56	45.21	45.35
10.	226.94	153.60	172.02	149.14	94.31	93.81	80.75	67.90	56.60	49.72	46.81	46.33	46.38
11.	230.74	159.16	175.94	151.48	96.87	96.35	83.00	69.85	58.26	51.17	48.17	47.77	47.93
12.	234.31	164.50	179.63	153.68	99.28	98.76	85.14	71.70	59.83	52.49	49.31	48.76	48.82
13.	237.64	169.62	183.10	155.78	101.56	101.02	87.15	73.43	61.28	53.69	50.29	49.57	49.54
14.	240.88	174.63	186.45	157.76	103.69	103.15	89.03	75.06	62.65	54.81	51.19	50.32	50.19
15.	243.85	179.32	189.53	159.69	105.62	105.07	90.75	76.55	63.91	55.86	52.06	51.04	50.83
16.	246.48	183.88	192.35	161.50	107.28	106.73	92.24	77.88	65.06	56.87	52.96	51.84	51.55
17.	247.81	188.10	194.39	163.28	108.58	108.02	93.44	78.98	66.08	57.85	53.98	53.02	52.88
18.	247.79	191.91	195.60	165.09	109.37	108.81	94.22	79.76	66.86	58.62	54.71	53.66	53.43
19.	244.68	195.07	195.08	167.01	109.43	108.88	94.44	80.14	67.39	59.25	55.33	54.18	53.87
20.	233.01	196.94	190.22	169.24	108.53	107.99	93.90	80.01	67.72	59.95	56.19	54.95	54.52
21.	198.42	195.71	175.39	172.22	106.49	105.96	92.18	79.05	67.90	61.20	57.99	56.82	56.40
22.	164.40	183.47	160.71	176.88	103.73	103.03	86.93	75.43	67.80	64.06	62.21	60.83	59.66

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          101.5580      C
CONCRETE THERMOCOUPLE T=        53.68823      C
AVERAGE CONCRETE TEMP. =        57.22021      C
AVERAGE CANISTER TEMP. =        205.9622      C
AVERAGE HEAT SHIELD TEMP. =      165.0099      C
AVERAGE LINER TEMP. =           93.94963      C
AVERAGE INNER GAP TEMP. =        161.4500      C
AVERAGE OUTER GAP TEMP. =        147.6696      C
AVE. CONCRETE EXTERIOR TEMP=      47.70365      C

CONCRETE EXTERIOR H=             2.331342      W/SQM/C
INNER GAP HEAT TRANSFER COEF=     4.453824      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=     4.591478      W/SQM/C
INNER GAP AIR FLOW FRACTION =     0.6000000      C
TOTAL MASS FLOW RATE =           9.4304740E-02  kg/sec
INNER AIR VELOCITY =             0.2515600      m/sec
OUTER AIR VELOCITY =             0.3189945      m/sec
TOTAL TEMPERATURE RISE =         62.22222      C
INNER GAP AIR EXIT TEMP. =        183.4712      C
INNER GAP AIR EXIT TEMP. =        176.8803      C
PRESSURE DROP IN INNER GAP=       0.1832679      Velocity Head
PRESSURE DROP IN OUTER GAP=       0.3911750      Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646      Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
 CAN...10...11...12...13...20...21...22...30...31...32...41

111.89	110.42	81.53	70.15	70.06	73.76
73.72	73.66	67.82	67.47	74.36	63.22

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 26.00000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1.	78.29	115.79	97.95	119.24	67.27	66.81	55.99	47.17	40.70	37.58	36.80	37.31	37.90
2.	77.07	112.70	98.69	124.26	69.92	69.55	60.16	51.01	43.26	39.02	37.73	38.09	38.57
3.	143.34	114.79	119.64	129.74	73.64	73.26	63.39	53.65	45.20	40.34	38.70	38.91	39.32
4.	182.32	119.88	137.53	134.36	77.71	77.30	66.68	56.21	47.07	41.71	39.78	39.84	40.18
5.	200.14	126.01	148.38	138.18	81.61	81.17	69.88	58.74	48.98	43.19	41.01	40.95	41.21
6.	209.57	132.39	155.63	141.51	85.20	84.74	72.89	61.18	50.89	44.76	42.43	42.42	42.79
7.	216.11	138.75	161.46	144.55	88.51	88.03	75.71	63.51	52.76	46.27	43.72	43.57	43.85
8.	221.47	144.98	166.59	147.38	91.60	91.11	78.37	65.74	54.56	47.74	44.93	44.61	44.79
9.	226.37	151.05	171.36	150.04	94.51	94.00	80.89	67.87	56.32	49.18	46.13	45.64	45.73
10.	230.47	156.91	175.62	152.54	97.26	96.74	83.30	69.93	58.04	50.63	47.38	46.77	46.76
11.	234.32	162.54	179.62	154.89	99.86	99.34	85.59	71.91	59.72	52.08	48.75	48.19	48.29
12.	237.94	167.95	183.38	157.12	102.33	101.79	87.76	73.79	61.29	53.41	49.89	49.19	49.18
13.	241.31	173.14	186.90	159.23	104.64	104.09	89.80	75.54	62.76	54.62	50.87	50.00	49.90

14.	244.58	178.22	190.29	161.23	106.81	106.25	91.71	77.19	64.14	55.74	51.78	50.75	50.56
15.	247.58	182.96	193.41	163.16	108.76	108.19	93.44	78.69	65.41	56.80	52.65	51.47	51.19
16.	250.22	187.58	196.25	164.97	110.43	109.86	94.94	80.02	66.56	57.81	53.55	52.27	51.91
17.	251.59	191.85	198.30	166.76	111.73	111.16	96.15	81.13	67.59	58.79	54.56	53.42	53.20
18.	251.60	195.70	199.52	168.56	112.49	111.92	96.91	81.90	68.36	59.56	55.29	54.06	53.75
19.	248.54	198.90	199.00	170.49	112.51	111.95	97.09	82.24	68.88	60.19	55.92	54.59	54.19
20.	237.01	200.79	194.14	172.72	111.52	110.97	96.48	82.06	69.18	60.90	56.80	55.38	54.87
21.	202.77	199.58	179.27	175.72	109.33	108.79	94.60	80.98	69.30	62.17	58.67	57.33	56.81
22.	168.72	187.10	164.20	180.42	106.39	105.67	88.98	77.01	69.03	65.06	63.05	61.52	60.23

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          104.6385      C
CONCRETE THERMOCOUPLE T=         54.61960      C
AVERAGE CONCRETE TEMP. =         58.30177      C
AVERAGE CANISTER TEMP. =         209.6256      C
AVERAGE HEAT SHIELD TEMP. =        168.4282      C
AVERAGE LINER TEMP. =           96.76179      C
AVERAGE INNER GAP TEMP. =         163.7241      C
AVERAGE OUTER GAP TEMP. =         151.5425      C
AVE. CONCRETE EXTERIOR TEMP=        48.07243      C

CONCRETE EXTERIOR H=             2.340752      W/SQM/C
INNER GAP HEAT TRANSFER COEF=      4.506910      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=      4.625466      W/SQM/C
INNER GAP AIR FLOW FRACTION =       0.6000000      C
TOTAL MASS FLOW RATE =      8.7241225E-02      kg/sec
INNER AIR VELOCITY =              0.2524962      m/sec
OUTER AIR VELOCITY =              0.3201816      m/sec
TOTAL TEMPERATURE RISE =           62.22222      C
INNER GAP AIR EXIT TEMP. =         187.1014      C
INNER GAP AIR EXIT TEMP. =         180.4178      C
PRESSURE DROP IN INNER GAP=        0.1855893      Velocity Head
PRESSURE DROP IN OUTER GAP=        0.3987702      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =       2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =        3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =       126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

113.49	112.33	82.70	70.67	70.59	74.61
74.57	74.51	68.83	68.08	74.61	63.64

THE CASE FOR QTOTAL = 20000.0 Watts

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THE TIME IS:    28.00000
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THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1.	81.86	115.13	100.60	118.64	69.21	68.74	57.52	48.33	41.52	38.15	37.22	37.67	38.22
2.	80.64	112.06	101.38	123.99	71.98	71.60	61.95	52.45	44.29	39.70	38.19	38.47	38.91
3.	146.57	114.95	122.55	129.90	75.86	75.46	65.33	55.24	46.35	41.10	39.21	39.32	39.69
4.	185.39	121.19	140.55	134.89	80.07	79.64	68.75	57.90	48.30	42.52	40.31	40.26	40.56
5.	203.20	128.50	151.47	138.92	84.10	83.65	72.06	60.52	50.27	44.04	41.57	41.39	41.61
6.	212.68	135.94	158.78	142.44	87.79	87.32	75.17	63.03	52.24	45.63	43.00	42.86	43.18
7.	219.29	143.23	164.66	145.64	91.20	90.71	78.06	65.42	54.14	47.17	44.30	44.02	44.24
8.	224.71	150.25	169.84	148.62	94.37	93.86	80.79	67.70	55.98	48.65	45.52	45.06	45.19
9.	229.67	156.99	174.67	151.42	97.35	96.83	83.37	69.87	57.76	50.11	46.73	46.10	46.14
10.	233.82	163.40	178.96	154.04	100.16	99.63	85.82	71.97	59.50	51.57	47.99	47.23	47.17
11.	237.73	169.49	183.00	156.51	102.82	102.28	88.16	73.98	61.20	53.04	49.35	48.64	48.68
12.	241.39	175.27	186.79	158.83	105.33	104.77	90.36	75.88	62.79	54.37	50.50	49.63	49.57
13.	244.79	180.74	190.34	161.03	107.67	107.11	92.43	77.66	64.27	55.59	51.48	50.45	50.29
14.	248.10	186.05	193.74	163.11	109.87	109.30	94.36	79.32	65.66	56.72	52.39	51.20	50.94
15.	251.12	190.95	196.88	165.11	111.85	111.27	96.11	80.84	66.93	57.78	53.26	51.93	51.58
16.	253.79	195.66	199.73	166.99	113.53	112.95	97.63	82.18	68.10	58.79	54.17	52.72	52.29
17.	255.18	199.98	201.80	168.84	114.83	114.24	98.83	83.28	69.12	59.77	55.17	53.84	53.54
18.	255.23	203.80	203.02	170.73	115.57	114.98	99.57	84.04	69.89	60.54	55.90	54.48	54.08
19.	252.23	206.88	202.50	172.78	115.54	114.96	99.71	84.35	70.39	61.17	56.54	55.02	54.53
20.	240.83	208.47	197.65	175.15	114.46	113.90	99.02	84.12	70.67	61.88	57.44	55.83	55.22
21.	206.95	206.55	182.78	178.49	112.13	111.58	97.00	82.91	70.72	63.17	59.37	57.85	57.24
22.	172.89	191.67	167.51	183.86	109.00	108.26	91.00	78.59	70.26	66.06	63.90	62.22	60.80

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          107.6747      C
CONCRETE THERMOCOUPLE T=        55.58740      C
AVERAGE CONCRETE TEMP. =        59.39733      C
AVERAGE CANISTER TEMP. =        213.1189      C
AVERAGE HEAT SHIELD TEMP. =     171.7233      C
AVERAGE LINER TEMP. =          99.52142      C
AVERAGE INNER GAP TEMP. =        162.7793      C
AVERAGE OUTER GAP TEMP. =        158.3974      C
AVE. CONCRETE EXTERIOR TEMP=      48.45856      C

CONCRETE EXTERIOR H=            2.350609      W/SQM/C
INNER GAP HEAT TRANSFER COEF=     4.829419      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=     4.869936      W/SQM/C
INNER GAP AIR FLOW FRACTION =     0.6000000      C
TOTAL MASS FLOW RATE =          5.7469424E-02  kg/sec
INNER AIR VELOCITY =             0.2299515      m/sec
OUTER AIR VELOCITY =             0.2915935      m/sec
TOTAL TEMPERATURE RISE =         62.22222      C
INNER GAP AIR EXIT TEMP. =        191.6686      C
INNER GAP AIR EXIT TEMP. =        183.8589      C
PRESSURE DROP IN INNER GAP=       0.1683975      Velocity Head
PRESSURE DROP IN OUTER GAP=       0.3731643      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =        2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =          3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =         126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

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115.11 115.14 83.83 71.18 71.09 75.44
75.39 75.34 69.84 68.68 74.85 64.04
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS:    30.00000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1. 85.35 124.55 103.08 127.87 71.14 70.65 59.04 49.49 42.35 38.73 37.65 38.03 38.56
2. 84.13 121.53 103.90 132.80 74.03 73.64 63.72 53.87 45.33 40.40 38.68 38.86 39.27
3. 149.70 123.12 125.32 138.10 78.05 77.65 67.26 56.82 47.51 41.88 39.74 39.74 40.08
4. 188.33 127.40 143.44 142.59 82.40 81.97 70.80 59.59 49.55 43.36 40.87 40.71 40.97
5. 206.13 132.70 154.43 146.31 86.55 86.10 74.22 62.29 51.58 44.91 42.15 41.85 42.03
6. 215.64 138.31 161.81 149.58 90.36 89.88 77.42 64.88 53.60 46.53 43.59 43.33 43.60
7. 222.31 144.00 167.76 152.56 93.85 93.35 80.39 67.33 55.54 48.10 44.91 44.49 44.66
8. 227.79 149.65 173.00 155.33 97.10 96.58 83.18 69.65 57.41 49.60 46.14 45.54 45.62
9. 232.80 155.23 177.87 157.93 100.14 99.62 85.81 71.87 59.22 51.07 47.36 46.59 46.57
10. 237.00 160.67 182.20 160.36 103.01 102.47 88.32 74.00 60.98 52.55 48.63 47.71 47.60
11. 240.95 165.97 186.28 162.64 105.72 105.17 90.69 76.05 62.70 54.02 49.99 49.11 49.08
12. 244.65 171.12 190.11 164.79 108.28 107.71 92.94 77.97 64.31 55.37 51.13 50.11 49.97
13. 248.09 176.09 193.68 166.82 110.66 110.09 95.03 79.77 65.80 56.59 52.13 50.93 50.69
14. 251.42 181.02 197.11 168.72 112.89 112.31 96.99 81.45 67.20 57.72 53.04 51.68 51.35
15. 254.47 185.65 200.27 170.57 114.88 114.30 98.76 82.98 68.49 58.79 53.91 52.40 51.98
16. 257.16 190.19 203.13 172.27 116.58 115.99 100.28 84.33 69.66 59.81 54.81 53.19 52.69
17. 258.58 194.44 205.20 173.95 117.88 117.28 101.48 85.43 70.68 60.78 55.80 54.28 53.89
18. 258.65 198.31 206.42 175.63 118.60 118.00 102.21 86.18 71.44 61.55 56.53 54.91 54.43
19. 255.71 201.61 205.91 177.40 118.52 117.93 102.30 86.46 71.93 62.18 57.17 55.46 54.88
20. 244.44 203.77 201.05 179.43 117.35 116.77 101.54 86.17 72.17 62.89 58.09 56.29 55.59
21. 210.92 203.17 186.17 182.12 114.88 114.31 99.37 84.84 72.16 64.18 60.09 58.39 57.67
22. 176.88 192.21 170.68 186.30 111.57 110.80 93.00 80.16 71.50 67.08 64.75 62.91 61.38
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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          110.6617      C
CONCRETE THERMOCOUPLE T=        56.58807      C
AVERAGE CONCRETE TEMP. =        60.50580      C
AVERAGE CANISTER TEMP. =        216.4432      C
AVERAGE HEAT SHIELD TEMP. =     174.8781      C
AVERAGE LINER TEMP. =          102.2426      C
AVERAGE INNER GAP TEMP. =        167.8728      C
AVERAGE OUTER GAP TEMP. =        159.6884      C

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AVE. CONCRETE EXTERIOR TEMP=      48.86176      C

CONCRETE EXTERIOR H=              2.359257      W/SQM/C
INNER GAP HEAT TRANSFER COEF=     4.469909      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=     4.621595      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
  TOTAL MASS FLOW RATE =      7.1428165E-02      kg/sec
  INNER AIR VELOCITY =      0.2858043      m/sec
  OUTER AIR VELOCITY =      0.3624185      m/sec
TOTAL TEMPERATURE RISE =          62.22222      C
INNER GAP AIR EXIT TEMP. =        192.2063      C
INNER GAP AIR EXIT TEMP. =        186.2979      C
PRESSURE DROP IN INNER GAP=      0.2134772      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.4661608      Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =      3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =      126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

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116.74 115.45 84.94 71.68 71.58 76.25
76.21 76.15 70.85 69.27 75.10 64.46
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THE CASE FOR QTOTAL = 20000.0 Watts

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THE TIME IS:      32.00000
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THE TEMPERATURES FOR THE SIDE NODES

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CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.   88.74 118.60 105.61 122.02 73.04 72.53 60.54 50.64 43.18 39.33 38.11 38.42 38.91
2.   87.53 115.64 106.48 127.66 76.04 75.65 65.47 55.29 46.38 41.12 39.18 39.28 39.65
3.  152.71 119.06 128.06 133.94 80.21 79.79 69.16 58.39 48.69 42.68 40.29 40.18 40.48
4.  191.15 126.01 146.24 139.18 84.70 84.26 72.83 61.27 50.81 44.21 41.46 41.18 41.39
5.  208.92 134.00 157.27 143.45 88.97 88.50 76.36 64.06 52.90 45.81 42.76 42.33 42.46
6.  218.47 142.05 164.70 147.14 92.88 92.39 79.64 66.72 54.97 47.46 44.22 43.82 44.03
7.  225.19 149.87 170.69 150.48 96.46 95.95 82.69 69.23 56.95 49.05 45.55 44.98 45.10
8.  230.72 157.34 175.97 153.58 99.78 99.26 85.54 71.61 58.86 50.57 46.79 46.05 46.06
9.  235.78 164.45 180.88 156.47 102.90 102.36 88.24 73.87 60.70 52.06 48.02 47.10 47.01
10. 240.03 171.18 185.25 159.17 105.83 105.27 90.79 76.04 62.49 53.55 49.29 48.22 48.04
11. 244.02 177.52 189.36 161.70 108.59 108.02 93.21 78.11 64.22 55.03 50.65 49.61 49.51
12. 247.75 183.50 193.21 164.08 111.18 110.61 95.48 80.06 65.85 56.39 51.80 50.60 50.39
13. 251.22 189.13 196.81 166.31 113.60 113.02 97.61 81.88 67.36 57.62 52.79 51.42 51.11
14. 254.58 194.56 200.26 168.41 115.86 115.26 99.59 83.59 68.77 58.76 53.71 52.17 51.77
15. 257.64 199.55 203.43 170.40 117.87 117.27 101.38 85.13 70.06 59.83 54.59 52.90 52.41
16. 260.35 204.32 206.30 172.27 119.58 118.97 102.91 86.48 71.23 60.85 55.48 53.68 53.11
17. 261.79 208.66 208.39 174.11 120.87 120.26 104.10 87.58 72.25 61.82 56.46 54.74 54.26
18. 261.90 212.48 209.61 175.98 121.57 120.96 104.81 88.31 73.01 62.58 57.18 55.37 54.79
19. 259.00 215.49 209.11 178.02 121.44 120.84 104.87 88.57 73.48 63.21 57.83 55.92 55.25
20. 247.87 216.95 204.28 180.44 120.19 119.60 104.03 88.21 73.69 63.93 58.77 56.77 55.98
21. 214.71 214.70 189.44 183.91 117.57 117.00 101.71 86.75 73.60 65.22 60.82 58.93 58.11
22. 180.72 198.14 173.79 189.63 114.09 113.29 94.97 81.72 72.74 68.10 65.61 63.62 61.96
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AMBIENT TEMPERATURE =      37.77778      C
LINER THERMOCOUPLE T=      113.6022      C
CONCRETE THERMOCOUPLE T=      57.61838      C
AVERAGE CONCRETE TEMP. =      61.62497      C
AVERAGE CANISTER TEMP. =      219.6149      C
AVERAGE HEAT SHIELD TEMP. =      177.9121      C
AVERAGE LINER TEMP. =      104.9164      C
AVERAGE INNER GAP TEMP. =      169.6971      C
AVERAGE OUTER GAP TEMP. =      163.5869      C
AVE. CONCRETE EXTERIOR TEMP=      49.28137      C

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CONCRETE EXTERIOR H=              2.368135      W/SQM/C
INNER GAP HEAT TRANSFER COEF=     4.881949      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=     4.920156      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
  TOTAL MASS FLOW RATE =      5.3414691E-02      kg/sec
  INNER AIR VELOCITY =      0.2137273      m/sec
  OUTER AIR VELOCITY =      0.2710202      m/sec
TOTAL TEMPERATURE RISE =          62.22222      C

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INNER GAP AIR EXIT TEMP. =      198.1411      C
INNER GAP AIR EXIT TEMP. =      189.6329      C
PRESSURE DROP IN INNER GAP=      0.1607665    Velocity Head
PRESSURE DROP IN OUTER GAP=      0.3539529    Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =      20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =      3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =      126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

118.37 118.73 86.02 72.16 72.06 77.05
77.00 76.94 71.85 69.86 75.33 64.83
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS:      34.00000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

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1.	92.03	118.65	107.92	121.98	74.91	74.39	62.03	51.78	44.02	39.94	38.57	38.81	39.27
2.	90.84	115.82	108.84	127.89	78.03	77.63	67.20	56.70	47.43	41.85	39.71	39.70	40.04
3.	155.62	119.98	130.61	134.53	82.33	81.91	71.04	59.95	49.86	43.50	40.86	40.65	40.90
4.	193.86	127.89	148.88	140.06	86.96	86.51	74.84	62.95	52.07	45.09	42.07	41.67	41.84
5.	211.60	136.80	159.98	144.53	91.35	90.87	78.47	65.82	54.23	46.73	43.39	42.84	42.92
6.	221.18	145.66	167.48	148.36	95.36	94.86	81.84	68.55	56.35	48.41	44.87	44.33	44.49
7.	227.94	154.12	173.53	151.83	99.03	98.51	84.97	71.12	58.38	50.03	46.21	45.50	45.56
8.	233.52	162.12	178.86	155.03	102.43	101.90	87.88	73.55	60.32	51.57	47.46	46.57	46.53
9.	238.62	169.65	183.82	158.01	105.61	105.06	90.63	75.86	62.19	53.08	48.70	47.63	47.48
10.	242.91	176.69	188.24	160.77	108.59	108.03	93.23	78.06	64.00	54.58	49.98	48.76	48.51
11.	246.94	183.27	192.38	163.36	111.40	110.83	95.69	80.17	65.76	56.07	51.34	50.13	49.95
12.	250.70	189.42	196.26	165.77	114.04	113.45	98.00	82.15	67.41	57.44	52.49	51.12	50.83
13.	254.20	195.16	199.89	168.02	116.49	115.90	100.16	83.99	68.93	58.68	53.49	51.94	51.55
14.	257.58	200.66	203.36	170.11	118.77	118.17	102.17	85.71	70.35	59.82	54.41	52.69	52.21
15.	260.66	205.67	206.54	172.11	120.81	120.20	103.97	87.26	71.65	60.90	55.28	53.42	52.85
16.	263.38	210.44	209.42	173.94	122.53	121.91	105.51	88.62	72.83	61.92	56.18	54.19	53.54
17.	264.84	214.73	211.50	175.72	123.81	123.19	106.70	89.72	73.84	62.88	57.14	55.22	54.64
18.	264.97	218.45	212.73	177.52	124.48	123.86	107.39	90.44	74.59	63.64	57.86	55.84	55.16
19.	262.13	221.31	212.22	179.49	124.31	123.69	107.40	90.66	75.04	64.26	58.51	56.39	55.62
20.	251.12	222.49	207.40	181.93	122.96	122.36	106.48	90.24	75.22	64.98	59.47	57.27	56.37
21.	218.32	219.66	192.59	185.51	120.22	119.63	104.01	88.65	75.05	66.27	61.57	59.48	58.56
22.	184.39	201.02	176.76	191.65	116.55	115.74	96.91	83.27	73.98	69.13	66.47	64.32	62.54

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AMBIENT TEMPERATURE =      37.77778      C
LINER THERMOCOUPLE T=      116.4917      C
CONCRETE THERMOCOUPLE T=      58.67532      C
AVERAGE CONCRETE TEMP. =      62.75314      C
AVERAGE CANISTER TEMP. =      222.6423      C
AVERAGE HEAT SHIELD TEMP. =      180.8262      C
AVERAGE LINER TEMP. =      107.5462      C
AVERAGE INNER GAP TEMP. =      174.4373      C
AVERAGE OUTER GAP TEMP. =      164.9241      C
AVE. CONCRETE EXTERIOR TEMP=      49.71657      C

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CONCRETE EXTERIOR H=      2.376459      W/SQM/C
INNER GAP HEAT TRANSFER COEF=      4.921869      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=      4.961044      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =      6.9895856E-02      kg/sec
INNER AIR VELOCITY =      0.1926604      m/sec
OUTER AIR VELOCITY =      0.2443060      m/sec
TOTAL TEMPERATURE RISE =      62.22222      C
INNER GAP AIR EXIT TEMP. =      201.0216      C
INNER GAP AIR EXIT TEMP. =      191.6479      C
PRESSURE DROP IN INNER GAP=      0.1475740      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.3207273      Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =      20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =      3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =      126.5690      Watts

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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

120.01	120.49	87.07	72.63	72.52	77.83
77.78	77.72	72.85	70.43	75.57	65.21

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 36.00000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1.	95.22	129.72	110.19	133.02	76.74	76.21	63.50	52.93	44.86	40.56	39.05	39.22	39.64
2.	94.06	126.77	111.16	138.35	79.98	79.57	68.91	58.11	48.48	42.60	40.24	40.14	40.44
3.	158.42	128.84	133.13	144.11	84.42	84.00	72.90	61.51	51.05	44.33	41.45	41.13	41.33
4.	196.47	133.82	151.49	148.96	89.18	88.73	76.82	64.61	53.35	45.99	42.70	42.18	42.30
5.	214.17	139.86	162.66	152.98	93.69	93.21	80.56	67.58	55.58	47.67	44.05	43.37	43.40
6.	223.77	146.17	170.21	156.47	97.80	97.29	84.02	70.38	57.75	49.39	45.54	44.86	44.96
7.	230.58	152.50	176.31	159.66	101.55	101.03	87.22	73.01	59.82	51.03	46.90	46.04	46.04
8.	236.19	158.73	181.69	162.60	105.03	104.49	90.20	75.49	61.79	52.59	48.16	47.12	47.01
9.	241.33	164.84	186.69	165.35	108.27	107.72	93.00	77.84	63.69	54.12	49.41	48.18	47.97
10.	245.66	170.75	191.14	167.91	111.31	110.74	95.65	80.08	65.53	55.63	50.70	49.31	49.00
11.	249.72	176.46	195.31	170.31	114.17	113.58	98.15	82.22	67.31	57.14	52.05	50.67	50.41
12.	253.51	181.96	199.21	172.56	116.84	116.25	100.49	84.22	68.97	58.51	53.21	51.65	51.29
13.	257.03	187.25	202.85	174.67	119.33	118.73	102.68	86.09	70.51	59.76	54.21	52.48	52.01
14.	260.43	192.44	206.33	176.65	121.64	121.03	104.71	87.83	71.94	60.91	55.13	53.23	52.67
15.	263.53	197.29	209.52	178.56	123.69	123.07	106.52	89.39	73.25	61.99	56.01	53.96	53.30
16.	266.27	202.01	212.41	180.32	125.41	124.79	108.07	90.76	74.43	63.01	56.90	54.72	53.99
17.	267.74	206.40	214.49	182.05	126.69	126.06	109.26	91.85	75.45	63.97	57.84	55.71	55.03
18.	267.90	210.37	215.71	183.78	127.34	126.71	109.93	92.55	76.18	64.72	58.56	56.32	55.55
19.	265.10	213.69	215.20	185.63	127.11	126.49	109.90	92.74	76.62	65.34	59.21	56.88	56.01
20.	254.21	215.77	210.38	187.79	125.68	125.08	108.90	92.26	76.76	66.05	60.19	57.77	56.77
21.	221.76	214.89	195.57	190.73	122.80	122.21	106.29	90.54	76.51	67.33	62.33	60.04	59.01
22.	187.91	202.09	179.56	195.37	118.97	118.13	98.82	84.80	75.21	70.16	67.34	65.02	63.11

AMBIENT TEMPERATURE =	37.77778	C
LINER THERMOCOUPLE T=	119.3292	C
CONCRETE THERMOCOUPLE T=	59.75610	C
AVERAGE CONCRETE TEMP. =	63.88859	C
AVERAGE CANISTER TEMP. =	225.5375	C
AVERAGE HEAT SHIELD TEMP. =	183.6341	C
AVERAGE LINER TEMP. =	110.1275	C
AVERAGE INNER GAP TEMP. =	178.0005	C
AVERAGE OUTER GAP TEMP. =	166.5725	C
AVE. CONCRETE EXTERIOR TEMP=	50.16637	C

CONCRETE EXTERIOR H=	2.384423	W/SQM/C
INNER GAP HEAT TRANSFER COEF=	4.514358	W/SQM/C
OUTER GAP HEAT TRANSFER COEF=	4.661038	W/SQM/C
INNER GAP AIR FLOW FRACTION =	0.6000000	C
TOTAL MASS FLOW RATE =	6.7311421E-02	kg/sec
INNER AIR VELOCITY =	0.2588259	m/sec
OUTER AIR VELOCITY =	0.3282081	m/sec
TOTAL TEMPERATURE RISE =	62.22222	C
INNER GAP AIR EXIT TEMP. =	202.0852	C
INNER GAP AIR EXIT TEMP. =	195.3692	C
PRESSURE DROP IN INNER GAP=	0.2009562	Velocity Head
PRESSURE DROP IN OUTER GAP=	0.4336373	Velocity Head

KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

121.64	120.64	88.10	73.08	72.97	78.60
78.54	78.48	73.84	71.00	75.80	65.62

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THE CASE FOR QTOTAL = 20000.0 Watts
*****
THE TIME IS: 38.00000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1. 98.32 126.05 112.59 129.35 78.56 78.01 64.96 54.06 45.71 41.19 39.55 39.64 40.02
2. 97.18 123.20 113.60 135.20 81.91 81.49 70.59 59.50 49.55 43.36 40.80 40.60 40.85
3. 161.12 126.70 135.69 141.69 86.48 86.05 74.73 63.05 52.24 45.18 42.06 41.62 41.78
4. 198.96 133.69 154.07 147.11 91.37 90.91 78.78 66.27 54.63 46.90 43.34 42.70 42.77
5. 216.63 141.72 165.25 151.52 95.99 95.50 82.62 69.32 56.92 48.63 44.73 43.91 43.89
6. 226.26 149.83 172.83 155.33 100.20 99.68 86.16 72.19 59.15 50.38 46.23 45.41 45.45
7. 233.10 157.71 178.96 158.77 104.04 103.51 89.44 74.89 61.26 52.04 47.61 46.60 46.54
8. 238.75 165.25 184.37 161.95 107.59 107.04 92.48 77.41 63.27 53.63 48.89 47.69 47.52
9. 243.92 172.45 189.39 164.91 110.90 110.33 95.34 79.81 65.20 55.18 50.14 48.76 48.48
10. 248.29 179.25 193.86 167.65 113.99 113.41 98.03 82.09 67.07 56.71 51.43 49.88 49.51
11. 252.38 185.67 198.05 170.22 116.89 116.29 100.57 84.26 68.87 58.22 52.79 51.22 50.89
12. 256.19 191.73 201.97 172.61 119.60 119.00 102.95 86.29 70.55 59.61 53.94 52.21 51.76
13. 259.74 197.44 205.62 174.85 122.12 121.51 105.16 88.18 72.10 60.86 54.95 53.04 52.48
14. 263.16 202.94 209.11 176.94 124.45 123.83 107.22 89.93 73.55 62.02 55.87 53.79 53.14
15. 266.27 208.00 212.31 178.91 126.52 125.89 109.05 91.51 74.87 63.10 56.75 54.51 53.78
16. 269.01 212.83 215.19 180.75 128.25 127.62 110.60 92.88 76.05 64.12 57.64 55.27 54.45
17. 270.51 217.23 217.28 182.55 129.52 128.88 111.78 93.97 77.06 65.07 58.56 56.22 55.44
18. 270.68 221.09 218.50 184.36 130.15 129.51 112.43 94.65 77.78 65.82 59.27 56.82 55.94
19. 267.92 224.15 217.99 186.35 129.87 129.24 112.36 94.81 78.20 66.43 59.93 57.38 56.41
20. 257.15 225.67 213.19 188.72 128.35 127.74 111.28 94.27 78.30 67.13 60.92 58.29 57.18
21. 225.04 223.55 198.43 192.17 125.34 124.73 108.52 92.40 77.96 68.39 63.10 60.61 59.47
22. 191.28 206.53 182.32 197.90 121.33 120.48 100.70 86.31 76.44 71.18 68.20 65.73 63.69
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AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 122.1210 C
CONCRETE THERMOCOUPLE T= 60.85815 C
AVERAGE CONCRETE TEMP. = 65.02956 C
AVERAGE CANISTER TEMP. = 228.3083 C
AVERAGE HEAT SHIELD TEMP. = 186.3481 C
AVERAGE LINER TEMP. = 112.6643 C
AVERAGE INNER GAP TEMP. = 177.8315 C
AVERAGE OUTER GAP TEMP. = 171.8185 C
AVE. CONCRETE EXTERIOR TEMP= 50.62976 C

CONCRETE EXTERIOR H= 2.392972 W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.885280 W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 4.935050 W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000 C
TOTAL MASS FLOW RATE = 5.3293061E-02 kg/sec
INNER AIR VELOCITY = 0.2132407 m/sec
OUTER AIR VELOCITY = 0.2704031 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 206.5265 C
INNER GAP AIR EXIT TEMP. = 197.9003 C
PRESSURE DROP IN INNER GAP= 0.1654573 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.3645533 Velocity Head

KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

123.27 123.52 89.09 73.53 73.41 79.35
79.29 79.23 74.83 71.56 76.03 65.98
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 40.00000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1. 101.33 131.11 114.60 134.35 80.35 79.79 66.40 55.20 46.57 41.84 40.05 40.07 40.41
2. 100.23 128.27 115.67 140.08 83.80 83.38 72.27 60.89 50.61 44.13 41.37 41.07 41.28

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3.	163.74	131.01	137.94	146.33	88.51	88.07	76.55	64.59	53.43	46.04	42.68	42.13	42.25
4.	201.38	136.98	156.42	151.57	93.53	93.06	80.72	67.91	55.91	47.82	44.01	43.25	43.27
5.	219.00	144.02	167.69	155.86	98.26	97.76	84.66	71.05	58.28	49.60	45.42	44.48	44.40
6.	228.65	151.25	175.34	159.59	102.56	102.04	88.29	74.00	60.55	51.38	46.95	45.98	45.95
7.	235.52	158.40	181.54	162.96	106.49	105.95	91.64	76.75	62.71	53.08	48.34	47.18	47.05
8.	241.21	165.34	187.00	166.07	110.11	109.55	94.74	79.33	64.76	54.69	49.63	48.28	48.04
9.	246.41	172.06	192.06	168.96	113.47	112.90	97.65	81.77	66.72	56.26	50.90	49.35	49.00
10.	250.81	178.49	196.57	171.64	116.62	116.03	100.39	84.08	68.62	57.80	52.19	50.48	50.03
11.	254.92	184.63	200.79	174.15	119.56	118.96	102.97	86.28	70.44	59.33	53.55	51.80	51.38
12.	258.76	190.49	204.73	176.49	122.31	121.70	105.38	88.34	72.14	60.72	54.70	52.78	52.25
13.	262.33	196.06	208.40	178.67	124.86	124.24	107.62	90.25	73.70	61.98	55.71	53.61	52.97
14.	265.76	201.49	211.91	180.70	127.22	126.58	109.69	92.02	75.16	63.15	56.64	54.36	53.63
15.	268.88	206.51	215.10	182.64	129.30	128.66	111.54	93.61	76.49	64.23	57.52	55.09	54.26
16.	271.63	211.35	217.99	184.43	131.03	130.39	113.09	94.98	77.67	65.25	58.39	55.83	54.92
17.	273.14	215.81	220.07	186.18	132.29	131.65	114.27	96.07	78.67	66.19	59.30	56.74	55.85
18.	273.33	219.78	221.28	187.94	132.89	132.24	114.90	96.74	79.39	66.93	60.00	57.34	56.35
19.	270.61	223.03	220.76	189.84	132.56	131.92	114.78	96.86	79.78	67.54	60.66	57.90	56.82
20.	259.94	224.89	215.95	192.12	130.96	130.34	113.63	96.25	79.84	68.23	61.66	58.82	57.60
21.	228.16	223.49	201.21	195.32	127.82	127.20	110.72	94.25	79.41	69.47	63.87	61.18	59.93
22.	194.50	208.29	184.92	200.54	123.65	122.77	102.54	87.81	77.67	72.21	69.07	66.43	64.26

AMBIENT TEMPERATURE =	37.77778	C
LINER THERMOCOUPLE T=	124.8591	C
CONCRETE THERMOCOUPLE T=	61.97894	C
AVERAGE CONCRETE TEMP. =	66.17472	C
AVERAGE CANISTER TEMP. =	230.9625	C
AVERAGE HEAT SHIELD TEMP. =	188.9412	C
AVERAGE LINER TEMP. =	115.1570	C
AVERAGE INNER GAP TEMP. =	186.3271	C
AVERAGE OUTER GAP TEMP. =	169.3461	C
AVE. CONCRETE EXTERIOR TEMP=	51.10556	C
CONCRETE EXTERIOR H=	2.400130	W/SQM/C
INNER GAP HEAT TRANSFER COEF=	4.518715	W/SQM/C
OUTER GAP HEAT TRANSFER COEF=	4.678494	W/SQM/C
INNER GAP AIR FLOW FRACTION =	0.6000000	C
TOTAL MASS FLOW RATE =	8.4648184E-02	kg/sec
INNER AIR VELOCITY =	0.2258009	m/sec
OUTER AIR VELOCITY =	0.2863303	m/sec
TOTAL TEMPERATURE RISE =	62.22222	C
INNER GAP AIR EXIT TEMP. =	208.2915	C
INNER GAP AIR EXIT TEMP. =	200.5385	C
PRESSURE DROP IN INNER GAP=	0.1808816	Velocity Head
PRESSURE DROP IN OUTER GAP=	0.3823789	Velocity Head

KK = 3

THE TOTAL HEAT INPUT FROM CANISTER =	20868.36	Watts
THE TOTAL HEAT INPUT FROM SIDE =	2630.646	Watts
THE TOTAL HEAT INPUT FROM LID =	3028.957	Watts
THE TOTAL HEAT INPUT FROM BASE =	126.5690	Watts

THE TEMPERATURES FOR THE CASKLID NODES

CAN...10...11...12...13...20...21...22...30...31...32...41

124.90	123.87	90.07	73.96	73.84	80.08
80.03	79.96	75.81	72.12	76.26	66.36

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 42.00000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	104.24	134.42	116.62	137.64	82.10	81.54	67.83	56.33	47.43	42.49	40.57	40.51	40.81
2.	103.18	131.58	117.75	143.36	85.67	85.24	73.92	62.27	51.67	44.91	41.95	41.55	41.72
3.	166.26	134.15	140.16	149.58	90.50	90.06	78.34	66.11	54.63	46.92	43.32	42.66	42.72
4.	203.70	139.83	158.71	154.78	95.64	95.17	82.63	69.55	57.20	48.76	44.70	43.81	43.77
5.	221.28	146.57	170.04	159.06	100.49	99.99	86.67	72.77	59.63	50.59	46.14	45.06	44.93
6.	230.94	153.55	177.76	162.78	104.89	104.36	90.39	75.79	61.96	52.41	47.68	46.56	46.47
7.	237.85	160.48	184.01	166.14	108.90	108.35	93.81	78.60	64.17	54.13	49.09	47.78	47.57
8.	243.57	167.24	189.52	169.23	112.58	112.02	96.97	81.23	66.25	55.77	50.40	48.88	48.57
9.	248.80	173.81	194.63	172.11	116.01	115.43	99.94	83.71	68.25	57.35	51.67	49.96	49.54
10.	253.23	180.13	199.18	174.77	119.20	118.60	102.72	86.07	70.17	58.91	52.97	51.09	50.57
11.	257.37	186.19	203.43	177.25	122.19	121.58	105.33	88.29	72.01	60.44	54.32	52.39	51.89
12.	261.23	191.98	207.39	179.57	124.97	124.35	107.78	90.38	73.72	61.85	55.48	53.37	52.75

13.	264.81	197.51	211.08	181.72	127.55	126.92	110.04	92.31	75.31	63.12	56.49	54.20	53.47
14.	268.25	202.90	214.60	183.73	129.93	129.29	112.14	94.10	76.77	64.29	57.42	54.96	54.13
15.	271.38	207.91	217.80	185.65	132.02	131.38	113.99	95.70	78.11	65.38	58.30	55.67	54.76
16.	274.14	212.75	220.68	187.41	133.76	133.11	115.55	97.07	79.29	66.40	59.17	56.41	55.41
17.	275.66	217.21	222.76	189.17	135.01	134.36	116.72	98.15	80.29	67.33	60.06	57.28	56.28
18.	275.87	221.20	223.96	190.90	135.58	134.93	117.32	98.80	80.99	68.06	60.75	57.86	56.77
19.	273.18	224.50	223.43	192.73	135.20	134.55	117.16	98.89	81.36	68.66	61.41	58.42	57.23
20.	262.61	226.45	218.62	194.99	133.52	132.89	115.93	98.22	81.38	69.33	62.41	59.35	58.02
21.	231.14	225.26	203.91	198.10	130.24	129.62	112.88	96.08	80.85	70.55	64.65	61.75	60.39
22.	197.59	210.62	187.46	203.14	125.91	125.02	104.36	89.29	78.88	73.23	69.93	67.13	64.83

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          127.5486      C
CONCRETE THERMOCOUPLE T=        63.11621      C
AVERAGE CONCRETE TEMP. =        67.32240      C
AVERAGE CANISTER TEMP. =        233.5114      C
AVERAGE HEAT SHIELD TEMP. =     191.4741      C
AVERAGE LINER TEMP. =          117.6001      C
AVERAGE INNER GAP TEMP. =       186.9462      C
AVERAGE OUTER GAP TEMP. =       173.1402      C
AVE. CONCRETE EXTERIOR TEMP=     51.59266      C

CONCRETE EXTERIOR H=             2.407835      W/SQM/C
INNER GAP HEAT TRANSFER COEF=    4.557674      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=    4.703277      W/SQM/C
INNER GAP AIR FLOW FRACTION =    0.6000000      C
TOTAL MASS FLOW RATE =          8.6409539E-02  kg/sec
INNER AIR VELOCITY =            0.2364134      m/sec
OUTER AIR VELOCITY =            0.2997876      m/sec
TOTAL TEMPERATURE RISE =        62.22222      C
INNER GAP AIR EXIT TEMP. =       210.6216      C
INNER GAP AIR EXIT TEMP. =       203.1443      C
PRESSURE DROP IN INNER GAP=     0.1898197      Velocity Head
PRESSURE DROP IN OUTER GAP=     0.4062178      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =        2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =          3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =         126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

126.51 125.44 91.02 74.37 74.25 80.80
80.74 80.68 76.78 72.66 76.49 66.73
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS:    44.00000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

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1.	107.06	131.63	118.96	134.79	83.84	83.25	69.24	57.45	48.29	43.15	41.10	40.96	41.22
2.	106.04	128.95	120.12	140.95	87.51	87.07	75.54	63.64	52.74	45.70	42.54	42.04	42.17
3.	168.69	132.84	142.59	147.79	92.47	92.01	80.11	67.63	55.82	47.80	43.97	43.19	43.21
4.	205.93	140.31	161.13	153.47	97.73	97.24	84.51	71.17	58.49	49.71	45.39	44.38	44.29
5.	223.48	148.81	172.45	158.09	102.68	102.17	88.65	74.48	60.99	51.59	46.87	45.65	45.47
6.	233.15	157.34	180.16	162.06	107.18	106.64	92.46	77.57	63.38	53.44	48.43	47.16	47.00
7.	240.08	165.57	186.42	165.64	111.26	110.71	95.95	80.44	65.63	55.20	49.85	48.39	48.12
8.	245.84	173.42	191.93	168.93	115.02	114.44	99.18	83.12	67.75	56.86	51.18	49.50	49.12
9.	251.10	180.86	197.05	171.97	118.50	117.91	102.19	85.65	69.77	58.46	52.47	50.59	50.10
10.	255.55	187.87	201.60	174.78	121.74	121.14	105.02	88.03	71.72	60.04	53.77	51.72	51.12
11.	259.71	194.46	205.86	177.39	124.77	124.15	107.67	90.29	73.58	61.58	55.12	53.00	52.41
12.	263.59	200.66	209.83	179.81	127.59	126.96	110.14	92.40	75.31	62.99	56.28	53.98	53.27
13.	267.19	206.47	213.52	182.04	130.19	129.56	112.43	94.35	76.91	64.27	57.29	54.80	53.99
14.	270.64	212.05	217.04	184.11	132.59	131.94	114.54	96.16	78.39	65.45	58.23	55.56	54.65
15.	273.78	217.15	220.25	186.06	134.70	134.04	116.41	97.77	79.73	66.54	59.11	56.28	55.27
16.	276.55	222.02	223.13	187.83	136.44	135.78	117.97	99.14	80.92	67.56	59.96	57.00	55.91
17.	278.07	226.41	225.21	189.53	137.68	137.01	119.13	100.21	81.91	68.48	60.83	57.83	56.71
18.	278.30	230.25	226.40	191.25	138.22	137.56	119.71	100.85	82.60	69.20	61.51	58.40	57.19
19.	275.64	233.27	225.87	193.16	137.79	137.13	119.50	100.90	82.95	69.78	62.17	58.96	57.66
20.	265.17	234.68	221.08	195.49	136.02	135.38	118.19	100.16	82.92	70.45	63.17	59.90	58.45
21.	234.00	232.37	206.43	198.94	132.62	131.99	115.00	97.88	82.29	71.63	65.44	62.33	60.86
22.	200.54	213.97	189.94	204.86	128.13	127.22	106.14	90.75	80.09	74.25	70.79	67.82	65.40

AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 130.1938 C
CONCRETE THERMOCOUPLE T= 64.26770 C
AVERAGE CONCRETE TEMP. = 68.47121 C
AVERAGE CANISTER TEMP. = 235.9599 C
AVERAGE HEAT SHIELD TEMP. = 193.9198 C
AVERAGE LINER TEMP. = 120.0014 C
AVERAGE INNER GAP TEMP. = 186.1208 C
AVERAGE OUTER GAP TEMP. = 178.5992 C
AVE. CONCRETE EXTERIOR TEMP= 52.08998 C

CONCRETE EXTERIOR H= 2.415931 W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.905274 W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 4.965679 W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000 C
TOTAL MASS FLOW RATE = 5.0508518E-02 kg/sec
INNER AIR VELOCITY = 0.2020989 m/sec
OUTER AIR VELOCITY = 0.2562746 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 213.9747 C
INNER GAP AIR EXIT TEMP. = 204.8629 C
PRESSURE DROP IN INNER GAP= 0.1617703 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.3545358 Velocity Head

KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

128.11 128.05 91.95 74.78 74.66 81.51
81.45 81.38 77.74 73.20 76.71 67.08

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 46.00000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1.	109.80	139.88	120.88	143.05	85.56	84.97	70.63	58.56	49.15	43.82	41.63	41.42	41.64
2.	108.83	137.07	122.10	148.80	89.33	88.88	77.15	64.99	53.81	46.49	43.14	42.54	42.62
3.	171.05	139.46	144.71	155.00	94.41	93.95	81.86	69.13	57.02	48.69	44.64	43.74	43.71
4.	208.10	144.86	163.31	160.19	99.79	99.30	86.38	72.78	59.77	50.67	46.11	44.96	44.82
5.	225.60	151.32	174.69	164.47	104.85	104.34	90.62	76.18	62.35	52.60	47.61	46.26	46.02
6.	235.29	158.04	182.47	168.19	109.44	108.89	94.50	79.34	64.79	54.49	49.20	47.78	47.55
7.	242.25	164.75	188.77	171.55	113.60	113.04	98.06	82.27	67.09	56.27	50.64	49.01	48.67
8.	248.02	171.34	194.33	174.64	117.42	116.84	101.35	85.00	69.25	57.96	51.98	50.14	49.68
9.	253.31	177.76	199.48	177.50	120.95	120.36	104.41	87.56	71.30	59.58	53.28	51.23	50.66
10.	257.78	183.96	204.06	180.15	124.24	123.63	107.28	89.99	73.27	61.17	54.59	52.36	51.68
11.	261.97	189.93	208.34	182.61	127.31	126.68	109.97	92.27	75.15	62.72	55.93	53.62	52.94
12.	265.86	195.66	212.33	184.90	130.16	129.52	112.47	94.41	76.91	64.14	57.09	54.59	53.79
13.	269.47	201.14	216.04	187.02	132.79	132.14	114.79	96.38	78.52	65.43	58.11	55.42	54.52
14.	272.93	206.50	219.56	188.99	135.20	134.55	116.92	98.20	80.01	66.62	59.04	56.18	55.17
15.	276.08	211.49	222.76	190.86	137.32	136.66	118.79	99.82	81.36	67.72	59.92	56.90	55.80
16.	278.84	216.32	225.64	192.57	139.06	138.39	120.36	101.19	82.54	68.72	60.77	57.61	56.42
17.	280.38	220.79	227.71	194.25	140.29	139.62	121.50	102.26	83.52	69.63	61.61	58.39	57.16
18.	280.61	224.80	228.89	195.93	140.80	140.13	122.06	102.87	84.20	70.34	62.28	58.94	57.62
19.	277.98	228.14	228.34	197.71	140.31	139.65	121.81	102.89	84.52	70.92	62.93	59.50	58.08
20.	267.59	230.19	223.54	199.90	138.46	137.82	120.42	102.08	84.45	71.56	63.95	60.44	58.89
21.	236.71	229.23	208.89	202.90	134.94	134.30	117.08	99.66	83.72	72.71	66.23	62.91	61.32
22.	203.36	215.00	192.25	207.77	130.29	129.36	107.89	92.19	81.28	75.27	71.64	68.51	65.96

AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 132.7865 C
CONCRETE THERMOCOUPLE T= 65.43143 C
AVERAGE CONCRETE TEMP. = 69.62038 C
AVERAGE CANISTER TEMP. = 238.3120 C
AVERAGE HEAT SHIELD TEMP. = 196.2776 C
AVERAGE LINER TEMP. = 122.3619 C
AVERAGE INNER GAP TEMP. = 191.0557 C

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AVERAGE OUTER GAP TEMP. =      178.4129      C
AVE. CONCRETE EXTERIOR TEMP=      52.59634      C

CONCRETE EXTERIOR H=      2.422714      W/SQM/C
INNER GAP HEAT TRANSFER COEF=      4.544455      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=      4.706618      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =      7.1922891E-02      kg/sec
INNER AIR VELOCITY =      0.2448562      m/sec
OUTER AIR VELOCITY =      0.3104936      m/sec
TOTAL TEMPERATURE RISE =      62.22222      C
INNER GAP AIR EXIT TEMP. =      215.0004      C
INNER GAP AIR EXIT TEMP. =      207.7694      C
PRESSURE DROP IN INNER GAP=      0.1996148      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.4292412      Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =      20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =      3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =      126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

129.70 128.22 92.85 75.18 75.05 82.20
82.14 82.07 78.69 73.73 76.92 67.45
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS:      48.00000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1.	112.47	145.28	122.89	148.43	87.26	86.65	72.02	59.68	50.02	44.49	42.18	41.89	42.06
2.	111.55	142.45	124.16	153.94	91.13	90.68	78.76	66.34	54.87	47.30	43.76	43.06	43.09
3.	173.35	144.27	146.87	159.82	96.33	95.86	83.60	70.62	58.22	49.59	45.31	44.30	44.21
4.	210.20	148.79	165.51	164.77	101.83	101.33	88.23	74.38	61.06	51.64	46.83	45.56	45.36
5.	227.66	154.35	176.92	168.88	106.99	106.47	92.56	77.86	63.71	53.62	48.37	46.89	46.58
6.	237.35	160.24	184.72	172.46	111.66	111.11	96.53	81.09	66.20	55.55	49.98	48.40	48.10
7.	244.33	166.21	191.06	175.69	115.89	115.33	100.15	84.08	68.54	57.36	51.43	49.65	49.23
8.	250.13	172.15	196.64	178.66	119.77	119.19	103.50	86.86	70.74	59.07	52.79	50.79	50.25
9.	255.43	178.02	201.81	181.41	123.36	122.76	106.61	89.47	72.83	60.72	54.10	51.89	51.24
10.	259.93	183.74	206.41	183.95	126.70	126.08	109.52	91.92	74.83	62.32	55.42	53.01	52.26
11.	264.13	189.32	210.70	186.31	129.80	129.17	112.24	94.24	76.73	63.88	56.75	54.25	53.48
12.	268.04	194.72	214.69	188.50	132.68	132.04	114.77	96.40	78.50	65.31	57.91	55.22	54.33
13.	271.66	199.93	218.40	190.52	135.33	134.68	117.11	98.39	80.12	66.61	58.94	56.05	55.05
14.	275.13	205.08	221.93	192.40	137.77	137.11	119.25	100.22	81.62	67.80	59.88	56.81	55.71
15.	278.28	209.91	225.13	194.18	139.89	139.22	121.14	101.85	82.98	68.90	60.75	57.52	56.33
16.	281.05	214.63	228.00	195.80	141.63	140.96	122.70	103.22	84.16	69.90	61.59	58.22	56.94
17.	282.59	219.03	230.05	197.38	142.84	142.17	123.84	104.28	85.13	70.80	62.41	58.95	57.61
18.	282.83	223.04	231.22	198.95	143.33	142.65	124.37	104.87	85.79	71.50	63.07	59.50	58.06
19.	280.22	226.45	230.66	200.61	142.79	142.13	124.07	104.85	86.09	72.06	63.71	60.05	58.52
20.	269.92	228.71	225.85	202.58	140.86	140.21	122.61	103.97	85.97	72.68	64.72	61.00	59.33
21.	239.30	228.29	211.24	205.27	137.21	136.57	119.13	101.42	85.13	73.79	67.02	63.50	61.79
22.	206.07	215.93	194.50	209.58	132.41	131.47	109.61	93.61	82.47	76.27	72.49	69.20	66.51

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AMBIENT TEMPERATURE =      37.77778      C
LINER THERMOCOUPLE T=      135.3335      C
CONCRETE THERMOCOUPLE T=      66.60538      C
AVERAGE CONCRETE TEMP. =      70.76871      C
AVERAGE CANISTER TEMP. =      240.5750      C
AVERAGE HEAT SHIELD TEMP. =      198.5637      C
AVERAGE LINER TEMP. =      124.6798      C
AVERAGE INNER GAP TEMP. =      191.6543      C
AVERAGE OUTER GAP TEMP. =      182.2634      C
AVE. CONCRETE EXTERIOR TEMP=      53.11063      C

CONCRETE EXTERIOR H=      2.430144      W/SQM/C
INNER GAP HEAT TRANSFER COEF=      4.485229      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=      4.682441      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =      6.8872392E-02      kg/sec
INNER AIR VELOCITY =      0.2755780      m/sec
OUTER AIR VELOCITY =      0.3494509      m/sec

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TOTAL TEMPERATURE RISE =      62.22222      C
INNER GAP AIR EXIT TEMP. =      215.9270      C
INNER GAP AIR EXIT TEMP. =      209.5849      C
PRESSURE DROP IN INNER GAP=      0.2251567      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.4901561      Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =      20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =      3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =      126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

131.26 129.23 93.74 75.57 75.43 82.88
82.82 82.75 79.63 74.26 77.14 67.82
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS:      50.00000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1. 115.04 141.09 124.87 144.18 88.92 88.30 73.39 60.78 50.88 45.18 42.73 42.36 42.49
2. 114.17 138.42 126.18 150.27 92.88 92.43 80.33 67.68 55.94 48.11 44.38 43.58 43.56
3. 175.55 141.44 148.96 156.91 98.20 97.73 85.30 72.10 59.41 50.50 46.00 44.87 44.73
4. 212.22 147.73 167.61 162.44 103.82 103.32 90.05 75.96 62.35 52.62 47.57 46.17 45.91
5. 229.64 155.07 179.04 166.98 109.08 108.55 94.48 79.53 65.06 54.65 49.14 47.52 47.15
6. 239.35 162.60 186.87 170.90 113.84 113.29 98.52 82.83 67.62 56.61 50.77 49.04 48.67
7. 246.35 170.02 193.23 174.43 118.15 117.58 102.22 85.88 70.00 58.46 52.24 50.30 49.81
8. 252.17 177.21 198.84 177.66 122.09 121.50 105.62 88.71 72.24 60.20 53.62 51.45 50.84
9. 257.49 184.15 204.03 180.64 125.73 125.13 108.78 91.35 74.36 61.86 54.94 52.55 51.83
10. 262.01 190.77 208.65 183.39 129.11 128.49 111.73 93.84 76.38 63.48 56.26 53.68 52.84
11. 266.23 197.09 212.95 185.93 132.25 131.61 114.48 96.19 78.30 65.05 57.59 54.90 54.03
12. 270.15 203.10 216.96 188.27 135.16 134.51 117.04 98.37 80.08 66.48 58.75 55.87 54.87
13. 273.78 208.80 220.68 190.44 137.83 137.18 119.39 100.37 81.72 67.79 59.78 56.70 55.60
14. 277.26 214.32 224.21 192.43 140.28 139.62 121.55 102.22 83.23 68.99 60.72 57.45 56.25
15. 280.41 219.42 227.41 194.31 142.41 141.74 123.45 103.85 84.59 70.09 61.59 58.16 56.87
16. 283.18 224.33 230.28 196.01 144.15 143.47 125.01 105.23 85.78 71.09 62.42 58.85 57.47
17. 284.72 228.82 232.33 197.66 145.35 144.67 126.13 106.28 86.74 71.97 63.21 59.53 58.07
18. 284.97 232.80 233.49 199.31 145.80 145.12 126.64 106.85 87.38 72.65 63.86 60.06 58.50
19. 282.38 236.04 232.91 201.10 145.21 144.54 126.29 106.79 87.65 73.20 64.50 60.60 58.96
20. 272.15 237.86 228.11 203.30 143.20 142.54 124.75 105.84 87.48 73.80 65.50 61.56 59.77
21. 241.79 236.41 213.55 206.48 139.43 138.78 121.13 103.15 86.54 74.87 67.81 64.08 62.25
22. 208.66 219.97 196.74 211.83 134.48 133.52 111.30 95.01 83.64 77.27 73.34 69.88 67.06
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AMBIENT TEMPERATURE =      37.77778      C
LINER THERMOCOUPLE T=      137.8335      C
CONCRETE THERMOCOUPLE T=      67.78781      C
AVERAGE CONCRETE TEMP. =      71.91454      C
AVERAGE CANISTER TEMP. =      242.7596      C
AVERAGE HEAT SHIELD TEMP. =      200.7664      C
AVERAGE LINER TEMP. =      126.9527      C
AVERAGE INNER GAP TEMP. =      198.6210      C
AVERAGE OUTER GAP TEMP. =      180.5589      C
AVE. CONCRETE EXTERIOR TEMP=      53.63183      C

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CONCRETE EXTERIOR H=      2.436599      W/SQM/C
INNER GAP HEAT TRANSFER COEF=      4.528329      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=      4.710553      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =      8.1136197E-02      kg/sec
INNER AIR VELOCITY =      0.2164326      m/sec
OUTER AIR VELOCITY =      0.2744507      m/sec
TOTAL TEMPERATURE RISE =      62.22222      C
INNER GAP AIR EXIT TEMP. =      219.9664      C
INNER GAP AIR EXIT TEMP. =      211.8269      C
PRESSURE DROP IN INNER GAP=      0.1814026      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.3824985      Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =      20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =      3028.957      Watts

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THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

132.81 131.07 94.60 75.94 75.81 83.55
83.49 83.42 80.55 74.77 77.35 68.14

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 54.00000

THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	119.96	142.26	128.67	145.30	92.18	91.54	76.09	62.97	52.62	46.56	43.86	43.33	43.36
2.	119.19	139.72	130.08	151.72	96.33	95.86	83.42	70.33	58.07	49.74	45.64	44.63	44.52
3.	179.77	143.59	153.00	158.79	101.88	101.40	88.66	75.03	61.79	52.32	47.40	46.03	45.78
4.	216.08	150.97	171.69	164.67	107.72	107.21	93.62	79.10	64.92	54.59	49.07	47.41	47.03
5.	233.43	159.39	183.17	169.46	113.18	112.64	98.24	82.83	67.77	56.72	50.72	48.81	48.31
6.	243.15	167.86	191.05	173.56	118.11	117.54	102.44	86.27	70.43	58.77	52.38	50.35	49.83
7.	250.19	176.07	197.46	177.25	122.56	121.97	106.26	89.43	72.91	60.67	53.90	51.63	50.98
8.	256.06	183.91	203.11	180.61	126.62	126.01	109.77	92.35	75.22	62.46	55.30	52.80	52.03
9.	261.42	191.38	208.34	183.70	130.36	129.74	113.02	95.07	77.40	64.17	56.65	53.92	53.03
10.	265.97	198.41	212.98	186.54	133.81	133.18	116.05	97.63	79.47	65.82	57.98	55.04	54.04
11.	270.21	205.04	217.31	189.14	137.02	136.37	118.86	100.03	81.43	67.40	59.30	56.22	55.15
12.	274.16	211.28	221.33	191.53	139.98	139.32	121.47	102.25	83.24	68.85	60.46	57.18	55.99
13.	277.80	217.14	225.05	193.72	142.70	142.03	123.87	104.29	84.91	70.17	61.49	58.01	56.71
14.	281.29	222.76	228.58	195.72	145.17	144.49	126.05	106.16	86.44	71.38	62.44	58.76	57.36
15.	284.44	227.90	231.77	197.58	147.31	146.63	127.96	107.81	87.81	72.48	63.31	59.46	57.97
16.	287.21	232.80	234.62	199.25	149.04	148.35	129.51	109.18	88.98	73.47	64.11	60.12	58.54
17.	288.75	237.22	236.64	200.84	150.20	149.51	130.61	110.20	89.92	74.32	64.84	60.70	58.99
18.	289.00	241.08	237.77	202.43	150.59	149.90	131.06	110.72	90.53	74.97	65.46	61.19	59.40
19.	286.45	244.12	237.17	204.18	149.89	149.21	130.62	110.59	90.74	75.48	66.08	61.73	59.84
20.	276.35	245.59	232.36	206.39	147.71	147.05	128.92	109.50	90.46	76.03	67.08	62.68	60.65
21.	246.45	243.44	217.85	209.72	143.71	143.05	125.02	106.54	89.31	77.01	69.39	65.24	63.17
22.	213.51	224.64	200.88	215.54	138.47	137.48	114.57	97.74	85.94	79.24	75.00	71.22	68.14

AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 142.6979 C
CONCRETE THERMOCOUPLE T= 70.17111 C
AVERAGE CONCRETE TEMP. = 74.19588 C
AVERAGE CANISTER TEMP. = 246.9071 C
AVERAGE HEAT SHIELD TEMP. = 205.0147 C
AVERAGE LINER TEMP. = 131.3712 C
AVERAGE INNER GAP TEMP. = 196.5541 C
AVERAGE OUTER GAP TEMP. = 189.9570 C
AVE. CONCRETE EXTERIOR TEMP= 54.69077 C

CONCRETE EXTERIOR H= 2.450696 W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.904526 W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 4.981185 W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000 C
TOTAL MASS FLOW RATE = 5.0752800E-02 kg/sec
INNER AIR VELOCITY = 0.2030764 m/sec
OUTER AIR VELOCITY = 0.2575141 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 224.6404 C
INNER GAP AIR EXIT TEMP. = 215.5370 C
PRESSURE DROP IN INNER GAP= 0.1689304 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.3717040 Velocity Head

KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

135.84 134.81 96.27 76.67 76.53 84.85
84.78 84.71 82.37 75.78 77.77 68.81

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 58.00000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1.	124.58	147.89	132.20	150.94	95.35	94.69	78.72	65.14	54.36	47.95	45.01	44.32	44.25
2.	123.92	145.31	133.70	157.31	99.68	99.20	86.44	72.94	60.18	51.40	46.94	45.72	45.50
3.	183.73	148.69	156.77	164.26	105.45	104.97	91.94	77.90	64.16	54.17	48.82	47.22	46.85
4.	219.72	155.39	175.52	170.04	111.51	110.99	97.11	82.17	67.47	56.58	50.60	48.68	48.17
5.	237.00	163.16	187.06	174.77	117.16	116.61	101.90	86.08	70.46	58.81	52.32	50.14	49.50
6.	246.74	171.07	195.01	178.84	122.24	121.67	106.25	89.65	73.23	60.94	54.03	51.68	51.01
7.	253.81	178.82	201.48	182.49	126.82	126.23	110.20	92.91	75.80	62.91	55.59	52.99	52.18
8.	259.72	186.30	207.18	185.81	131.00	130.38	113.82	95.93	78.18	64.75	57.02	54.18	53.25
9.	265.11	193.48	212.45	188.86	134.83	134.20	117.15	98.73	80.42	66.49	58.40	55.32	54.26
10.	269.69	200.31	217.12	191.64	138.36	137.72	120.25	101.34	82.54	68.17	59.73	56.44	55.26
11.	273.96	206.79	221.47	194.21	141.63	140.97	123.12	103.79	84.53	69.77	61.04	57.57	56.30
12.	277.92	212.92	225.51	196.55	144.64	143.97	125.78	106.05	86.38	71.24	62.20	58.51	57.12
13.	281.58	218.71	229.24	198.69	147.39	146.71	128.20	108.12	88.07	72.57	63.24	59.34	57.84
14.	285.07	224.31	232.77	200.65	149.88	149.19	130.41	110.01	89.61	73.79	64.18	60.10	58.49
15.	288.22	229.45	235.94	202.46	152.02	151.33	132.32	111.67	90.98	74.89	65.05	60.79	59.09
16.	290.98	234.36	238.77	204.09	153.73	153.03	133.87	113.03	92.15	75.86	65.83	61.41	59.63
17.	292.51	238.83	240.77	205.64	154.86	154.16	134.93	114.02	93.06	76.67	66.50	61.88	59.93
18.	292.77	242.76	241.86	207.20	155.18	154.48	135.32	114.50	93.63	77.29	67.07	62.34	60.31
19.	290.23	245.92	241.21	208.91	154.37	153.68	134.78	114.28	93.78	77.76	67.67	62.86	60.74
20.	280.24	247.60	236.38	211.03	152.03	151.36	132.92	113.05	93.39	78.25	68.65	63.80	61.54
21.	250.75	245.90	221.90	214.23	147.80	147.13	128.76	109.81	92.02	79.13	70.96	66.39	64.08
22.	217.97	228.27	204.75	219.73	142.28	141.27	117.71	100.38	88.18	81.17	76.64	72.53	69.20

AMBIENT TEMPERATURE =	37.77778	C
LINER THERMOCOUPLE T=	147.3872	C
CONCRETE THERMOCOUPLE T=	72.56857	C
AVERAGE CONCRETE TEMP. =	76.45757	C
AVERAGE CANISTER TEMP. =	250.7874	C
AVERAGE HEAT SHIELD TEMP. =	209.0200	C
AVERAGE LINER TEMP. =	135.6335	C
AVERAGE INNER GAP TEMP. =	201.3546	C
AVERAGE OUTER GAP TEMP. =	193.2359	C
AVE. CONCRETE EXTERIOR TEMP=	55.76563	C

CONCRETE EXTERIOR H=	2.463286	W/SQM/C
INNER GAP HEAT TRANSFER COEF=	4.786912	W/SQM/C
OUTER GAP HEAT TRANSFER COEF=	4.906456	W/SQM/C
INNER GAP AIR FLOW FRACTION =	0.6000000	C
TOTAL MASS FLOW RATE =	5.3665914E-02	kg/sec
INNER AIR VELOCITY =	0.2147325	m/sec
OUTER AIR VELOCITY =	0.2722948	m/sec
TOTAL TEMPERATURE RISE =	62.22222	C
INNER GAP AIR EXIT TEMP. =	228.2700	C
INNER GAP AIR EXIT TEMP. =	219.7257	C
PRESSURE DROP IN INNER GAP=	0.1817719	Velocity Head
PRESSURE DROP IN OUTER GAP=	0.3978190	Velocity Head

KK = 3

THE TOTAL HEAT INPUT FROM CANISTER =	20868.36	Watts
THE TOTAL HEAT INPUT FROM SIDE =	2630.646	Watts
THE TOTAL HEAT INPUT FROM LID =	3028.957	Watts
THE TOTAL HEAT INPUT FROM BASE =	126.5690	Watts

THE TEMPERATURES FOR THE CASKLID NODES

CAN...10...11...12...13...20...21...22...30...31...32...41

138.78	136.96	97.86	77.36	77.21	86.09
86.03	85.95	84.14	76.76	78.17	69.46

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 62.00000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1.	128.92	150.02	135.50	152.95	98.42	97.75	81.30	67.27	56.09	49.36	46.18	45.32	45.16
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2.	128.37	147.58	137.11	159.54	102.93	102.45	89.39	75.50	62.29	53.06	48.25	46.82	46.49
3.	187.47	151.30	160.30	166.79	108.92	108.42	95.13	80.72	66.51	56.02	50.27	48.42	47.93
4.	223.15	158.44	179.13	172.81	115.18	114.65	100.51	85.20	70.00	58.58	52.15	49.97	49.33
5.	240.37	166.63	190.75	177.69	121.01	120.46	105.48	89.26	73.13	60.92	53.95	51.48	50.71
6.	250.13	174.92	198.78	181.89	126.25	125.67	109.97	92.96	76.01	63.12	55.71	53.04	52.21
7.	257.24	182.99	205.32	185.64	130.96	130.36	114.04	96.33	78.66	65.15	57.30	54.37	53.40
8.	263.18	190.74	211.07	189.04	135.24	134.62	117.75	99.43	81.12	67.05	58.77	55.59	54.48
9.	268.60	198.15	216.38	192.14	139.16	138.52	121.17	102.31	83.42	68.83	60.17	56.74	55.51
10.	273.21	205.15	221.09	194.96	142.76	142.11	124.33	104.98	85.58	70.53	61.51	57.86	56.50
11.	277.50	211.77	225.46	197.54	146.08	145.42	127.26	107.47	87.60	72.14	62.80	58.93	57.46
12.	281.48	218.01	229.51	199.88	149.13	148.46	129.95	109.77	89.48	73.63	63.96	59.87	58.27
13.	285.14	223.88	233.24	202.00	151.91	151.23	132.41	111.87	91.19	74.97	65.00	60.70	58.99
14.	288.63	229.52	236.76	203.91	154.42	153.72	134.64	113.78	92.75	76.20	65.95	61.46	59.64
15.	291.77	234.68	239.92	205.66	156.56	155.86	136.55	115.43	94.12	77.29	66.81	62.13	60.22
16.	294.52	239.60	242.72	207.21	158.25	157.54	138.08	116.79	95.27	78.24	67.56	62.72	60.72
17.	296.05	244.05	244.67	208.66	159.33	158.63	139.10	117.74	96.15	79.02	68.16	63.08	60.88
18.	296.29	247.93	245.72	210.10	159.58	158.87	139.43	118.16	96.67	79.60	68.70	63.50	61.22
19.	293.76	251.01	245.02	211.73	158.67	157.97	138.79	117.85	96.75	80.02	69.27	63.99	61.63
20.	283.86	252.56	240.14	213.76	156.16	155.48	136.78	116.48	96.25	80.44	70.21	64.92	62.41
21.	254.73	250.63	225.67	216.94	151.71	151.03	132.35	112.97	94.66	81.20	72.51	67.52	64.98
22.	222.08	231.61	208.31	222.60	145.92	144.88	120.72	102.93	90.36	83.05	78.23	73.81	70.22

AMBIENT TEMPERATURE = 37.77778 C
 LINER THERMOCOUPLE T= 151.9109 C
 CONCRETE THERMOCOUPLE T= 74.96921 C
 AVERAGE CONCRETE TEMP. = 78.69370 C
 AVERAGE CANISTER TEMP. = 254.4336 C
 AVERAGE HEAT SHIELD TEMP. = 212.8016 C
 AVERAGE LINER TEMP. = 139.7459 C
 AVERAGE INNER GAP TEMP. = 211.9475 C
 AVERAGE OUTER GAP TEMP. = 191.4088 C
 AVE. CONCRETE EXTERIOR TEMP= 56.84958 C

CONCRETE EXTERIOR H= 2.474561 W/SQM/C
 INNER GAP HEAT TRANSFER COEF= 4.560424 W/SQM/C
 OUTER GAP HEAT TRANSFER COEF= 4.749511 W/SQM/C
 INNER GAP AIR FLOW FRACTION = 0.6000000 C
 TOTAL MASS FLOW RATE = 7.2807856E-02 kg/sec
 INNER AIR VELOCITY = 0.1942166 m/sec
 OUTER AIR VELOCITY = 0.2462793 m/sec
 TOTAL TEMPERATURE RISE = 62.22222 C
 INNER GAP AIR EXIT TEMP. = 231.6075 C
 INNER GAP AIR EXIT TEMP. = 222.6044 C
 PRESSURE DROP IN INNER GAP= 0.1707678 Velocity Head
 PRESSURE DROP IN OUTER GAP= 0.3573985 Velocity Head

KK = 3
 THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
 THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
 THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
 THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES
 CAN...10...11...12...13...20...21...22...30...31...32...41

141.62	138.67	99.39	78.02	77.86	87.29
87.23	87.15	85.85	77.70	78.55	70.07

THE CASE FOR QTOTAL = 20000.0 Watts

 THE TIME IS: 66.00000

 THE TEMPERATURES FOR THE SIDE NODES
 CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	133.02	158.42	138.85	161.46	101.43	100.74	83.83	69.38	57.82	50.79	47.36	46.34	46.07
2.	132.58	155.81	140.55	167.73	106.11	105.61	92.27	78.02	64.37	54.72	49.58	47.93	47.49
3.	191.00	158.38	163.83	174.44	112.30	111.79	98.25	83.50	68.84	57.87	51.73	49.64	49.03
4.	226.41	163.97	182.69	180.04	118.75	118.22	103.83	88.16	72.51	60.57	53.72	51.27	50.51
5.	243.58	170.62	194.34	184.65	124.76	124.20	108.96	92.38	75.78	63.03	55.60	52.84	51.93
6.	253.35	177.55	202.41	188.62	130.14	129.55	113.59	96.21	78.76	65.30	57.40	54.42	53.41
7.	260.49	184.48	208.98	192.17	134.97	134.36	117.78	99.68	81.50	67.40	59.03	55.77	54.63
8.	266.46	191.27	214.77	195.39	139.35	138.72	121.59	102.87	84.03	69.34	60.54	57.01	55.73
9.	271.91	197.89	220.10	198.32	143.35	142.71	125.08	105.81	86.38	71.17	61.95	58.18	56.77
10.	276.54	204.27	224.82	200.99	147.02	146.36	128.31	108.54	88.58	72.89	63.31	59.29	57.76
11.	280.85	210.40	229.20	203.43	150.39	149.72	131.28	111.07	90.64	74.52	64.58	60.31	58.63

12.	284.83	216.28	233.25	205.66	153.48	152.80	134.01	113.41	92.54	76.01	65.74	61.24	59.43
13.	288.50	221.88	236.98	207.67	156.28	155.59	136.49	115.53	94.26	77.36	66.78	62.07	60.14
14.	291.99	227.35	240.49	209.50	158.80	158.09	138.73	117.45	95.84	78.60	67.73	62.82	60.79
15.	295.13	232.41	243.62	211.19	160.93	160.22	140.64	119.11	97.21	79.69	68.57	63.49	61.36
16.	297.86	237.29	246.39	212.69	162.60	161.88	142.15	120.44	98.34	80.62	69.29	64.03	61.83
17.	299.37	241.78	248.32	214.15	163.63	162.92	143.13	121.36	99.19	81.34	69.82	64.28	61.83
18.	299.60	245.78	249.32	215.57	163.80	163.09	143.39	121.72	99.66	81.88	70.32	64.66	62.13
19.	297.08	249.08	248.57	217.10	162.78	162.08	142.65	121.32	99.66	82.25	70.85	65.12	62.51
20.	287.24	251.07	243.65	219.07	160.12	159.43	140.48	119.80	99.04	82.60	71.77	66.03	63.28
21.	258.42	250.08	229.19	221.95	155.44	154.76	135.79	116.03	97.23	83.24	74.03	68.63	65.85
22.	225.89	234.41	211.70	226.84	149.40	148.33	123.61	105.39	92.47	84.88	79.78	75.05	71.21

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          156.2788      C
CONCRETE THERMOCOUPLE T=        77.36359      C
AVERAGE CONCRETE TEMP. =          80.89973      C
AVERAGE CANISTER TEMP. =          257.8726      C
AVERAGE HEAT SHIELD TEMP. =      216.4207      C
AVERAGE LINER TEMP. =           143.7133      C
AVERAGE INNER GAP TEMP. =          211.2461      C
AVERAGE OUTER GAP TEMP. =          198.4117      C
AVE. CONCRETE EXTERIOR TEMP=        57.93663      C

CONCRETE EXTERIOR H=              2.486416      W/SQM/C
INNER GAP HEAT TRANSFER COEF=      4.552830      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=      4.759116      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =      6.0460061E-02      kg/sec
INNER AIR VELOCITY =              0.2356085      m/sec
OUTER AIR VELOCITY =              0.2987669      m/sec
TOTAL TEMPERATURE RISE =           62.22222      C
INNER GAP AIR EXIT TEMP. =          234.4111      C
INNER GAP AIR EXIT TEMP. =          226.8444      C
PRESSURE DROP IN INNER GAP=        0.2066467      Velocity Head
PRESSURE DROP IN OUTER GAP=        0.4448358      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =        3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =       126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

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144.36	140.85	100.85	78.64	78.48	88.44
88.38	88.30	87.52	78.62	78.93	70.70

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THE CASE FOR QTOTAL = 20000.0 Watts
*****
THE TIME IS:    70.00000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1.	136.94	150.03	142.25	152.46	104.40	103.69	86.31	71.46	59.54	52.21	48.56	47.37	47.00
2.	136.61	148.21	144.01	159.82	109.24	108.73	95.10	80.49	66.44	56.39	50.91	49.05	48.50
3.	194.39	154.38	167.30	168.20	115.62	115.11	101.30	86.22	71.15	59.73	53.20	50.86	50.13
4.	229.53	164.59	186.12	175.10	122.26	121.72	107.07	91.08	74.99	62.57	55.30	52.58	51.68
5.	246.64	175.58	197.78	180.62	128.42	127.85	112.37	95.44	78.39	65.13	57.25	54.21	53.16
6.	256.42	186.18	205.86	185.30	133.94	133.34	117.13	99.39	81.48	67.48	59.10	55.80	54.63
7.	263.58	196.05	212.46	189.43	138.88	138.26	121.42	102.97	84.30	69.64	60.77	57.18	55.86
8.	269.57	205.15	218.27	193.15	143.35	142.71	125.32	106.24	86.90	71.64	62.31	58.44	56.98
9.	275.03	213.54	223.61	196.51	147.42	146.77	128.89	109.25	89.30	73.50	63.75	59.62	58.03
10.	279.69	221.22	228.35	199.52	151.15	150.48	132.17	112.03	91.55	75.25	65.11	60.73	59.01
11.	284.00	228.25	232.73	202.23	154.56	153.88	135.19	114.60	93.63	76.88	66.36	61.70	59.80
12.	288.00	234.70	236.78	204.64	157.68	156.99	137.95	116.96	95.55	78.38	67.52	62.61	60.59
13.	291.66	240.62	240.50	206.75	160.50	159.80	140.45	119.10	97.29	79.74	68.56	63.44	61.29
14.	295.15	246.18	243.99	208.57	163.02	162.31	142.70	121.03	98.87	80.98	69.51	64.18	61.94
15.	298.27	251.16	247.11	210.11	165.15	164.43	144.60	122.68	100.24	82.06	70.34	64.84	62.50
16.	300.98	255.79	249.85	211.35	166.78	166.06	146.09	123.99	101.36	82.97	71.02	65.34	62.92
17.	302.48	259.84	251.74	212.37	167.77	167.05	147.02	124.87	102.16	83.65	71.48	65.47	62.77
18.	302.69	263.21	252.70	213.29	167.86	167.14	147.21	125.17	102.58	84.13	71.93	65.80	63.03
19.	300.17	265.60	251.90	214.32	166.73	166.02	146.37	124.68	102.51	84.45	72.42	66.24	63.39
20.	290.39	266.08	246.96	215.86	163.91	163.22	144.04	123.02	101.76	84.72	73.29	67.12	64.14
21.	261.84	262.20	232.53	218.85	159.03	158.33	139.10	118.98	99.73	85.23	75.53	69.72	66.71

22. 229.42 236.54 214.92 225.25 152.74 151.65 126.39 107.76 94.52 86.66 81.29 76.25 72.17

AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 160.4991 C
CONCRETE THERMOCOUPLE T= 79.74356 C
AVERAGE CONCRETE TEMP. = 83.07231 C
AVERAGE CANISTER TEMP. = 261.1150 C
AVERAGE HEAT SHIELD TEMP. = 219.8678 C
AVERAGE LINER TEMP. = 147.5613 C
AVERAGE INNER GAP TEMP. = 216.5007 C
AVERAGE OUTER GAP TEMP. = 200.7994 C
AVE. CONCRETE EXTERIOR TEMP= 59.02181 C

CONCRETE EXTERIOR H= 2.497327 W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.982403 W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 5.061874 W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000 C
TOTAL MASS FLOW RATE = 5.6415532E-02 kg/sec
INNER AIR VELOCITY = 0.1504897 m/sec
OUTER AIR VELOCITY = 0.1908307 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 236.5445 C
INNER GAP AIR EXIT TEMP. = 225.2526 C
PRESSURE DROP IN INNER GAP= 0.1344674 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.2866035 Velocity Head

KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

146.99 143.99 102.24 79.24 79.08 89.55
89.48 89.40 89.12 79.50 79.29 71.23

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 74.00000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	140.64	157.52	145.02	160.28	107.25	106.53	88.75	73.52	61.25	53.64	49.76	48.40	47.92
2.	140.41	155.33	146.89	167.37	112.24	111.73	97.87	82.93	68.49	58.05	52.25	50.17	49.51
3.	197.61	159.86	170.33	175.21	118.81	118.30	104.29	88.90	73.43	61.57	54.67	52.09	51.23
4.	232.51	168.02	189.25	181.69	125.64	125.09	110.24	93.94	77.44	64.56	56.88	53.89	52.86
5.	249.57	177.18	200.99	186.94	131.96	131.38	115.69	98.45	80.97	67.22	58.91	55.58	54.38
6.	259.35	186.31	209.15	191.40	137.61	137.01	120.58	102.52	84.17	69.65	60.80	57.18	55.84
7.	266.54	195.08	215.81	195.35	142.66	142.04	124.98	106.19	87.07	71.87	62.51	58.59	57.10
8.	272.56	203.38	221.67	198.90	147.22	146.57	128.96	109.53	89.73	73.92	64.08	59.87	58.24
9.	278.04	211.23	227.05	202.11	151.36	150.70	132.60	112.60	92.19	75.82	65.55	61.07	59.29
10.	282.71	218.56	231.81	204.99	155.14	154.47	135.93	115.43	94.47	77.59	66.91	62.17	60.26
11.	287.04	225.42	236.21	207.59	158.59	157.91	138.98	118.04	96.57	79.22	68.14	63.08	60.97
12.	291.03	231.81	240.26	209.91	161.74	161.04	141.77	120.42	98.51	80.73	69.29	63.98	61.74
13.	294.70	237.77	243.98	211.95	164.57	163.86	144.29	122.58	100.27	82.10	70.33	64.80	62.44
14.	298.18	243.44	247.45	213.74	167.09	166.38	146.54	124.52	101.85	83.34	71.28	65.54	63.08
15.	301.28	248.58	250.55	215.32	169.20	168.48	148.43	126.16	103.21	84.41	72.09	66.18	63.62
16.	303.98	253.42	253.25	216.65	170.81	170.08	149.89	127.45	104.30	85.28	72.74	66.65	64.01
17.	305.45	257.74	255.10	217.83	171.74	171.01	150.78	128.28	105.07	85.91	73.12	66.66	63.70
18.	305.64	261.43	256.00	218.97	171.75	171.03	150.89	128.52	105.43	86.35	73.52	66.94	63.92
19.	303.10	264.24	255.15	220.26	170.51	169.79	149.94	127.93	105.28	86.61	73.97	67.34	64.25
20.	293.37	265.39	250.15	222.06	167.53	166.83	147.46	126.12	104.41	86.79	74.80	68.20	64.97
21.	265.06	262.79	235.69	225.13	162.44	161.73	142.28	121.82	102.15	87.17	76.99	70.78	67.54
22.	232.71	240.95	217.90	231.06	155.90	154.79	129.05	110.04	96.50	88.39	82.76	77.41	73.09

AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 164.5697 C
CONCRETE THERMOCOUPLE T= 82.10223 C
AVERAGE CONCRETE TEMP. = 85.20737 C
AVERAGE CANISTER TEMP. = 264.2043 C
AVERAGE HEAT SHIELD TEMP. = 223.1301 C
AVERAGE LINER TEMP. = 151.2603 C

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AVERAGE INNER GAP TEMP. =      220.8052      C
AVERAGE OUTER GAP TEMP. =      203.2158      C
AVE. CONCRETE EXTERIOR TEMP=      60.10006      C

CONCRETE EXTERIOR H=      2.507521      W/SQM/C
INNER GAP HEAT TRANSFER COEF=      4.718901      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=      4.886838      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =      6.6209905E-02      kg/sec
INNER AIR VELOCITY =      0.1766164      m/sec
OUTER AIR VELOCITY =      0.2239611      m/sec
TOTAL TEMPERATURE RISE =      62.22222      C
INNER GAP AIR EXIT TEMP. =      240.9465      C
INNER GAP AIR EXIT TEMP. =      231.0555      C
PRESSURE DROP IN INNER GAP=      0.1602129      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.3393125      Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =      20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =      3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =      126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

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149.52 145.68 103.57 79.81 79.64 90.61
90.55 90.46 90.67 80.34 79.64 71.81
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THE CASE FOR QTOTAL = 20000.0 Watts

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THE TIME IS:      78.00000
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THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1. 144.11 162.24 147.79 165.06 110.02 109.28 91.12 75.54 62.95 55.07 50.97 49.43 48.85
2. 143.99 159.97 149.75 172.11 115.16 114.64 100.56 85.32 70.52 59.71 53.59 51.30 50.52
3. 200.64 163.96 173.30 179.80 121.91 121.39 107.19 91.52 75.68 63.41 56.14 53.31 52.33
4. 235.33 171.44 192.29 186.18 128.91 128.36 113.33 96.74 79.86 66.53 58.45 55.20 54.03
5. 252.35 179.95 204.11 191.36 135.39 134.81 118.93 101.40 83.52 69.30 60.56 56.95 55.60
6. 262.16 188.54 212.34 195.77 141.17 140.56 123.94 105.57 86.81 71.81 62.50 58.56 57.05
7. 269.38 196.89 219.06 199.66 146.32 145.70 128.44 109.34 89.79 74.09 64.25 59.99 58.33
8. 275.42 204.87 224.96 203.16 150.96 150.32 132.50 112.76 92.52 76.18 65.85 61.30 59.48
9. 280.93 212.47 230.37 206.31 155.18 154.51 136.20 115.89 95.02 78.11 67.34 62.51 60.55
10. 285.62 219.63 235.16 209.14 159.01 158.33 139.58 118.76 97.34 79.90 68.70 63.60 61.51
11. 289.96 226.37 239.57 211.67 162.50 161.81 142.67 121.40 99.47 81.55 69.92 64.46 62.13
12. 293.96 232.70 243.62 213.93 165.67 164.97 145.48 123.80 101.42 83.06 71.05 65.34 62.89
13. 297.62 238.63 247.33 215.92 168.51 167.80 148.01 125.97 103.19 84.43 72.09 66.16 63.58
14. 301.09 244.30 250.78 217.66 171.03 170.31 150.26 127.91 104.78 85.67 73.03 66.89 64.21
15. 304.18 249.46 253.85 219.19 173.12 172.39 152.14 129.54 106.12 86.73 73.83 67.51 64.74
16. 306.85 254.34 256.51 220.49 174.69 173.95 153.56 130.80 107.19 87.57 74.44 67.94 65.09
17. 308.30 258.71 258.31 221.66 175.56 174.83 154.40 131.59 107.90 88.14 74.74 67.82 64.61
18. 308.47 262.49 259.15 222.79 175.49 174.76 154.44 131.75 108.20 88.52 75.09 68.06 64.79
19. 305.91 265.42 258.23 224.08 174.13 173.41 153.38 131.07 107.97 88.72 75.49 68.43 65.10
20. 296.21 266.77 253.16 225.85 171.00 170.30 150.75 129.11 106.97 88.81 76.27 69.24 65.79
21. 268.09 264.58 238.67 228.84 165.70 164.99 145.32 124.56 104.49 89.06 78.41 71.81 68.34
22. 235.79 243.89 220.68 234.51 158.93 157.80 131.60 112.23 98.41 90.06 84.18 78.54 73.99
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AMBIENT TEMPERATURE =      37.77778      C
LINER THERMOCOUPLE T=      168.5083      C
CONCRETE THERMOCOUPLE T=      84.43356      C
AVERAGE CONCRETE TEMP. =      87.30177      C
AVERAGE CANISTER TEMP. =      267.1522      C
AVERAGE HEAT SHIELD TEMP. =      226.2751      C
AVERAGE LINER TEMP. =      154.8341      C
AVERAGE INNER GAP TEMP. =      225.8314      C
AVERAGE OUTER GAP TEMP. =      204.7686      C
AVE. CONCRETE EXTERIOR TEMP=      61.16807      C

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CONCRETE EXTERIOR H=      2.517052      W/SQM/C
INNER GAP HEAT TRANSFER COEF=      4.564554      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=      4.782950      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =      6.9145247E-02      kg/sec
INNER AIR VELOCITY =      0.1844465      m/sec

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    OUTER AIR VELOCITY =      0.2338902      m/sec
    TOTAL TEMPERATURE RISE =      62.22222      C
    INNER GAP AIR EXIT TEMP. =      243.8950      C
    INNER GAP AIR EXIT TEMP. =      234.5109      C
    PRESSURE DROP IN INNER GAP=      0.1702663      Velocity Head
    PRESSURE DROP IN OUTER GAP=      0.3563432      Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =      20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =      3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =      126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

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    151.94  147.26  104.85   80.36   80.18   91.63
     91.56   91.48   92.16   81.16   79.97   72.35
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS:      82.00000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1.	147.47	160.67	150.94	163.19	112.77	112.01	93.46	77.54	64.63	56.50	52.18	50.47	49.78
2.	147.44	158.80	152.96	170.71	118.05	117.52	103.20	87.67	72.52	61.35	54.93	52.42	51.52
3.	203.58	164.42	176.49	179.14	124.97	124.44	110.04	94.09	77.90	65.23	57.60	54.53	53.42
4.	238.06	173.94	195.43	186.09	132.14	131.58	116.34	99.48	82.24	68.49	60.03	56.51	55.20
5.	255.04	184.34	207.22	191.67	138.76	138.17	122.09	104.28	86.03	71.36	62.21	58.31	56.82
6.	264.86	194.49	215.44	196.38	144.65	144.04	127.22	108.57	89.42	73.94	64.19	59.93	58.26
7.	272.09	204.05	222.15	200.53	149.90	149.27	131.81	112.42	92.48	76.28	65.98	61.39	59.55
8.	278.16	212.95	228.04	204.24	154.62	153.97	135.95	115.92	95.26	78.42	67.61	62.72	60.72
9.	283.68	221.21	233.45	207.57	158.89	158.22	139.71	119.10	97.81	80.39	69.11	63.94	61.79
10.	288.38	228.83	238.22	210.53	162.77	162.08	143.14	122.01	100.16	82.19	70.48	65.02	62.74
11.	292.72	235.85	242.62	213.16	166.29	165.59	146.26	124.67	102.31	83.84	71.67	65.83	63.29
12.	296.72	242.31	246.66	215.47	169.48	168.77	149.09	127.10	104.28	85.36	72.80	66.69	64.02
13.	300.39	248.26	250.35	217.46	172.32	171.60	151.62	129.28	106.05	86.73	73.84	67.50	64.71
14.	303.84	253.86	253.79	219.15	174.83	174.11	153.87	131.22	107.64	87.97	74.77	68.23	65.33
15.	306.91	258.89	256.83	220.56	176.90	176.17	155.73	132.83	108.97	89.01	75.55	68.83	65.84
16.	309.56	263.56	259.46	221.66	178.43	177.69	157.12	134.06	110.01	89.81	76.11	69.21	66.15
17.	310.99	267.66	261.22	222.53	179.25	178.51	157.90	134.80	110.67	90.33	76.34	68.97	65.52
18.	311.12	271.07	262.02	223.32	179.09	178.36	157.86	134.89	110.91	90.65	76.63	69.16	65.65
19.	308.55	273.52	261.05	224.22	177.62	176.90	156.70	134.11	110.59	90.78	76.98	69.49	65.92
20.	298.86	274.14	255.95	225.68	174.34	173.63	153.91	132.00	109.46	90.78	77.70	70.27	66.59
21.	270.93	270.62	241.47	228.54	168.84	168.13	148.25	127.19	106.76	90.89	79.79	72.82	69.13
22.	238.68	245.58	223.44	234.70	161.85	160.70	134.06	114.35	100.25	91.67	85.55	79.62	74.84

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    AMBIENT TEMPERATURE =      37.77778      C
    LINER THERMOCOUPLE T=      172.3226      C
    CONCRETE THERMOCOUPLE T=      86.73221      C
    AVERAGE CONCRETE TEMP. =      89.35509      C
    AVERAGE CANISTER TEMP. =      269.9555      C
    AVERAGE HEAT SHIELD TEMP. =      229.2984      C
    AVERAGE LINER TEMP. =      158.3070      C
    AVERAGE INNER GAP TEMP. =      224.8945      C
    AVERAGE OUTER GAP TEMP. =      211.3405      C
    AVE. CONCRETE EXTERIOR TEMP=      62.22290      C

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    CONCRETE EXTERIOR H=      2.526984      W/SQM/C
    INNER GAP HEAT TRANSFER COEF=      4.942136      W/SQM/C
    OUTER GAP HEAT TRANSFER COEF=      5.058564      W/SQM/C
    INNER GAP AIR FLOW FRACTION =      0.6000000      C
    TOTAL MASS FLOW RATE =      5.9381191E-02      kg/sec
    INNER AIR VELOCITY =      0.1584007      m/sec
    OUTER AIR VELOCITY =      0.2008624      m/sec
    TOTAL TEMPERATURE RISE =      62.22222      C
    INNER GAP AIR EXIT TEMP. =      245.5779      C
    INNER GAP AIR EXIT TEMP. =      234.6983      C
    PRESSURE DROP IN INNER GAP=      0.1457490      Velocity Head
    PRESSURE DROP IN OUTER GAP=      0.3132992      Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =      20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts

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THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
 THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES
 CAN...10..11..12..13..20..21..22..30..31..32..41

154.26 150.05 106.07 80.87 80.69 92.62
 92.54 92.46 93.60 81.95 80.29 72.85

THE CASE FOR QTOTAL = 20000.0 Watts

 THE TIME IS: 86.00000

THE TEMPERATURES FOR THE SIDE NODES
 CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	150.66	161.95	153.46	164.30	115.42	114.65	95.75	79.51	66.30	57.92	53.39	51.51	50.70
2.	150.72	160.27	155.56	172.06	120.84	120.31	105.78	89.98	74.50	62.99	56.26	53.54	52.52
3.	206.38	166.52	179.19	180.84	127.93	127.39	112.82	96.62	80.09	67.04	59.06	55.75	54.50
4.	240.68	176.80	198.21	188.06	135.26	134.69	119.29	102.17	84.59	70.43	61.58	57.80	56.35
5.	257.63	187.88	210.08	193.84	142.02	141.43	125.17	107.11	88.50	73.40	63.84	59.66	58.02
6.	267.46	198.55	218.37	198.71	148.03	147.41	130.42	111.50	91.98	76.06	65.86	61.29	59.45
7.	274.71	208.51	225.15	202.98	153.37	152.73	135.10	115.44	95.11	78.45	67.69	62.78	60.75
8.	280.80	217.69	231.09	206.78	158.17	157.51	139.31	119.00	97.96	80.63	69.36	64.12	61.94
9.	286.34	226.15	236.53	210.18	162.50	161.82	143.13	122.24	100.55	82.63	70.88	65.35	63.03
10.	291.05	233.87	241.33	213.18	166.41	165.72	146.59	125.19	102.93	84.45	72.25	66.43	63.97
11.	295.40	240.94	245.74	215.84	169.96	169.26	149.74	127.87	105.10	86.10	73.41	67.18	64.42
12.	299.40	247.42	249.79	218.14	173.16	172.45	152.59	130.31	107.07	87.62	74.53	68.02	65.14
13.	303.06	253.34	253.47	220.11	176.01	175.29	155.13	132.50	108.85	88.99	75.56	68.83	65.82
14.	306.50	258.87	256.88	221.73	178.51	177.78	157.37	134.43	110.44	90.22	76.49	69.54	66.43
15.	309.55	263.81	259.89	223.04	180.55	179.81	159.21	136.03	111.75	91.25	77.25	70.13	66.92
16.	312.17	268.38	262.48	224.00	182.04	181.30	160.56	137.22	112.76	92.01	77.77	70.46	67.19
17.	313.57	272.34	264.19	224.69	182.79	182.05	161.28	137.91	113.37	92.47	77.91	70.10	66.40
18.	313.68	275.59	264.93	225.25	182.56	181.82	161.16	137.93	113.53	92.73	78.14	70.23	66.48
19.	311.07	277.84	263.89	225.88	180.97	180.24	159.90	137.05	113.13	92.79	78.44	70.52	66.73
20.	301.41	278.16	258.71	227.05	177.54	176.83	156.95	134.79	111.87	92.69	79.10	71.26	67.36
21.	273.63	274.14	244.19	229.71	171.85	171.13	151.05	129.73	108.95	92.67	81.13	73.79	69.88
22.	241.39	247.28	225.94	235.90	164.64	163.47	136.41	116.38	102.03	93.23	86.87	80.67	75.67

AMBIENT TEMPERATURE = 37.77778 C
 LINER THERMOCOUPLE T= 176.0106 C
 CONCRETE THERMOCOUPLE T= 88.99432 C
 AVERAGE CONCRETE TEMP. = 91.36492 C
 AVERAGE CANISTER TEMP. = 272.6443 C
 AVERAGE HEAT SHIELD TEMP. = 232.1993 C
 AVERAGE LINER TEMP. = 161.6606 C
 AVERAGE INNER GAP TEMP. = 228.8579 C
 AVERAGE OUTER GAP TEMP. = 213.3806 C
 AVE. CONCRETE EXTERIOR TEMP= 63.26159 C

CONCRETE EXTERIOR H= 2.535674 W/SQM/C
 INNER GAP HEAT TRANSFER COEF= 4.967719 W/SQM/C
 OUTER GAP HEAT TRANSFER COEF= 5.075286 W/SQM/C
 INNER GAP AIR FLOW FRACTION = 0.6000000 C
 TOTAL MASS FLOW RATE = 5.5070899E-02 kg/sec
 INNER AIR VELOCITY = 0.1469029 m/sec
 OUTER AIR VELOCITY = 0.1862824 m/sec
 TOTAL TEMPERATURE RISE = 62.22222 C
 INNER GAP AIR EXIT TEMP. = 247.2751 C
 INNER GAP AIR EXIT TEMP. = 235.9034 C
 PRESSURE DROP IN INNER GAP= 0.1369958 Velocity Head
 PRESSURE DROP IN OUTER GAP= 0.2926681 Velocity Head

KK = 3
 THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
 THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
 THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
 THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES
 CAN...10..11..12..13..20..21..22..30..31..32..41

156.47 151.76 107.24 81.37 81.18 93.56
 93.48 93.39 94.99 82.70 80.60 73.33

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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 90.00000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR...LINER...CONCR. ----- CONCR.

1. 153.72 173.84 156.14 176.80 118.04 117.26 98.00 81.44 67.96 59.33 54.60 52.54 51.62
2. 153.87 171.44 158.31 183.78 123.58 123.05 108.32 92.25 76.45 64.61 57.58 54.64 53.52
3. 209.09 174.69 182.01 191.28 130.83 130.29 115.54 99.09 82.24 68.83 60.51 56.95 55.58
4. 243.21 181.19 201.06 197.51 138.31 137.74 122.17 104.81 86.90 72.35 63.13 59.09 57.49
5. 260.12 188.77 212.96 202.58 145.20 144.61 128.19 109.87 90.93 75.42 65.46 61.00 59.21
6. 269.96 196.55 221.28 206.89 151.32 150.70 133.54 114.37 94.50 78.14 67.52 62.64 60.62
7. 277.24 204.23 228.08 210.69 156.75 156.11 138.31 118.39 97.70 80.59 69.39 64.14 61.95
8. 283.34 211.68 234.04 214.07 161.61 160.95 142.59 122.02 100.60 82.82 71.08 65.51 63.15
9. 288.89 218.86 239.49 217.10 166.00 165.32 146.46 125.30 103.24 84.84 72.62 66.75 64.24
10. 293.61 225.71 244.29 219.80 169.95 169.26 149.96 128.29 105.64 86.68 73.99 67.82 65.17
11. 297.96 232.21 248.70 222.19 173.52 172.82 153.13 130.99 107.83 88.33 75.13 68.51 65.54
12. 301.96 238.37 252.73 224.30 176.73 176.02 155.99 133.45 109.81 89.84 76.24 69.34 66.23
13. 305.61 244.18 256.40 226.15 179.58 178.85 158.53 135.63 111.59 91.22 77.26 70.13 66.91
14. 309.04 249.78 259.79 227.75 182.07 181.33 160.76 137.56 113.17 92.44 78.17 70.84 67.51
15. 312.07 254.90 262.76 229.14 184.08 183.34 162.57 139.14 114.47 93.44 78.91 71.40 67.99
16. 314.66 259.76 265.32 230.30 185.52 184.78 163.89 140.29 115.43 94.17 79.39 71.69 68.21
17. 316.03 264.15 266.97 231.35 186.21 185.47 164.55 140.92 115.99 94.56 79.45 71.21 67.26
18. 316.11 267.98 267.65 232.37 185.89 185.15 164.35 140.86 116.09 94.76 79.61 71.28 67.30
19. 313.48 271.00 266.55 233.56 184.19 183.46 162.97 139.88 115.59 94.74 79.86 71.53 67.51
20. 303.82 272.56 261.30 235.22 180.62 179.90 159.88 137.48 114.20 94.55 80.47 72.23 68.11
21. 276.18 270.90 246.72 238.01 174.74 174.01 153.76 132.18 111.07 94.38 82.43 74.72 70.61
22. 243.96 251.84 228.34 243.24 167.32 166.14 138.67 118.34 103.74 94.74 88.15 81.68 76.46
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AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 179.5807 C
CONCRETE THERMOCOUPLE T= 91.21680 C
AVERAGE CONCRETE TEMP. = 93.33087 C
AVERAGE CANISTER TEMP. = 275.2198 C
AVERAGE HEAT SHIELD TEMP. = 235.0018 C
AVERAGE LINER TEMP. = 164.9127 C
AVERAGE INNER GAP TEMP. = 231.4856 C
AVERAGE OUTER GAP TEMP. = 215.9537 C
AVE. CONCRETE EXTERIOR TEMP= 64.28233 C

CONCRETE EXTERIOR H= 2.543854 W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.580451 W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 4.818682 W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000 C
TOTAL MASS FLOW RATE = 7.5586304E-02 kg/sec
INNER AIR VELOCITY = 0.2058348 m/sec
OUTER AIR VELOCITY = 0.2610119 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 251.8429 C
INNER GAP AIR EXIT TEMP. = 243.2413 C
PRESSURE DROP IN INNER GAP= 0.1936190 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.4138199 Velocity Head

KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

158.59 152.90 108.36 81.84 81.65 94.46
94.38 94.29 96.33 83.43 80.90 73.85
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 94.00000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1.	156.63	171.91	158.75	174.69	120.56	119.76	100.20	83.35	69.60	60.74	55.80	53.57	52.54
2.	156.86	169.80	160.99	182.17	126.23	125.68	110.79	94.47	78.38	66.21	58.90	55.75	54.50
3.	211.68	174.42	184.73	190.39	133.63	133.09	118.19	101.52	84.37	70.59	61.94	58.14	56.64
4.	245.63	182.71	203.78	197.18	141.27	140.69	124.98	107.40	89.17	74.24	64.66	60.36	58.62
5.	262.53	192.01	215.71	202.66	148.29	147.69	131.12	112.58	93.32	77.41	67.06	62.32	60.38
6.	272.38	201.27	224.05	207.29	154.52	153.89	136.58	117.18	96.97	80.20	69.16	63.97	61.78
7.	279.68	210.16	230.87	211.35	160.04	159.39	141.43	121.28	100.25	82.70	71.06	65.50	63.12
8.	285.81	218.58	236.84	214.95	164.97	164.30	145.78	124.97	103.20	84.97	72.78	66.88	64.34
9.	291.37	226.51	242.30	218.15	169.40	168.71	149.70	128.30	105.88	87.02	74.34	68.13	65.44
10.	296.10	233.91	247.10	220.98	173.39	172.69	153.23	131.31	108.31	88.87	75.70	69.19	66.35
11.	300.46	240.81	251.50	223.47	176.98	176.27	156.43	134.04	110.50	90.51	76.82	69.82	66.64
12.	304.46	247.23	255.52	225.64	180.20	179.48	159.29	136.50	112.49	92.03	77.91	70.63	67.31
13.	308.10	253.18	259.17	227.49	183.04	182.31	161.84	138.69	114.27	93.40	78.93	71.41	67.98
14.	311.51	258.82	262.54	229.05	185.51	184.77	164.05	140.60	115.84	94.61	79.83	72.11	68.57
15.	314.52	263.90	265.48	230.34	187.49	186.75	165.84	142.16	117.12	95.59	80.55	72.65	69.02
16.	317.08	268.65	267.99	231.35	188.89	188.14	167.11	143.27	118.04	96.27	80.97	72.89	69.20
17.	318.42	272.85	269.60	232.18	189.51	188.76	167.71	143.84	118.54	96.60	80.95	72.29	68.10
18.	318.46	276.39	270.23	232.95	189.10	188.36	167.43	143.71	118.57	96.73	81.05	72.30	68.09
19.	315.80	279.00	269.07	233.86	187.29	186.55	165.94	142.62	117.98	96.64	81.25	72.51	68.27
20.	306.14	279.92	263.77	235.31	183.56	182.84	162.70	140.07	116.46	96.36	81.79	73.17	68.83
21.	278.62	277.06	249.17	238.12	177.50	176.77	156.35	134.54	113.11	96.05	83.68	75.63	71.31
22.	246.38	253.97	230.68	243.91	169.87	168.68	140.83	120.22	105.39	96.19	89.38	82.64	77.22

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          183.0437      C
CONCRETE THERMOCOUPLE T=        93.39697      C
AVERAGE CONCRETE TEMP. =        95.25121      C
AVERAGE CANISTER TEMP. =        277.7049      C
AVERAGE HEAT SHIELD TEMP. =     237.6926      C
AVERAGE LINER TEMP. =          168.0546      C
AVERAGE INNER GAP TEMP. =       230.4873      C
AVERAGE OUTER GAP TEMP. =       221.9110      C
AVE. CONCRETE EXTERIOR TEMP=     65.28326      C

CONCRETE EXTERIOR H=            2.552460      W/SQM/C
INNER GAP HEAT TRANSFER COEF=    4.914179      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=    5.052222      W/SQM/C
INNER GAP AIR FLOW FRACTION =    0.6000000      C
TOTAL MASS FLOW RATE =          4.4373590E-02  kg/sec
INNER AIR VELOCITY =            0.1775513      m/sec
OUTER AIR VELOCITY =            0.2251467      m/sec
TOTAL TEMPERATURE RISE =        62.22222      C
INNER GAP AIR EXIT TEMP. =       253.9668      C
INNER GAP AIR EXIT TEMP. =       243.9142      C
PRESSURE DROP IN INNER GAP=      0.1664676      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.3644900      Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646      Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

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160.61	155.47	109.43	82.29	82.10	95.32
95.25	95.16	97.61	84.12	81.18	74.29

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THE CASE FOR QTOTAL = 20000.0 Watts
*****
THE TIME IS: 98.00000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

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1.	159.43	175.11	161.10	177.87	123.03	122.23	102.35	85.23	71.22	62.13	56.99	54.59	53.44
2.	159.74	172.98	163.42	185.38	128.82	128.28	113.20	96.65	80.27	67.80	60.20	56.84	55.47
3.	214.17	177.33	187.23	193.59	136.38	135.83	120.79	103.90	86.45	72.34	63.35	59.32	57.68
4.	247.98	185.25	206.34	200.38	144.15	143.58	127.72	109.92	91.40	76.11	66.17	61.61	59.74
5.	264.85	194.20	218.32	205.86	151.30	150.70	133.99	115.23	95.66	79.37	68.64	63.62	61.54
6.	274.72	203.18	226.73	210.48	157.63	157.00	139.55	119.93	99.40	82.22	70.78	65.28	62.92
7.	282.05	211.85	233.60	214.52	163.24	162.59	144.48	124.10	102.74	84.78	72.71	66.83	64.27
8.	288.19	220.11	239.60	218.10	168.23	167.56	148.89	127.85	105.75	87.08	74.46	68.23	65.51
9.	293.77	227.92	245.09	221.27	172.71	172.02	152.85	131.22	108.46	89.16	76.03	69.49	66.61
10.	298.51	235.25	249.90	224.06	176.73	176.03	156.42	134.26	110.91	91.02	77.39	70.53	67.51

11.	302.87	242.11	254.31	226.51	180.34	179.63	159.63	137.01	113.12	92.66	78.48	71.10	67.71
12.	306.87	248.51	258.33	228.63	183.56	182.84	162.51	139.47	115.11	94.17	79.56	71.89	68.37
13.	310.50	254.46	261.96	230.43	186.40	185.67	165.04	141.66	116.89	95.53	80.57	72.67	69.02
14.	313.89	260.11	265.31	231.92	188.85	188.11	167.24	143.56	118.44	96.73	81.46	73.35	69.60
15.	316.88	265.21	268.22	233.15	190.80	190.05	169.00	145.09	119.70	97.69	82.15	73.87	70.04
16.	319.41	269.99	270.69	234.09	192.14	191.39	170.23	146.16	120.58	98.33	82.52	74.06	70.17
17.	320.72	274.22	272.24	234.86	192.70	191.95	170.76	146.67	121.02	98.59	82.41	73.34	68.92
18.	320.72	277.80	272.80	235.57	192.20	191.45	170.40	146.45	120.97	98.65	82.46	73.30	68.86
19.	318.02	280.48	271.56	236.42	190.27	189.54	168.80	145.27	120.29	98.49	82.59	73.47	69.00
20.	308.35	281.50	266.19	237.80	186.40	185.68	165.41	142.57	118.64	98.10	83.07	74.08	69.53
21.	280.94	278.87	251.53	240.51	180.16	179.42	158.84	136.80	115.08	97.65	84.89	76.50	71.98
22.	248.68	256.03	232.85	246.18	172.34	171.12	142.92	122.03	106.98	97.59	90.56	83.58	77.95

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          186.3994      C
CONCRETE THERMOCOUPLE T=        95.53281      C
AVERAGE CONCRETE TEMP. =        97.12633      C
AVERAGE CANISTER TEMP. =        280.0928      C
AVERAGE HEAT SHIELD TEMP. =     240.2841      C
AVERAGE LINER TEMP. =          171.1095      C
AVERAGE INNER GAP TEMP. =        240.4337      C
AVERAGE OUTER GAP TEMP. =       218.6656      C
AVE. CONCRETE EXTERIOR TEMP=     66.26340      C

CONCRETE EXTERIOR H=            2.559139      W/SQM/C
INNER GAP HEAT TRANSFER COEF=    4.567884      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=    4.816771      W/SQM/C
INNER GAP AIR FLOW FRACTION =     0.6000000      C
TOTAL MASS FLOW RATE =          6.4645171E-02  kg/sec
INNER AIR VELOCITY =            0.1724425      m/sec
OUTER AIR VELOCITY =            0.2186683      m/sec
TOTAL TEMPERATURE RISE =         62.22222      C
INNER GAP AIR EXIT TEMP. =       256.0333      C
INNER GAP AIR EXIT TEMP. =       246.1785      C
PRESSURE DROP IN INNER GAP=      0.1670035      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.3500075      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =        2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =         3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =         126.5690      Watts
*****

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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

162.54	156.08	110.46	82.73	82.53	96.15
96.08	95.98	98.85	84.79	81.45	74.72

THE CASE FOR QTOTAL = 20000.0 Watts

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*****
THE TIME IS:    102.0000
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THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	162.14	182.64	163.49	185.66	125.47	124.65	104.47	87.08	72.82	63.52	58.18	55.61	54.35
2.	162.53	180.21	165.87	192.74	131.38	130.83	115.57	98.79	82.14	69.37	61.49	57.91	56.43
3.	216.59	183.23	189.75	200.30	139.07	138.52	123.33	106.23	88.50	74.05	64.75	60.48	58.72
4.	250.26	189.42	208.90	206.56	146.98	146.40	130.40	112.40	93.59	77.95	67.66	62.84	60.83
5.	267.11	196.71	220.92	211.66	154.25	153.64	136.79	117.83	97.96	81.29	70.20	64.90	62.67
6.	276.99	204.25	229.36	215.98	160.68	160.04	142.45	122.61	101.79	84.21	72.37	66.57	64.04
7.	284.33	211.73	236.25	219.76	166.36	165.70	147.46	126.86	105.19	86.82	74.34	68.14	65.41
8.	290.49	219.03	242.27	223.10	171.41	170.73	151.93	130.66	108.24	89.16	76.11	69.56	66.66
9.	296.08	226.09	247.76	226.06	175.93	175.24	155.93	134.07	110.99	91.27	77.70	70.82	67.76
10.	300.83	232.84	252.58	228.66	179.97	179.27	159.53	137.14	113.46	93.13	79.05	71.85	68.65
11.	305.19	239.27	256.99	230.95	183.60	182.88	162.75	139.90	115.67	94.77	80.11	72.36	68.76
12.	309.18	245.37	260.99	232.94	186.83	186.10	165.63	142.37	117.67	96.27	81.18	73.13	69.40
13.	312.80	251.13	264.61	234.65	189.65	188.92	168.16	144.55	119.44	97.62	82.17	73.89	70.04
14.	316.18	256.69	267.92	236.10	192.08	191.33	170.34	146.44	120.98	98.81	83.05	74.57	70.61
15.	319.14	261.77	270.80	237.33	193.99	193.24	172.07	147.94	122.21	99.74	83.71	75.06	71.02
16.	321.64	266.59	273.22	238.33	195.29	194.53	173.24	148.97	123.05	100.33	84.04	75.20	71.11
17.	322.91	270.95	274.73	239.23	195.78	195.02	173.71	149.41	123.42	100.53	83.84	74.36	69.71
18.	322.88	274.73	275.23	240.09	195.19	194.44	173.26	149.11	123.30	100.52	83.82	74.27	69.61
19.	320.15	277.72	273.92	241.09	193.15	192.41	171.56	147.82	122.53	100.27	83.90	74.39	69.71
20.	310.47	279.27	268.48	242.59	189.14	188.42	168.02	144.98	120.75	99.79	84.31	74.96	70.21

21.	283.15	277.69	253.76	245.23	182.72	181.98	161.25	138.99	116.98	99.20	86.07	77.35	72.63
22.	250.87	258.72	234.94	250.30	174.71	173.48	144.92	123.77	108.51	98.93	91.70	84.47	78.65

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          189.6534      C
CONCRETE THERMOCOUPLE T=         97.62274      C
AVERAGE CONCRETE TEMP. =         98.95634      C
AVERAGE CANISTER TEMP. =         282.3945      C
AVERAGE HEAT SHIELD TEMP. =       242.8089      C
AVERAGE LINER TEMP. =           174.0727      C
AVERAGE INNER GAP TEMP. =         238.7766      C
AVERAGE OUTER GAP TEMP. =         224.4159      C
AVE. CONCRETE EXTERIOR TEMP=       67.22167      C

CONCRETE EXTERIOR H=             2.566741      W/SQM/C
INNER GAP HEAT TRANSFER COEF=     4.561219      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=     4.832025      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =           6.0698550E-02  kg/sec
INNER AIR VELOCITY =              0.2110045      m/sec
OUTER AIR VELOCITY =              0.2675674      m/sec
TOTAL TEMPERATURE RISE =          62.22222      C
INNER GAP AIR EXIT TEMP. =         258.7212      C
INNER GAP AIR EXIT TEMP. =         250.2975      C
PRESSURE DROP IN INNER GAP=       0.2032565      Velocity Head
PRESSURE DROP IN OUTER GAP=       0.4369561      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =       2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =         3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =        126.5690      Watts
*****

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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

164.38	157.78	111.44	83.14	82.93	96.95
96.87	96.78	100.04	85.44	81.71	75.16

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THE CASE FOR QTOTAL = 20000.0 Watts
*****
THE TIME IS:    106.0000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR....LINER...CONCR. ----- CONCR.

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1.	164.73	181.03	165.81	183.87	127.83	127.01	106.55	88.89	74.40	64.89	59.36	56.61	55.24
2.	165.19	178.85	168.25	191.43	133.85	133.30	117.89	100.89	83.98	70.92	62.77	58.98	57.38
3.	218.92	182.92	192.17	199.63	141.68	141.13	125.80	108.51	90.52	75.75	66.13	61.62	59.73
4.	252.46	190.48	211.35	206.41	149.73	149.15	133.02	114.82	95.74	79.76	69.13	64.06	61.91
5.	269.29	199.11	223.40	211.88	157.11	156.50	139.53	120.36	100.21	83.19	71.73	66.17	63.79
6.	279.19	207.82	231.88	216.49	163.64	163.00	145.28	125.24	104.12	86.17	73.94	67.84	65.14
7.	286.55	216.29	238.80	220.50	169.39	168.73	150.36	129.56	107.59	88.82	75.94	69.42	66.52
8.	292.73	224.38	244.85	224.03	174.50	173.82	154.88	133.41	110.69	91.20	77.73	70.86	67.78
9.	298.33	232.08	250.35	227.15	179.06	178.36	158.93	136.86	113.47	93.33	79.33	72.13	68.89
10.	303.09	239.33	255.18	229.87	183.13	182.42	162.55	139.95	115.96	95.20	80.68	73.15	69.76
11.	307.45	246.12	259.58	232.24	186.77	186.05	165.79	142.72	118.17	96.83	81.71	73.60	69.79
12.	311.44	252.48	263.57	234.27	190.00	189.27	168.67	145.19	120.16	98.32	82.76	74.35	70.41
13.	315.04	258.41	267.17	235.97	192.81	192.07	171.19	147.36	121.93	99.67	83.74	75.10	71.04
14.	318.40	264.04	270.46	237.36	195.21	194.47	173.35	149.23	123.46	100.83	84.60	75.75	71.59
15.	321.34	269.13	273.30	238.49	197.09	196.33	175.04	150.70	124.66	101.74	85.24	76.22	71.98
16.	323.81	273.90	275.68	239.33	198.33	197.58	176.17	151.68	125.45	102.29	85.51	76.31	72.03
17.	325.05	278.13	277.13	240.01	198.75	197.99	176.57	152.06	125.76	102.41	85.23	75.36	70.48
18.	324.97	281.71	277.57	240.62	198.07	197.32	176.03	151.69	125.56	102.33	85.15	75.20	70.33
19.	322.20	284.39	276.19	241.39	195.93	195.18	174.22	150.29	124.69	102.01	85.16	75.28	70.40
20.	312.52	285.45	270.69	242.69	191.77	191.05	170.54	147.30	122.78	101.43	85.51	75.80	70.86
21.	285.27	282.97	255.92	245.32	185.18	184.44	163.56	141.09	118.81	100.70	87.20	78.16	73.25
22.	252.96	260.48	236.96	250.84	176.99	175.74	146.85	125.44	109.99	100.23	92.80	85.33	79.32

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          192.8113      C
CONCRETE THERMOCOUPLE T=         99.66568      C
AVERAGE CONCRETE TEMP. =         100.7408      C
AVERAGE CANISTER TEMP. =         284.6197      C
AVERAGE HEAT SHIELD TEMP. =       245.2339      C

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AVERAGE LINER TEMP. =          176.9464      C
AVERAGE INNER GAP TEMP. =       244.7958      C
AVERAGE OUTER GAP TEMP. =       224.2796      C
AVE. CONCRETE EXTERIOR TEMP=     68.15743      C

CONCRETE EXTERIOR H=            2.573309      W/SQM/C
INNER GAP HEAT TRANSFER COEF=    4.555350      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=    4.827681      W/SQM/C
INNER GAP AIR FLOW FRACTION =    0.6000000      C
TOTAL MASS FLOW RATE =          6.6688336E-02 kg/sec
INNER AIR VELOCITY =            0.1778926      m/sec
OUTER AIR VELOCITY =            0.2255795      m/sec
TOTAL TEMPERATURE RISE =         62.22222      C
INNER GAP AIR EXIT TEMP. =       260.4800      C
INNER GAP AIR EXIT TEMP. =       250.8446      C
PRESSURE DROP IN INNER GAP=     0.1747182      Velocity Head
PRESSURE DROP IN OUTER GAP=     0.3682127      Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646      Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

166.15 159.17 112.38 83.53 83.33 97.71
97.63 97.54 101.18 86.05 81.96 75.54
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 110.0000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1.	167.27	182.23	168.30	185.05	130.18	129.34	108.59	90.68	75.96	66.25	60.52	57.61	56.12
2.	167.80	180.12	170.78	192.77	136.31	135.74	120.16	102.96	85.78	72.45	64.03	60.03	58.31
3.	221.20	184.66	194.70	201.20	144.26	143.70	128.24	110.75	92.50	77.42	67.49	62.75	60.73
4.	254.61	192.84	213.85	208.15	152.43	151.85	135.59	117.20	97.85	81.54	70.57	65.25	62.96
5.	271.41	202.05	225.88	213.75	159.93	159.31	142.20	122.85	102.42	85.05	73.24	67.40	64.88
6.	281.32	211.26	234.35	218.46	166.53	165.89	148.04	127.81	106.41	88.09	75.48	69.08	66.21
7.	288.70	220.12	241.26	222.55	172.35	171.69	153.19	132.19	109.93	90.79	77.50	70.68	67.61
8.	294.89	228.52	247.30	226.14	177.51	176.83	157.77	136.09	113.08	93.20	79.33	72.14	68.88
9.	300.50	236.45	252.80	229.30	182.11	181.41	161.85	139.58	115.89	95.35	80.93	73.41	69.99
10.	305.26	243.85	257.61	232.05	186.20	185.49	165.49	142.69	118.39	97.23	82.28	74.42	70.85
11.	309.62	250.74	261.99	234.43	189.85	189.13	168.74	145.47	120.61	98.84	83.28	74.81	70.80
12.	313.59	257.15	265.97	236.45	193.07	192.34	171.62	147.94	122.60	100.33	84.31	75.53	71.39
13.	317.19	263.08	269.54	238.13	195.87	195.13	174.13	150.10	124.36	101.66	85.28	76.27	72.01
14.	320.53	268.69	272.81	239.49	198.25	197.50	176.27	151.95	125.87	102.81	86.12	76.91	72.55
15.	323.44	273.73	275.62	240.55	200.09	199.33	177.92	153.39	127.03	103.68	86.72	77.35	72.92
16.	325.88	278.41	277.96	241.31	201.28	200.52	179.00	154.32	127.78	104.19	86.95	77.40	72.92
17.	327.09	282.52	279.37	241.85	201.63	200.87	179.33	154.63	128.02	104.24	86.58	76.32	71.23
18.	326.97	285.96	279.76	242.34	200.87	200.11	178.71	154.17	127.75	104.09	86.43	76.11	71.03
19.	324.16	288.45	278.34	242.97	198.61	197.86	176.79	152.68	126.79	103.69	86.39	76.15	71.06
20.	314.46	289.24	272.78	244.17	194.32	193.59	172.97	149.55	124.75	103.00	86.66	76.62	71.48
21.	287.30	286.28	257.99	246.77	187.56	186.82	165.79	143.12	120.58	102.14	88.29	78.94	73.86
22.	254.96	262.49	238.98	252.43	179.19	177.94	148.71	127.05	111.40	101.48	93.86	86.16	79.97

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          195.8739      C
CONCRETE THERMOCOUPLE T=        101.6609      C
AVERAGE CONCRETE TEMP. =        102.4809      C
AVERAGE CANISTER TEMP. =        286.7650      C
AVERAGE HEAT SHIELD TEMP. =     247.5993      C
AVERAGE LINER TEMP. =          179.7416      C
AVERAGE INNER GAP TEMP. =        240.3888      C
AVERAGE OUTER GAP TEMP. =        232.0802      C
AVE. CONCRETE EXTERIOR TEMP=     69.07030      C

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CONCRETE EXTERIOR H=            2.580689      W/SQM/C
INNER GAP HEAT TRANSFER COEF=    4.890209      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=    5.060407      W/SQM/C
INNER GAP AIR FLOW FRACTION =    0.6000000      C
TOTAL MASS FLOW RATE =          4.4072371E-02 kg/sec

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INNER AIR VELOCITY =      0.1763461      m/sec
OUTER AIR VELOCITY =      0.2236183      m/sec
TOTAL TEMPERATURE RISE =          62.22222      C
INNER GAP AIR EXIT TEMP. =          262.4937      C
INNER GAP AIR EXIT TEMP. =          252.4273      C
PRESSURE DROP IN INNER GAP=          0.1707592      Velocity Head
PRESSURE DROP IN OUTER GAP=          0.3746803      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =          20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =          2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =          3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =          126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

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167.83 161.54 113.29 83.91 83.70 98.45
98.37 98.27 102.29 86.65 82.20 75.93
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 114.0000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

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1.	169.71	189.50	170.33	192.54	132.45	131.60	110.60	92.45	77.51	67.59	61.68	58.59	56.99
2.	170.30	187.09	172.88	199.82	138.68	138.11	122.39	104.98	87.56	73.96	65.27	61.07	59.23
3.	223.40	190.18	196.88	207.58	146.76	146.20	130.62	112.94	94.44	79.06	68.83	63.86	61.71
4.	256.69	196.48	216.10	214.00	155.06	154.47	138.09	119.53	99.92	83.28	72.00	66.42	64.00
5.	273.47	203.90	228.20	219.21	162.65	162.03	144.82	125.28	104.59	86.88	74.71	68.62	65.95
6.	283.39	211.56	236.73	223.60	169.35	168.70	150.74	130.32	108.65	89.97	76.99	70.30	67.27
7.	290.79	219.15	243.69	227.42	175.23	174.57	155.95	134.77	112.23	92.72	79.04	71.92	68.67
8.	296.99	226.54	249.77	230.76	180.44	179.76	160.58	138.72	115.42	95.16	80.89	73.38	69.96
9.	302.61	233.68	255.28	233.70	185.07	184.37	164.69	142.23	118.26	97.33	82.50	74.66	71.07
10.	307.37	240.50	260.11	236.25	189.18	188.47	168.36	145.37	120.77	99.21	83.84	75.65	71.91
11.	311.73	246.98	264.50	238.47	192.84	192.11	171.61	148.14	122.99	100.81	84.81	75.99	71.78
12.	315.70	253.11	268.47	240.36	196.06	195.32	174.49	150.61	124.98	102.29	85.82	76.69	72.35
13.	319.29	258.89	272.02	241.95	198.84	198.10	176.98	152.77	126.72	103.61	86.77	77.41	72.95
14.	322.61	264.44	275.26	243.25	201.19	200.44	179.10	154.59	128.21	104.74	87.60	78.03	73.48
15.	325.49	269.49	278.03	244.32	202.99	202.23	180.71	155.99	129.35	105.58	88.17	78.45	73.83
16.	327.90	274.28	280.33	245.14	204.13	203.37	181.74	156.88	130.05	106.03	88.35	78.45	73.79
17.	329.07	278.56	281.68	245.82	204.40	203.64	182.01	157.12	130.22	106.02	87.90	77.26	71.95
18.	328.91	282.26	282.01	246.48	203.56	202.80	181.30	156.58	129.87	105.79	87.68	76.99	71.71
19.	326.07	285.13	280.50	247.32	201.19	200.45	179.27	154.98	128.81	105.31	87.57	76.98	71.70
20.	316.35	286.53	274.86	248.67	196.77	196.04	175.32	151.72	126.64	104.53	87.78	77.41	72.09
21.	289.25	284.76	260.00	251.20	189.85	189.10	167.94	145.08	122.28	103.53	89.34	79.69	74.43
22.	256.88	264.91	240.80	256.28	181.31	180.04	150.50	128.61	112.77	102.68	94.88	86.95	80.58

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          198.8427      C
CONCRETE THERMOCOUPLE T=          103.6083      C
AVERAGE CONCRETE TEMP. =          104.1764      C
AVERAGE CANISTER TEMP. =          288.8452      C
AVERAGE HEAT SHIELD TEMP. =          249.8818      C
AVERAGE LINER TEMP. =          182.4496      C
AVERAGE INNER GAP TEMP. =          246.1663      C
AVERAGE OUTER GAP TEMP. =          231.4772      C
AVE. CONCRETE EXTERIOR TEMP=          69.95987      C

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CONCRETE EXTERIOR H=          2.586332      W/SQM/C
INNER GAP HEAT TRANSFER COEF=          4.556833      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=          4.849859      W/SQM/C
INNER GAP AIR FLOW FRACTION =          0.6000000      C
TOTAL MASS FLOW RATE =          5.9801254E-02      kg/sec
INNER AIR VELOCITY =          0.2058078      m/sec
OUTER AIR VELOCITY =          0.2609777      m/sec
TOTAL TEMPERATURE RISE =          62.22222      C
INNER GAP AIR EXIT TEMP. =          264.9062      C
INNER GAP AIR EXIT TEMP. =          256.2844      C
PRESSURE DROP IN INNER GAP=          0.2030247      Velocity Head
PRESSURE DROP IN OUTER GAP=          0.4364133      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =          20868.36      Watts

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THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =      3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =      126.5690      Watts
*****

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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

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169.44 162.13 114.16 84.27 84.06 99.15
99.07 98.97 103.35 87.22 82.44 76.32
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 118.0000
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THE TEMPERATURES FOR THE SIDE NODES

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CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

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1.	172.06	189.19	172.45	192.13	134.66	133.80	112.55	94.18	79.03	68.92	62.82	59.57	57.85
2.	172.71	186.93	175.06	199.73	140.99	140.42	124.56	106.97	89.31	75.44	66.49	62.09	60.13
3.	225.53	190.67	199.11	207.93	149.20	148.63	132.94	115.09	96.35	80.67	70.14	64.95	62.68
4.	258.70	197.82	218.36	214.70	157.61	157.02	140.54	121.80	101.95	85.00	73.39	67.57	65.02
5.	275.47	206.06	230.50	220.16	165.31	164.69	147.36	127.65	106.72	88.67	76.17	69.81	67.00
6.	285.41	214.45	239.06	224.74	172.09	171.44	153.37	132.77	110.85	91.82	78.47	71.49	68.30
7.	292.82	222.66	246.04	228.70	178.04	177.37	158.65	137.28	114.48	94.60	80.55	73.12	69.72
8.	299.04	230.56	252.14	232.17	183.29	182.61	163.32	141.27	117.71	97.08	82.41	74.60	71.01
9.	304.67	238.10	257.66	235.20	187.96	187.25	167.46	144.82	120.57	99.26	84.04	75.89	72.12
10.	309.44	245.24	262.48	237.82	192.09	191.37	171.14	147.97	123.10	101.15	85.37	76.86	72.95
11.	313.80	251.95	266.87	240.07	195.75	195.02	174.40	150.75	125.32	102.74	86.30	77.14	72.73
12.	317.76	258.25	270.82	241.97	198.96	198.22	177.27	153.22	127.29	104.20	87.29	77.82	73.28
13.	321.33	264.13	274.35	243.54	201.73	200.98	179.76	155.36	129.03	105.51	88.23	78.52	73.87
14.	324.63	269.73	277.56	244.78	204.05	203.29	181.84	157.16	130.50	106.62	89.04	79.13	74.38
15.	327.49	274.79	280.29	245.75	205.80	205.04	183.42	158.52	131.60	107.43	89.58	79.52	74.71
16.	329.87	279.53	282.55	246.45	206.89	206.12	184.40	159.36	132.25	107.83	89.71	79.47	74.62
17.	330.99	283.72	283.84	246.97	207.09	206.33	184.60	159.53	132.36	107.74	89.17	78.16	72.65
18.	330.80	287.28	284.11	247.45	206.15	205.40	183.80	158.91	131.92	107.44	88.88	77.84	72.36
19.	327.91	289.95	282.53	248.10	203.68	202.93	181.67	157.21	130.77	106.88	88.72	77.79	72.32
20.	318.17	291.03	276.83	249.28	199.13	198.39	177.57	153.81	128.48	106.01	88.86	78.17	72.67
21.	291.13	288.68	261.91	251.79	192.04	191.29	170.01	146.96	123.93	104.88	90.35	80.41	74.98
22.	258.71	266.53	242.57	257.14	183.33	182.05	152.22	130.10	114.09	103.84	95.86	87.72	81.18

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AMBIENT TEMPERATURE =      37.77778      C
LINER THERMOCOUPLE T=      201.7284      C
CONCRETE THERMOCOUPLE T=      105.5074      C
AVERAGE CONCRETE TEMP. =      105.8275      C
AVERAGE CANISTER TEMP. =      290.8638      C
AVERAGE HEAT SHIELD TEMP. =      252.0850      C
AVERAGE LINER TEMP. =      185.0788      C
AVERAGE INNER GAP TEMP. =      250.8548      C
AVERAGE OUTER GAP TEMP. =      232.0009      C
AVE. CONCRETE EXTERIOR TEMP=      70.82619      C

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CONCRETE EXTERIOR H=      2.592085      W/SQM/C
INNER GAP HEAT TRANSFER COEF=      4.543367      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=      4.844881      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =      6.9185793E-02      kg/sec
INNER AIR VELOCITY =      0.1845547      m/sec
OUTER AIR VELOCITY =      0.2340273      m/sec
TOTAL TEMPERATURE RISE =      62.22222      C
INNER GAP AIR EXIT TEMP. =      266.5293      C
INNER GAP AIR EXIT TEMP. =      257.1429      C
PRESSURE DROP IN INNER GAP=      0.1848005      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.3920191      Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER =      20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =      3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =      126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

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170.97 163.37 114.99 84.62 84.40 99.82

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99.74 99.65 104.37 87.76 82.66 76.66

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 122.0000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	174.35	192.81	174.48	195.84	136.84	135.98	114.48	95.88	80.53	70.23	63.95	60.53	58.70
2.	175.07	190.45	177.15	203.34	143.27	142.69	126.70	108.92	91.03	76.90	67.70	63.09	61.02
3.	227.61	193.82	201.24	211.38	151.59	151.02	135.21	117.19	98.22	82.25	71.44	66.02	63.62
4.	260.67	200.51	220.53	218.02	160.12	159.52	142.93	124.03	103.94	86.68	74.76	68.70	66.01
5.	277.43	208.31	232.71	223.38	167.92	167.29	149.85	129.97	108.80	90.43	77.59	70.98	68.03
6.	287.38	216.32	241.31	227.88	174.77	174.12	155.93	135.17	112.99	93.63	79.92	72.66	69.30
7.	294.80	224.21	248.33	231.77	180.78	180.11	161.27	139.74	116.68	96.45	82.03	74.30	70.73
8.	301.04	231.86	254.44	235.16	186.08	185.39	165.99	143.77	119.94	98.96	83.91	75.80	72.03
9.	306.67	239.21	259.98	238.12	190.77	190.06	170.17	147.35	122.83	101.16	85.54	77.08	73.15
10.	311.44	246.19	264.81	240.67	194.91	194.20	173.86	150.51	125.37	103.04	86.86	78.04	73.96
11.	315.80	252.79	269.19	242.85	198.58	197.84	177.12	153.29	127.58	104.62	87.76	78.26	73.66
12.	319.75	259.01	273.14	244.69	201.78	201.04	179.99	155.75	129.55	106.06	88.73	78.91	74.19
13.	323.30	264.84	276.65	246.20	204.53	203.78	182.45	157.87	131.27	107.36	89.65	79.60	74.76
14.	326.58	270.40	279.83	247.41	206.82	206.06	184.51	159.65	132.72	108.45	90.44	80.19	75.26
15.	329.42	275.45	282.53	248.35	208.53	207.77	186.05	160.98	133.78	109.22	90.95	80.56	75.56
16.	331.76	280.19	284.74	249.03	209.56	208.79	186.97	161.76	134.38	109.57	91.03	80.45	75.43
17.	332.85	284.41	285.98	249.55	209.69	208.93	187.10	161.87	134.42	109.41	90.40	79.04	73.32
18.	332.61	288.00	286.18	250.03	208.67	207.91	186.22	161.17	133.91	109.04	90.05	78.67	72.99
19.	329.68	290.72	284.53	250.71	206.09	205.34	183.98	159.36	132.66	108.40	89.83	78.56	72.91
20.	319.92	291.92	278.75	251.91	201.41	200.67	179.75	155.82	130.25	107.43	89.90	78.90	73.23
21.	292.93	289.81	263.77	254.40	194.17	193.42	172.00	148.78	125.51	106.17	91.33	81.11	75.51
22.	260.46	268.61	244.28	259.59	185.30	184.00	153.87	131.54	115.35	104.96	96.80	88.45	81.75

AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 204.5279 C
CONCRETE THERMOCOUPLE T= 107.3582 C
AVERAGE CONCRETE TEMP. = 107.4354 C
AVERAGE CANISTER TEMP. = 292.8184 C
AVERAGE HEAT SHIELD TEMP. = 254.2470 C
AVERAGE LINER TEMP. = 187.6363 C
AVERAGE INNER GAP TEMP. = 251.1957 C
AVERAGE OUTER GAP TEMP. = 235.4144 C
AVE. CONCRETE EXTERIOR TEMP= 71.66940 C

CONCRETE EXTERIOR H= 2.597794 W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.568673 W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 4.864595 W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000 C
TOTAL MASS FLOW RATE = 6.7650951E-02 kg/sec
INNER AIR VELOCITY = 0.1953864 m/sec
OUTER AIR VELOCITY = 0.2477626 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 268.6132 C
INNER GAP AIR EXIT TEMP. = 259.5904 C
PRESSURE DROP IN INNER GAP= 0.1958585 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.4196829 Velocity Head

KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES

CAN...10..11..12..13..20..21..22..30..31..32..41

172.44	164.75	115.79	84.95	84.73	100.47
100.39	100.29	105.35	88.29	82.87	77.01

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 126.0000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	176.55	197.58	176.67	200.70	138.97	138.09	116.36	97.55	82.00	71.53	65.07	61.48	59.54
2.	177.33	195.10	179.38	207.96	145.48	144.90	128.78	110.82	92.72	78.34	68.89	64.08	61.90
3.	229.62	197.85	203.48	215.65	153.92	153.35	137.43	119.25	100.06	83.81	72.71	67.07	64.55
4.	262.58	203.71	222.76	222.01	162.56	161.96	145.26	126.20	105.89	88.34	76.10	69.81	66.98
5.	279.33	210.69	234.93	227.17	170.45	169.82	152.28	132.24	110.83	92.15	78.98	72.12	69.03
6.	289.29	217.97	243.53	231.49	177.38	176.73	158.44	137.51	115.09	95.40	81.34	73.80	70.29
7.	296.73	225.25	250.54	235.22	183.45	182.77	163.84	142.13	118.83	98.26	83.47	75.46	71.72
8.	302.98	232.39	256.65	238.48	188.79	188.10	168.59	146.21	122.13	100.79	85.37	76.96	73.03
9.	308.62	239.31	262.18	241.31	193.50	192.80	172.80	149.81	125.04	103.01	87.01	78.25	74.15
10.	313.40	245.96	267.00	243.74	197.66	196.94	176.51	152.98	127.58	104.89	88.32	79.19	74.94
11.	317.75	252.30	271.36	245.83	201.33	200.59	179.77	155.77	129.79	106.46	89.19	79.35	74.56
12.	321.69	258.32	275.29	247.58	204.52	203.78	182.63	158.22	131.75	107.88	90.13	79.98	75.07
13.	325.23	264.01	278.78	249.03	207.25	206.50	185.07	160.32	133.45	109.16	91.04	80.65	75.63
14.	328.49	269.49	281.93	250.19	209.51	208.75	187.10	162.08	134.87	110.23	91.80	81.23	76.11
15.	331.30	274.49	284.60	251.11	211.18	210.41	188.60	163.36	135.90	110.97	92.29	81.56	76.39
16.	333.60	279.22	286.76	251.80	212.15	211.38	189.47	164.09	136.45	111.27	92.31	81.41	76.22
17.	334.66	283.46	287.96	252.35	212.21	211.44	189.53	164.13	136.42	111.03	91.60	79.89	73.97
18.	334.37	287.12	288.11	252.89	211.10	210.34	188.56	163.35	135.83	110.59	91.18	79.46	73.60
19.	331.40	289.98	286.41	253.61	208.42	207.66	186.22	161.44	134.49	109.87	90.90	79.31	73.49
20.	321.62	291.41	280.58	254.84	203.61	202.87	181.86	157.77	131.95	108.80	90.91	79.61	73.76
21.	294.67	289.80	265.57	257.26	196.22	195.46	173.92	150.53	127.04	107.42	92.26	81.78	76.02
22.	262.14	270.46	246.02	262.14	187.18	185.87	155.47	132.93	116.57	106.03	97.70	89.16	82.29

AMBIENT TEMPERATURE =	37.77778	C
LINER THERMOCOUPLE T=	207.2503	C
CONCRETE THERMOCOUPLE T=	109.1608	C
AVERAGE CONCRETE TEMP. =	109.0005	C
AVERAGE CANISTER TEMP. =	294.7194	C
AVERAGE HEAT SHIELD TEMP. =	256.3333	C
AVERAGE LINER TEMP. =	190.1190	C
AVERAGE INNER GAP TEMP. =	251.8514	C
AVERAGE OUTER GAP TEMP. =	238.7262	C
AVE. CONCRETE EXTERIOR TEMP=	72.48956	C

CONCRETE EXTERIOR H=	2.603399	W/SQM/C
INNER GAP HEAT TRANSFER COEF=	4.534768	W/SQM/C
OUTER GAP HEAT TRANSFER COEF=	4.858465	W/SQM/C
INNER GAP AIR FLOW FRACTION =	0.6000000	C
TOTAL MASS FLOW RATE =	5.3758115E-02	kg/sec
INNER AIR VELOCITY =	0.2151015	m/sec
OUTER AIR VELOCITY =	0.2727627	m/sec
TOTAL TEMPERATURE RISE =	62.22222	C
INNER GAP AIR EXIT TEMP. =	270.4613	C
INNER GAP AIR EXIT TEMP. =	262.1424	C
PRESSURE DROP IN INNER GAP=	0.2160701	Velocity Head
PRESSURE DROP IN OUTER GAP=	0.4670294	Velocity Head

KK = 3

THE TOTAL HEAT INPUT FROM CANISTER =	20868.36	Watts
THE TOTAL HEAT INPUT FROM SIDE =	2630.646	Watts
THE TOTAL HEAT INPUT FROM LID =	3028.957	Watts
THE TOTAL HEAT INPUT FROM BASE =	126.5690	Watts

THE TEMPERATURES FOR THE CASKLID NODES

CAN...10...11...12...13...20...21...22...30...31...32...41

173.84	165.95	116.55	85.27	85.04	101.09
101.01	100.91	106.29	88.79	83.07	77.35

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 130.0000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	178.70	197.14	178.48	200.20	141.04	140.16	118.21	99.20	83.46	72.80	66.17	62.42	60.36
2.	179.53	194.76	181.25	207.79	147.64	147.06	130.82	112.69	94.38	79.75	70.06	65.05	62.76
3.	231.57	198.11	205.43	215.91	156.19	155.62	139.60	121.27	101.86	85.34	73.96	68.10	65.45
4.	264.44	204.77	224.77	222.61	164.94	164.34	147.55	128.33	107.80	89.95	77.42	70.89	67.94
5.	281.17	212.55	237.01	228.01	172.92	172.29	154.66	134.46	112.82	93.84	80.35	73.24	70.01
6.	291.15	220.56	245.66	232.53	179.93	179.27	160.89	139.80	117.15	97.14	82.73	74.91	71.24
7.	298.61	228.45	252.73	236.42	186.05	185.37	166.34	144.47	120.93	100.03	84.88	76.59	72.69
8.	304.87	236.10	258.87	239.79	191.43	190.73	171.13	148.59	124.26	102.59	86.80	78.10	74.00
9.	310.52	243.45	264.42	242.71	196.17	195.46	175.36	152.21	127.19	104.81	88.44	79.39	75.12

10.	315.30	250.43	269.25	245.21	200.34	199.62	179.08	155.40	129.74	106.70	89.74	80.31	75.90
11.	319.65	257.03	273.61	247.34	204.00	203.27	182.35	158.18	131.95	108.25	90.58	80.41	75.44
12.	323.58	263.25	277.53	249.10	207.19	206.44	185.19	160.62	133.89	109.66	91.50	81.02	75.92
13.	327.11	269.06	281.00	250.52	209.89	209.14	187.62	162.71	135.58	110.92	92.39	81.68	76.47
14.	330.35	274.61	284.12	251.63	212.12	211.36	189.62	164.43	136.97	111.96	93.13	82.23	76.93
15.	333.12	279.64	286.74	252.46	213.74	212.98	191.08	165.68	137.97	112.66	93.58	82.54	77.18
16.	335.40	284.34	288.86	253.03	214.66	213.89	191.89	166.36	138.46	112.91	93.55	82.34	76.97
17.	336.41	288.51	289.99	253.45	214.65	213.88	191.87	166.33	138.36	112.61	92.76	80.71	74.60
18.	336.08	292.05	290.07	253.83	213.46	212.69	190.83	165.46	137.70	112.09	92.28	80.23	74.18
19.	333.07	294.71	288.29	254.37	210.67	209.91	188.38	163.45	136.26	111.29	91.93	80.04	74.04
20.	323.26	295.83	282.37	255.47	205.73	204.99	183.89	159.65	133.60	110.13	91.88	80.28	74.28
21.	296.35	293.65	267.28	257.89	198.19	197.43	175.77	152.22	128.51	108.62	93.17	82.42	76.51
22.	263.77	272.12	247.54	263.05	189.00	187.68	157.00	134.26	117.75	107.06	98.58	89.83	82.82

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          209.8937      C
CONCRETE THERMOCOUPLE T=        110.9158      C
AVERAGE CONCRETE TEMP. =        110.5238      C
AVERAGE CANISTER TEMP. =        296.5645      C
AVERAGE HEAT SHIELD TEMP. =      258.3654      C
AVERAGE LINER TEMP. =          192.5323      C
AVERAGE INNER GAP TEMP. =        255.3266      C
AVERAGE OUTER GAP TEMP. =        239.6643      C
AVE. CONCRETE EXTERIOR TEMP=      73.28694      C

CONCRETE EXTERIOR H=            2.608308      W/SQM/C
INNER GAP HEAT TRANSFER COEF=     4.563261      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=     4.872574      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =           6.4446032E-02  kg/sec
INNER AIR VELOCITY =             0.1946740      m/sec
OUTER AIR VELOCITY =             0.2468593      m/sec
TOTAL TEMPERATURE RISE =          62.22222      C
INNER GAP AIR EXIT TEMP. =        272.1190      C
INNER GAP AIR EXIT TEMP. =        263.0527      C
PRESSURE DROP IN INNER GAP=       0.1977107      Velocity Head
PRESSURE DROP IN OUTER GAP=       0.4239630      Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646      Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

175.18	167.16	117.28	85.57	85.34	101.69
101.61	101.51	107.20	89.27	83.27	77.64

THE CASE FOR QTOTAL = 20000.0 Watts

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THE TIME IS: 134.0000
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THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	180.80	198.45	180.52	201.49	143.09	142.20	120.02	100.81	84.89	74.06	67.26	63.34	61.18
2.	181.68	196.12	183.33	209.20	149.77	149.19	132.82	114.53	96.00	81.15	71.21	66.01	63.60
3.	233.48	199.66	207.51	217.47	158.43	157.85	141.72	123.24	103.62	86.84	75.18	69.11	66.34
4.	266.26	206.58	226.85	224.29	167.27	166.67	149.78	130.41	109.67	91.54	78.71	71.95	68.87
5.	282.98	214.62	239.10	229.79	175.34	174.71	156.98	136.63	114.77	95.49	81.69	74.33	70.97
6.	292.96	222.85	247.77	234.37	182.41	181.76	163.27	142.04	119.16	98.83	84.09	76.00	72.18
7.	300.44	230.93	254.84	238.30	188.59	187.91	168.78	146.76	122.98	101.76	86.26	77.69	73.63
8.	306.71	238.74	260.99	241.71	194.00	193.30	173.61	150.91	126.35	104.34	88.19	79.21	74.95
9.	312.36	246.21	266.54	244.64	198.76	198.05	177.86	154.56	129.29	106.58	89.84	80.49	76.07
10.	317.14	253.29	271.36	247.14	202.94	202.22	181.59	157.75	131.85	108.46	91.12	81.40	76.83
11.	321.49	259.95	275.71	249.26	206.60	205.87	184.85	160.53	134.05	109.99	91.93	81.44	76.29
12.	325.41	266.21	279.60	250.99	209.78	209.03	187.69	162.95	135.98	111.38	92.83	82.03	76.75
13.	328.92	272.05	283.05	252.38	212.46	211.70	190.09	165.02	137.65	112.62	93.70	82.67	77.28
14.	332.14	277.60	286.14	253.44	214.65	213.89	192.06	166.72	139.01	113.64	94.42	83.20	77.73
15.	334.89	282.61	288.73	254.20	216.24	215.47	193.48	167.93	139.97	114.31	94.83	83.48	77.96
16.	337.13	287.29	290.80	254.69	217.10	216.32	194.23	168.55	140.41	114.51	94.75	83.24	77.71
17.	338.10	291.41	291.89	255.00	217.02	216.25	194.15	168.45	140.25	114.13	93.88	81.51	75.21
18.	337.73	294.88	291.91	255.27	215.74	214.97	193.02	167.50	139.50	113.54	93.34	80.97	74.75
19.	334.68	297.44	290.07	255.73	212.85	212.09	190.47	165.39	137.97	112.67	92.93	80.73	74.57

20.	324.84	298.43	284.09	256.75	207.79	207.04	185.85	161.47	135.19	111.41	92.81	80.94	74.77
21.	297.97	296.04	268.95	259.12	200.11	199.35	177.57	153.85	129.93	109.78	94.04	83.04	76.98
22.	265.33	273.67	249.10	264.36	190.77	189.44	158.49	135.55	118.88	108.06	99.41	90.49	83.32

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          212.4614      C
CONCRETE THERMOCOUPLE T=        112.6237      C
AVERAGE CONCRETE TEMP. =        112.0065      C
AVERAGE CANISTER TEMP. =        298.3537      C
AVERAGE HEAT SHIELD TEMP. =     260.3427      C
AVERAGE LINER TEMP. =           194.8833      C
AVERAGE INNER GAP TEMP. =       257.7719      C
AVERAGE OUTER GAP TEMP. =       241.3264      C
AVE. CONCRETE EXTERIOR TEMP=     74.06204      C

CONCRETE EXTERIOR H=             2.613139      W/SQM/C
INNER GAP HEAT TRANSFER COEF=    4.569746      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=    4.878828      W/SQM/C
INNER GAP AIR FLOW FRACTION =    0.6000000      C
  TOTAL MASS FLOW RATE =       7.0011802E-02  kg/sec
  INNER AIR VELOCITY =         0.1882820      m/sec
  OUTER AIR VELOCITY =         0.2387538      m/sec
TOTAL TEMPERATURE RISE =         62.22222      C
INNER GAP AIR EXIT TEMP. =       273.6690      C
INNER GAP AIR EXIT TEMP. =       264.3579      C
PRESSURE DROP IN INNER GAP=      0.1926956      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.4122502      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =       2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =        3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =       126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

176.47	168.29	117.99	85.86	85.63	102.27
102.18	102.08	108.07	89.74	83.46	77.94

THE CASE FOR QTOTAL = 20000.0 Watts

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THE TIME IS:    138.0000
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THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1.	182.83	192.61	182.34	195.09	145.08	144.18	121.80	102.40	86.30	75.30	68.33	64.25	61.98
2.	183.77	191.00	185.21	203.69	151.85	151.26	134.78	116.33	97.60	82.51	72.34	66.94	64.43
3.	235.34	197.22	209.44	213.31	160.60	160.02	143.81	125.18	105.35	88.31	76.38	70.10	67.21
4.	268.03	207.47	228.80	221.20	169.55	168.94	151.96	132.45	111.50	93.09	79.97	72.99	69.78
5.	284.74	218.57	241.09	227.49	177.70	177.07	159.24	138.76	116.68	97.11	83.00	75.39	71.90
6.	294.73	229.31	249.78	232.70	184.84	184.18	165.61	144.22	121.12	100.49	85.42	77.07	73.09
7.	302.22	239.34	256.88	237.15	191.06	190.38	171.16	148.99	124.99	103.45	87.61	78.76	74.55
8.	308.50	248.61	263.04	241.00	196.51	195.81	176.02	153.17	128.38	106.05	89.55	80.29	75.87
9.	314.16	257.14	268.59	244.31	201.29	200.58	180.30	156.84	131.34	108.30	91.20	81.57	76.99
10.	318.94	264.91	273.42	247.11	205.48	204.75	184.03	160.04	133.90	110.18	92.48	82.47	77.73
11.	323.28	271.98	277.76	249.44	209.14	208.40	187.29	162.81	136.09	111.69	93.25	82.45	77.12
12.	327.20	278.41	281.63	251.30	212.30	211.54	190.11	165.22	138.01	113.07	94.12	83.01	77.56
13.	330.69	284.24	285.06	252.70	214.96	214.20	192.50	167.27	139.66	114.29	94.97	83.63	78.07
14.	333.88	289.63	288.12	253.66	217.12	216.35	194.43	168.94	141.00	115.28	95.67	84.15	78.50
15.	336.60	294.35	290.67	254.16	218.65	217.88	195.81	170.11	141.91	115.91	96.05	84.40	78.71
16.	338.81	298.63	292.70	254.24	219.46	218.68	196.51	170.68	142.30	116.05	95.92	84.11	78.41
17.	339.74	302.23	293.73	253.93	219.31	218.53	196.36	170.51	142.07	115.60	94.97	82.28	75.80
18.	339.33	305.04	293.69	253.42	217.94	217.17	195.14	169.47	141.24	114.95	94.36	81.69	75.29
19.	336.24	306.76	291.79	252.95	214.95	214.19	192.49	167.27	139.63	113.99	93.89	81.41	75.08
20.	326.37	306.49	285.75	253.07	209.77	209.02	187.75	163.22	136.73	112.64	93.72	81.57	75.25
21.	299.54	301.89	270.57	254.83	201.95	201.18	179.30	155.42	131.30	110.90	94.88	83.63	77.43
22.	266.84	271.94	250.60	260.44	192.47	191.12	159.93	136.79	119.97	109.02	100.22	91.11	83.80

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          214.9572      C
CONCRETE THERMOCOUPLE T=        114.2851      C
AVERAGE CONCRETE TEMP. =        113.4490      C
AVERAGE CANISTER TEMP. =        300.0952      C

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AVERAGE HEAT SHIELD TEMP. =      262.2456      C
AVERAGE LINER TEMP. =          197.1653      C
AVERAGE INNER GAP TEMP. =        259.1824      C
AVERAGE OUTER GAP TEMP. =        244.1394      C
AVE. CONCRETE EXTERIOR TEMP=      74.81498      C

CONCRETE EXTERIOR H=            2.618150      W/SQM/C
INNER GAP HEAT TRANSFER COEF=    4.904363      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=    5.097152      W/SQM/C
INNER GAP AIR FLOW FRACTION =    0.6000000      C
TOTAL MASS FLOW RATE =          5.2387394E-02  kg/sec
INNER AIR VELOCITY =             0.1397445      m/sec
OUTER AIR VELOCITY =             0.1772052      m/sec
TOTAL TEMPERATURE RISE =         62.22222      C
INNER GAP AIR EXIT TEMP. =        271.9371      C
INNER GAP AIR EXIT TEMP. =        260.4373      C
PRESSURE DROP IN INNER GAP=      0.1436544      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.3087586      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =        2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =          3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =         126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

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177.70 169.61 118.67 86.14 85.91 102.82
102.73 102.63 108.91 90.19 83.64 78.19
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 142.0000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1.	184.81	202.50	184.30	205.60	147.03	146.12	123.54	103.96	87.69	76.53	69.39	65.15	62.77
2.	185.79	200.14	187.20	213.37	153.87	153.28	136.69	118.09	99.17	83.85	73.45	67.87	65.24
3.	237.15	203.68	211.44	221.71	162.73	162.15	145.84	127.07	107.05	89.75	77.56	71.06	68.07
4.	269.75	210.60	230.81	228.57	171.77	171.16	154.09	134.45	113.29	94.62	81.21	74.00	70.67
5.	286.45	218.65	243.09	234.08	180.00	179.37	161.45	140.83	118.54	98.69	84.27	76.44	72.82
6.	296.46	226.89	251.79	238.67	187.20	186.54	167.88	146.35	123.04	102.11	86.72	78.10	73.98
7.	303.96	234.99	258.89	242.60	193.47	192.79	173.48	151.17	126.95	105.10	88.93	79.80	75.44
8.	310.26	242.81	265.05	245.98	198.95	198.25	178.38	155.38	130.37	107.72	90.88	81.34	76.77
9.	315.92	250.30	270.59	248.88	203.75	203.03	182.67	159.07	133.34	109.98	92.53	82.62	77.88
10.	320.70	257.38	275.41	251.33	207.95	207.22	186.41	162.27	135.90	111.85	93.79	83.50	78.61
11.	325.04	264.04	279.73	253.38	211.60	210.86	189.66	165.04	138.08	113.35	94.53	83.43	77.92
12.	328.94	270.29	283.59	255.05	214.75	213.99	192.47	167.43	139.98	114.70	95.38	83.96	78.34
13.	332.42	276.12	286.99	256.36	217.38	216.62	194.83	169.46	141.61	115.90	96.21	84.57	78.84
14.	335.59	281.65	290.03	257.32	219.51	218.74	196.74	171.10	142.92	116.87	96.88	85.06	79.25
15.	338.28	286.62	292.54	257.99	221.00	220.22	198.07	172.23	143.80	117.46	97.23	85.29	79.43
16.	340.45	291.25	294.53	258.38	221.74	220.97	198.71	172.74	144.14	117.55	97.05	84.95	79.10
17.	341.35	295.32	295.52	258.59	221.53	220.75	198.49	172.50	143.83	117.03	96.02	83.02	76.36
18.	340.89	298.72	295.43	258.76	220.08	219.30	197.19	171.39	142.93	116.30	95.35	82.38	75.81
19.	337.75	301.22	293.47	259.12	216.99	216.23	194.44	169.08	141.22	115.28	94.82	82.05	75.57
20.	327.86	302.11	287.37	260.07	211.69	210.94	189.58	164.91	138.22	113.84	94.59	82.17	75.71
21.	301.05	299.62	272.13	262.39	203.74	202.96	180.97	156.94	132.62	111.98	95.69	84.21	77.87
22.	268.29	276.97	252.08	267.61	194.11	192.76	161.31	137.99	121.02	109.94	101.00	91.71	84.26

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          217.3825      C
CONCRETE THERMOCOUPLE T=        115.9007      C
AVERAGE CONCRETE TEMP. =         114.8522      C
AVERAGE CANISTER TEMP. =         301.7904      C
AVERAGE HEAT SHIELD TEMP. =       264.1230      C
AVERAGE LINER TEMP. =            199.3838      C
AVERAGE INNER GAP TEMP. =         258.6636      C
AVERAGE OUTER GAP TEMP. =         247.6727      C
AVE. CONCRETE EXTERIOR TEMP=       75.54641      C

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CONCRETE EXTERIOR H=            2.622801      W/SQM/C
INNER GAP HEAT TRANSFER COEF=    4.676403      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=    4.968861      W/SQM/C
INNER GAP AIR FLOW FRACTION =    0.6000000      C

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TOTAL MASS FLOW RATE = 4.7782149E-02 kg/sec
INNER AIR VELOCITY = 0.1911899 m/sec
OUTER AIR VELOCITY = 0.2424413 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 276.9676 C
INNER GAP AIR EXIT TEMP. = 267.6108 C
PRESSURE DROP IN INNER GAP= 0.1962200 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.4272304 Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

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178.88 170.81 119.32 86.41 86.17 103.35
103.26 103.16 109.73 90.62 83.81 78.51
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 146.0000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1.	186.74	206.43	186.01	209.60	148.94	148.02	125.25	105.49	89.05	77.73	70.43	66.03	63.54
2.	187.77	203.97	188.96	217.19	155.86	155.26	138.57	119.82	100.71	85.17	74.54	68.77	66.04
3.	238.92	206.96	213.27	225.25	164.81	164.22	147.83	128.92	108.71	91.16	78.72	72.01	68.90
4.	271.44	213.16	232.68	231.89	173.94	173.33	156.18	136.40	115.04	96.10	82.42	74.99	71.54
5.	288.12	220.51	245.01	237.24	182.25	181.61	163.62	142.85	120.37	100.24	85.52	77.45	73.70
6.	298.14	228.14	253.74	241.68	189.51	188.84	170.10	148.44	124.91	103.70	87.99	79.11	74.85
7.	305.66	235.72	260.86	245.48	195.82	195.14	175.74	153.29	128.86	106.71	90.21	80.82	76.31
8.	311.96	243.12	267.04	248.74	201.33	200.63	180.67	157.53	132.30	109.35	92.17	82.36	77.65
9.	317.63	250.27	272.59	251.53	206.15	205.43	184.98	161.23	135.29	111.62	93.83	83.65	78.75
10.	322.41	257.09	277.40	253.88	210.35	209.62	188.73	164.44	137.85	113.48	95.07	84.50	79.46
11.	326.74	263.56	281.72	255.84	214.00	213.25	191.97	167.20	140.02	114.96	95.77	84.38	78.70
12.	330.63	269.67	285.56	257.43	217.13	216.37	194.77	169.59	141.91	116.29	96.60	84.89	79.10
13.	334.09	275.40	288.94	258.68	219.74	218.97	197.11	171.59	143.51	117.47	97.41	85.47	79.58
14.	337.24	280.88	291.94	259.61	221.83	221.06	198.98	173.20	144.80	118.41	98.06	85.95	79.97
15.	339.90	285.84	294.41	260.26	223.27	222.50	200.26	174.28	145.63	118.97	98.38	86.15	80.13
16.	342.04	290.48	296.35	260.65	223.96	223.18	200.85	174.74	145.91	119.01	98.14	85.76	79.76
17.	342.90	294.60	297.28	260.89	223.68	222.90	200.56	174.43	145.54	118.42	97.04	83.74	76.91
18.	342.40	298.08	297.13	261.11	222.15	221.37	199.18	173.24	144.57	117.62	96.30	83.04	76.32
19.	339.22	300.70	295.09	261.53	218.96	218.19	196.34	170.84	142.77	116.51	95.72	82.68	76.04
20.	329.29	301.82	288.92	262.52	213.55	212.80	191.36	166.55	139.65	114.99	95.42	82.76	76.15
21.	302.51	299.76	273.61	264.82	205.45	204.68	182.58	158.40	133.90	113.02	96.47	84.76	78.28
22.	269.70	278.61	253.41	269.81	195.69	194.33	162.64	139.14	122.04	110.83	101.75	92.29	84.71

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*****
AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 219.7389 C
CONCRETE THERMOCOUPLE T= 117.4715 C
AVERAGE CONCRETE TEMP. = 116.2175 C
AVERAGE CANISTER TEMP. = 303.4384 C
AVERAGE HEAT SHIELD TEMP. = 265.9336 C
AVERAGE LINER TEMP. = 201.5419 C
AVERAGE INNER GAP TEMP. = 262.2511 C
AVERAGE OUTER GAP TEMP. = 248.0033 C
AVE. CONCRETE EXTERIOR TEMP= 76.25669 C

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CONCRETE EXTERIOR H= 2.626755 W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.538336 W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 4.884719 W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000 C
TOTAL MASS FLOW RATE = 5.0731707E-02 kg/sec
INNER AIR VELOCITY = 0.2029919 m/sec
OUTER AIR VELOCITY = 0.2574070 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 278.6145 C
INNER GAP AIR EXIT TEMP. = 269.8087 C
PRESSURE DROP IN INNER GAP= 0.2106818 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.4540818 Velocity Head

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KK = 3

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THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =        3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =       126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

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180.01 171.48 119.95 86.67 86.43 103.86
103.77 103.67 110.51 91.03 83.98 78.78
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS:    150.0000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1. 188.61 208.54 187.80 211.72 150.81 149.89 126.92 107.00 90.39 78.92 71.46 66.90 64.30
2. 189.69 206.06 190.79 219.32 157.81 157.21 140.40 121.51 102.22 86.47 75.61 69.66 66.82
3. 240.64 208.99 215.11 227.38 166.85 166.26 149.77 130.74 110.33 92.55 79.85 72.94 69.71
4. 273.08 215.11 234.53 234.01 176.07 175.45 158.21 138.30 116.76 97.56 83.61 75.96 72.38
5. 289.75 222.38 246.87 239.35 184.45 183.81 165.73 144.83 122.15 101.75 86.75 78.45 74.57
6. 299.79 229.94 255.63 243.78 191.76 191.10 172.27 150.47 126.74 105.24 89.23 80.10 75.69
7. 307.31 237.48 262.76 247.55 198.11 197.43 177.95 155.37 130.72 108.29 91.46 81.81 77.16
8. 313.63 244.83 268.95 250.79 203.65 202.94 182.91 159.63 134.19 110.94 93.43 83.36 78.50
9. 319.29 251.94 274.50 253.55 208.48 207.76 187.23 163.35 137.20 113.21 95.09 84.64 79.60
10. 324.08 258.73 279.31 255.87 212.69 211.95 190.98 166.56 139.75 115.07 96.32 85.48 80.29
11. 328.40 265.18 283.62 257.80 216.33 215.58 194.22 169.31 141.91 116.53 96.99 85.30 79.46
12. 332.28 271.27 287.44 259.35 219.44 218.68 197.00 171.68 143.78 117.84 97.79 85.78 79.83
13. 335.72 276.98 290.80 260.55 222.03 221.26 199.32 173.66 145.36 119.00 98.58 86.35 80.30
14. 338.85 282.44 293.77 261.44 224.08 223.31 201.15 175.24 146.62 119.91 99.20 86.81 80.67
15. 341.48 287.39 296.21 262.04 225.48 224.70 202.39 176.28 147.41 120.43 99.49 86.98 80.81
16. 343.58 292.02 298.10 262.39 226.12 225.34 202.93 176.68 147.64 120.42 99.20 86.55 80.40
17. 344.40 296.11 298.99 262.59 225.76 224.98 202.57 176.31 147.20 119.76 98.02 84.43 77.43
18. 343.86 299.58 298.78 262.77 224.15 223.38 201.11 175.03 146.15 118.89 97.23 83.69 76.81
19. 340.64 302.18 296.68 263.16 220.87 220.10 198.17 172.54 144.26 117.71 96.59 83.28 76.50
20. 330.69 303.29 290.44 264.12 215.35 214.60 193.07 168.13 141.03 116.10 96.23 83.32 76.57
21. 303.93 301.25 275.09 266.39 207.12 206.35 184.14 159.82 135.13 114.02 97.21 85.28 78.68
22. 271.05 280.12 254.78 271.35 197.23 195.86 163.93 140.26 123.01 111.69 102.47 92.85 85.14
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AMBIENT TEMPERATURE =      37.77778      C
LINER THERMOCOUPLE T=      222.0298      C
CONCRETE THERMOCOUPLE T=    118.9983      C
AVERAGE CONCRETE TEMP. =    117.5452      C
AVERAGE CANISTER TEMP. =    305.0410      C
AVERAGE HEAT SHIELD TEMP. =  267.7038      C
AVERAGE LINER TEMP. =      203.6445      C
AVERAGE INNER GAP TEMP. =    263.9089      C
AVERAGE OUTER GAP TEMP. =    249.9080      C
AVE. CONCRETE EXTERIOR TEMP=   76.94647      C

CONCRETE EXTERIOR H=         2.630866      W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.533920      W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 4.887976      W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000      C
TOTAL MASS FLOW RATE =      5.1075425E-02  kg/sec
INNER AIR VELOCITY =        0.2043673      m/sec
OUTER AIR VELOCITY =        0.2591510      m/sec
TOTAL TEMPERATURE RISE =      62.22222      C
INNER GAP AIR EXIT TEMP. =    280.1188      C
INNER GAP AIR EXIT TEMP. =    271.3506      C
PRESSURE DROP IN INNER GAP=   0.2132066      Velocity Head
PRESSURE DROP IN OUTER GAP=   0.4599406      Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =        3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =       126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

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181.09 172.47 120.55 86.91 86.67 104.35
104.26 104.16 111.26 91.43 84.14 79.04
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THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 154.0000

THE TEMPERATURES FOR THE SIDE NODES

CAN...AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	190.46	205.36	189.42	208.33	152.65	151.73	128.57	108.47	91.71	80.09	72.47	67.76	65.05
2.	191.58	203.20	192.46	216.54	159.71	159.11	142.20	123.17	103.70	87.74	76.67	70.53	67.58
3.	242.34	207.45	216.83	225.44	168.84	168.25	151.68	132.51	111.93	93.90	80.96	73.85	70.51
4.	274.69	215.28	236.29	232.75	178.14	177.53	160.21	140.17	118.44	98.99	84.76	76.91	73.21
5.	291.35	224.21	248.68	238.58	186.59	185.95	167.79	146.76	123.89	103.23	87.94	79.42	75.42
6.	301.39	233.22	257.47	243.41	193.96	193.29	174.38	152.45	128.53	106.76	90.43	81.06	76.51
7.	308.93	241.95	264.63	247.51	200.35	199.66	180.11	157.39	132.55	109.82	92.68	82.78	77.99
8.	315.25	250.27	270.83	251.01	205.91	205.20	185.09	161.68	136.04	112.49	94.66	84.33	79.32
9.	320.92	258.15	276.40	253.99	210.76	210.03	189.42	165.41	139.05	114.77	96.32	85.61	80.42
10.	325.70	265.51	281.20	256.47	214.96	214.23	193.18	168.62	141.60	116.62	97.53	86.43	81.10
11.	330.01	272.38	285.50	258.50	218.60	217.85	196.41	171.36	143.75	118.05	98.17	86.19	80.19
12.	333.88	278.74	289.31	260.09	221.69	220.93	199.17	173.71	145.60	119.35	98.95	86.65	80.54
13.	337.30	284.61	292.64	261.28	224.25	223.49	201.46	175.67	147.16	120.48	99.71	87.20	80.99
14.	340.41	290.12	295.58	262.07	226.27	225.50	203.27	177.21	148.38	121.37	100.31	87.64	81.35
15.	343.01	295.02	297.98	262.49	227.63	226.85	204.46	178.21	149.14	121.85	100.57	87.78	81.46
16.	345.08	299.53	299.83	262.59	228.21	227.42	204.94	178.56	149.31	121.78	100.23	87.31	81.01
17.	345.86	303.41	300.65	262.45	227.79	227.00	204.52	178.12	148.81	121.06	98.97	85.10	77.94
18.	345.28	306.57	300.38	262.22	226.10	225.32	202.98	176.77	147.68	120.12	98.12	84.31	77.27
19.	342.01	308.74	298.21	262.16	222.72	221.95	199.94	174.19	145.71	118.87	97.42	83.86	76.94
20.	332.03	309.19	291.90	262.72	217.09	216.33	194.73	169.67	142.37	117.17	97.01	83.86	76.98
21.	305.29	305.97	276.49	264.80	208.74	207.96	185.65	161.19	136.32	114.99	97.94	85.79	79.07
22.	272.36	280.34	256.03	270.17	198.72	197.33	165.18	141.33	123.96	112.51	103.16	93.39	85.55

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          224.2548      C
CONCRETE THERMOCOUPLE T=        120.4821      C
AVERAGE CONCRETE TEMP. =        118.8370      C
AVERAGE CANISTER TEMP. =         306.5988      C
AVERAGE HEAT SHIELD TEMP. =      269.4118      C
AVERAGE LINER TEMP. =           205.6906      C
AVERAGE INNER GAP TEMP. =        269.4747      C
AVERAGE OUTER GAP TEMP. =        248.9112      C
AVE. CONCRETE EXTERIOR TEMP=      77.61610      C

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CONCRETE EXTERIOR H=           2.634401      W/SQM/C
INNER GAP HEAT TRANSFER COEF=    4.541260      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=    4.883173      W/SQM/C
INNER GAP AIR FLOW FRACTION =     0.6000000      C
TOTAL MASS FLOW RATE =           6.2330421E-02  kg/sec
INNER AIR VELOCITY =             0.1662678      m/sec
OUTER AIR VELOCITY =             0.2108384      m/sec
TOTAL TEMPERATURE RISE =         62.22222      C
INNER GAP AIR EXIT TEMP. =        280.3377      C
INNER GAP AIR EXIT TEMP. =        270.1686      C
PRESSURE DROP IN INNER GAP=       0.1764727      Velocity Head
PRESSURE DROP IN OUTER GAP=       0.3730101      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =        2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =         3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =         126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES

CAN...10...11...12...13...20...21...22...30...31...32...41

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182.13 173.15 121.13 87.15 86.91 104.82
104.73 104.63 111.99 91.81 84.29 79.26
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THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 158.0000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	192.23	209.19	190.95	212.31	154.43	153.50	130.18	109.92	93.01	81.24	73.46	68.60	65.79
2.	193.40	206.86	194.04	220.33	161.56	160.96	143.96	124.80	105.16	88.99	77.70	71.38	68.33
3.	243.97	210.51	218.48	228.92	170.77	170.18	153.54	134.25	113.49	95.23	82.04	74.74	71.29
4.	276.26	217.60	237.99	235.98	180.16	179.54	162.15	141.99	120.08	100.38	85.90	77.83	74.02
5.	292.91	225.82	250.43	241.64	188.68	188.04	169.80	148.65	125.59	104.67	89.10	80.36	76.24
6.	302.96	234.22	259.26	246.31	196.10	195.43	176.45	154.39	130.28	108.23	91.61	82.00	77.31
7.	310.51	242.47	266.46	250.27	202.53	201.84	182.21	159.36	134.32	111.32	93.87	83.72	78.79
8.	316.84	250.42	272.69	253.64	208.11	207.40	187.21	163.68	137.83	114.01	95.86	85.28	80.13
9.	322.52	258.00	278.27	256.50	212.97	212.25	191.56	167.42	140.85	116.29	97.51	86.55	81.22
10.	327.29	265.16	283.08	258.87	217.18	216.44	195.32	170.63	143.41	118.13	98.72	87.35	81.88
11.	331.60	271.88	287.37	260.81	220.81	220.06	198.54	173.36	145.54	119.54	99.32	87.06	80.90
12.	335.46	278.15	291.17	262.33	223.89	223.12	201.28	175.69	147.37	120.81	100.07	87.50	81.23
13.	338.87	283.98	294.47	263.46	226.42	225.65	203.55	177.63	148.91	121.92	100.82	88.03	81.67
14.	341.94	289.48	297.38	264.23	228.40	227.63	205.32	179.14	150.10	122.78	101.39	88.45	82.01
15.	344.52	294.40	299.74	264.66	229.71	228.93	206.47	180.09	150.81	123.22	101.61	88.56	82.10
16.	346.55	298.95	301.54	264.80	230.23	229.45	206.89	180.39	150.93	123.10	101.23	88.04	81.61
17.	347.29	302.90	302.30	264.73	229.74	228.96	206.40	179.88	150.36	122.31	99.89	85.74	78.43
18.	346.66	306.16	301.96	264.62	227.97	227.19	204.78	178.45	149.16	121.31	98.98	84.91	77.73
19.	343.35	308.47	299.72	264.72	224.50	223.73	201.66	175.78	147.11	119.99	98.23	84.42	77.36
20.	333.34	309.15	293.33	265.43	218.76	218.01	196.33	171.14	143.67	118.21	97.76	84.38	77.37
21.	306.62	306.37	277.84	267.59	210.28	209.50	187.10	162.51	137.46	115.92	98.63	86.28	79.43
22.	273.61	282.45	257.21	272.81	200.13	198.74	166.37	142.37	124.87	113.31	103.83	93.90	85.94

AMBIENT TEMPERATURE = 37.77778 C
 LINER THERMOCOUPLE T= 226.4204 C
 CONCRETE THERMOCOUPLE T= 121.9238 C
 AVERAGE CONCRETE TEMP. = 120.0928 C
 AVERAGE CANISTER TEMP. = 308.1234 C
 AVERAGE HEAT SHIELD TEMP. = 271.0962 C
 AVERAGE LINER TEMP. = 207.6716 C
 AVERAGE INNER GAP TEMP. = 268.9630 C
 AVERAGE OUTER GAP TEMP. = 252.0891 C
 AVE. CONCRETE EXTERIOR TEMP= 78.26599 C

CONCRETE EXTERIOR H= 2.638274 W/SQM/C
 INNER GAP HEAT TRANSFER COEF= 4.563057 W/SQM/C
 OUTER GAP HEAT TRANSFER COEF= 4.903236 W/SQM/C
 INNER GAP AIR FLOW FRACTION = 0.6000000 C
 TOTAL MASS FLOW RATE = 6.7987129E-02 kg/sec
 INNER AIR VELOCITY = 0.1816206 m/sec
 OUTER AIR VELOCITY = 0.2303068 m/sec
 TOTAL TEMPERATURE RISE = 62.22222 C
 INNER GAP AIR EXIT TEMP. = 282.4452 C
 INNER GAP AIR EXIT TEMP. = 272.8090 C
 PRESSURE DROP IN INNER GAP= 0.1924641 Velocity Head
 PRESSURE DROP IN OUTER GAP= 0.4115880 Velocity Head

KK = 3
 THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
 THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
 THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
 THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES
 CAN...10..11..12..13..20..21..22..30..31..32..41

183.13	174.27	121.68	87.38	87.13	105.27
105.18	105.08	112.69	92.18	84.44	79.51

THE CASE FOR QTOTAL = 20000.0 Watts

 THE TIME IS: 162.0000

 THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	194.00	208.06	192.90	211.06	156.21	155.27	131.76	111.35	94.29	82.37	74.44	69.42	66.51
2.	195.20	205.94	196.00	219.43	163.40	162.79	145.69	126.39	106.58	90.21	78.71	72.21	69.06
3.	245.59	210.53	220.39	228.51	172.70	172.10	155.36	135.95	115.01	96.53	83.10	75.61	72.05
4.	277.80	218.82	239.84	235.97	182.16	181.53	164.06	143.77	121.68	101.75	87.00	78.73	74.81
5.	294.43	228.18	252.23	241.91	190.73	190.09	171.77	150.50	127.26	106.08	90.24	81.28	77.05
6.	304.49	237.55	261.02	246.81	198.20	197.53	178.46	156.29	131.98	109.67	92.76	82.91	78.09
7.	312.04	246.57	268.19	250.95	204.66	203.97	184.26	161.29	136.06	112.78	95.03	84.64	79.57
8.	318.37	255.11	274.39	254.49	210.26	209.55	189.28	165.63	139.59	115.48	97.03	86.20	80.91

9.	324.05	263.14	279.94	257.49	215.13	214.41	193.64	169.37	142.61	117.76	98.68	87.46	82.00
10.	328.82	270.61	284.72	259.94	219.34	218.60	197.40	172.58	145.16	119.60	99.86	88.25	82.63
11.	333.12	277.52	288.99	261.93	222.96	222.20	200.62	175.31	147.28	120.99	100.43	87.91	81.59
12.	336.96	283.90	292.76	263.48	226.02	225.25	203.34	177.62	149.09	122.24	101.16	88.32	81.90
13.	340.35	289.74	296.04	264.59	228.52	227.75	205.58	179.53	150.60	123.32	101.88	88.83	82.32
14.	343.41	295.19	298.92	265.29	230.47	229.69	207.31	181.01	151.76	124.15	102.43	89.23	82.64
15.	345.95	300.01	301.25	265.60	231.73	230.95	208.42	181.92	152.44	124.56	102.62	89.32	82.71
16.	347.95	304.41	303.02	265.56	232.20	231.41	208.79	182.16	152.51	124.39	102.19	88.76	82.18
17.	348.65	308.16	303.75	265.24	231.65	230.86	208.23	181.58	151.87	123.53	100.78	86.37	78.90
18.	347.99	311.14	303.38	264.84	229.80	229.02	206.53	180.08	150.59	122.46	99.81	85.48	78.16
19.	344.64	313.11	301.10	264.60	226.25	225.47	203.32	177.32	148.46	121.07	99.01	84.96	77.76
20.	334.60	313.28	294.69	265.02	220.41	219.65	197.89	172.58	144.91	119.20	98.49	84.88	77.75
21.	307.89	309.64	279.20	267.01	211.81	211.02	188.51	163.79	138.57	116.82	99.30	86.76	79.79
22.	274.85	282.90	258.59	272.43	201.54	200.14	167.54	143.38	125.74	114.08	104.48	94.40	86.32

AMBIENT TEMPERATURE =	37.77778	C
LINER THERMOCOUPLE T=	228.5217	C
CONCRETE THERMOCOUPLE T=	123.3244	C
AVERAGE CONCRETE TEMP. =	121.3148	C
AVERAGE CANISTER TEMP. =	309.5975	C
AVERAGE HEAT SHIELD TEMP. =	272.7221	C
AVERAGE LINER TEMP. =	209.6126	C
AVERAGE INNER GAP TEMP. =	266.3859	C
AVERAGE OUTER GAP TEMP. =	257.2386	C
AVE. CONCRETE EXTERIOR TEMP=	78.89706	C
CONCRETE EXTERIOR H=	2.642628	W/SQM/C
INNER GAP HEAT TRANSFER COEF=	4.840917	W/SQM/C
OUTER GAP HEAT TRANSFER COEF=	5.088245	W/SQM/C
INNER GAP AIR FLOW FRACTION =	0.6000000	C
TOTAL MASS FLOW RATE =	4.1636474E-02	kg/sec
INNER AIR VELOCITY =	0.1665993	m/sec
OUTER AIR VELOCITY =	0.2112588	m/sec
TOTAL TEMPERATURE RISE =	62.22222	C
INNER GAP AIR EXIT TEMP. =	282.8975	C
INNER GAP AIR EXIT TEMP. =	272.4280	C
PRESSURE DROP IN INNER GAP=	0.1751458	Velocity Head
PRESSURE DROP IN OUTER GAP=	0.3837320	Velocity Head

KK = 3

THE TOTAL HEAT INPUT FROM CANISTER =	20868.36	Watts
THE TOTAL HEAT INPUT FROM SIDE =	2630.646	Watts
THE TOTAL HEAT INPUT FROM LID =	3028.957	Watts
THE TOTAL HEAT INPUT FROM BASE =	126.5690	Watts

THE TEMPERATURES FOR THE CASKLID NODES

CAN...10...11...12...13...20...21...22...30...31...32...41

184.09	175.75	122.22	87.60	87.35	105.71
105.62	105.51	113.37	92.53	84.58	79.73

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 166.0000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	195.70	211.68	194.33	214.75	157.92	156.97	133.31	112.75	95.54	83.48	75.40	70.24	67.22
2.	196.94	209.43	197.49	222.94	165.17	164.57	147.38	127.95	107.98	91.41	79.70	73.03	69.78
3.	247.16	213.32	221.94	231.75	174.55	173.95	157.14	137.61	116.51	97.81	84.14	76.46	72.80
4.	279.29	220.72	241.44	238.97	184.08	183.46	165.91	145.51	123.25	103.08	88.09	79.61	75.58
5.	295.92	229.23	253.88	244.74	192.72	192.08	173.69	152.30	128.88	107.46	91.35	82.18	77.83
6.	305.98	237.90	262.72	249.49	200.24	199.56	180.43	158.13	133.65	111.08	93.88	83.80	78.85
7.	313.55	246.36	269.93	253.51	206.73	206.03	186.26	163.17	137.75	114.21	96.16	85.53	80.33
8.	319.89	254.47	276.15	256.92	212.35	211.64	191.30	167.52	141.29	116.92	98.16	87.09	81.67
9.	325.56	262.19	281.72	259.78	217.24	216.51	195.67	171.28	144.33	119.20	99.81	88.35	82.75
10.	330.33	269.44	286.51	262.14	221.44	220.70	199.43	174.49	146.87	121.02	100.98	89.12	83.37
11.	334.62	276.21	290.77	264.05	225.05	224.29	202.63	177.20	148.97	122.39	101.51	88.73	82.26
12.	338.45	282.52	294.52	265.51	228.09	227.32	205.34	179.49	150.77	123.62	102.22	89.11	82.54
13.	341.82	288.34	297.78	266.57	230.57	229.79	207.55	181.38	152.25	124.68	102.92	89.61	82.95
14.	344.85	293.82	300.63	267.23	232.48	231.69	209.25	182.82	153.38	125.48	103.45	89.98	83.26
15.	347.37	298.70	302.92	267.54	233.69	232.91	210.31	183.69	154.01	125.85	103.60	90.04	83.30
16.	349.33	303.18	304.64	267.53	234.11	233.32	210.63	183.88	154.03	125.63	103.12	89.44	82.74
17.	350.00	307.05	305.32	267.30	233.49	232.70	210.00	183.24	153.33	124.71	101.65	86.97	79.36
18.	349.29	310.19	304.88	267.00	231.57	230.78	208.23	181.66	151.98	123.57	100.62	86.04	78.58

19.	345.90	312.37	302.54	266.90	227.93	227.15	204.93	178.81	149.76	122.11	99.77	85.48	78.15
20.	335.83	312.86	296.05	267.44	221.98	221.22	199.39	173.96	146.12	120.17	99.18	85.36	78.11
21.	309.14	309.80	280.48	269.48	213.27	212.48	189.88	165.02	139.64	117.68	99.95	87.21	80.13
22.	276.03	284.68	259.72	274.74	202.87	201.46	168.66	144.34	126.59	114.82	105.10	94.88	86.69

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          230.5654      C
CONCRETE THERMOCOUPLE T=        124.6849      C
AVERAGE CONCRETE TEMP. =        122.5029      C
AVERAGE CANISTER TEMP. =        311.0394      C
AVERAGE HEAT SHIELD TEMP. =      274.2982      C
AVERAGE LINER TEMP. =          211.4928      C
AVERAGE INNER GAP TEMP. =        273.8174      C
AVERAGE OUTER GAP TEMP. =        254.4408      C
AVE. CONCRETE EXTERIOR TEMP=      79.50945      C

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CONCRETE EXTERIOR H=            2.645295      W/SQM/C
INNER GAP HEAT TRANSFER COEF=    4.523542      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=    4.894053      W/SQM/C
INNER GAP AIR FLOW FRACTION =     0.6000000      C
TOTAL MASS FLOW RATE =          6.4884901E-02  kg/sec
INNER AIR VELOCITY =            0.1730819      m/sec
OUTER AIR VELOCITY =            0.2194792      m/sec
TOTAL TEMPERATURE RISE =         62.22222      C
INNER GAP AIR EXIT TEMP. =       284.6793      C
INNER GAP AIR EXIT TEMP. =       274.7423      C
PRESSURE DROP IN INNER GAP=      0.1861707      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.3951661      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =        2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =          3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =         126.5690      Watts
*****

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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

185.02	175.86	122.74	87.81	87.56	106.13
106.04	105.93	114.02	92.88	84.72	79.95

THE CASE FOR QTOTAL = 20000.0 Watts

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*****
THE TIME IS:      170.0000
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THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1.	197.36	211.63	196.05	214.61	159.61	158.66	134.83	114.12	96.77	84.57	76.34	71.04	67.92
2.	198.65	209.52	199.23	223.02	166.93	166.32	149.03	129.48	109.35	92.59	80.68	73.84	70.49
3.	248.70	213.94	223.66	232.15	176.37	175.78	158.88	139.24	117.97	99.06	85.16	77.29	73.52
4.	280.76	222.00	243.14	239.62	185.98	185.35	167.73	147.22	124.79	104.39	89.14	80.47	76.33
5.	297.37	231.14	255.57	245.58	194.68	194.03	175.57	154.06	130.47	108.80	92.44	83.06	78.59
6.	307.44	240.34	264.40	250.47	202.23	201.55	182.35	159.94	135.27	112.45	94.98	84.67	79.59
7.	315.01	249.23	271.60	254.60	208.75	208.06	188.21	165.00	139.40	115.60	97.26	86.40	81.06
8.	321.36	257.67	277.82	258.10	214.40	213.68	193.27	169.37	142.96	118.32	99.27	87.96	82.40
9.	327.03	265.63	283.37	261.03	219.28	218.55	197.65	173.14	146.00	120.60	100.92	89.22	83.48
10.	331.80	273.05	288.15	263.44	223.49	222.75	201.40	176.34	148.54	122.42	102.07	89.97	84.08
11.	336.08	279.94	292.39	265.36	227.08	226.33	204.59	179.04	150.62	123.76	102.57	89.52	82.91
12.	339.90	286.29	296.12	266.83	230.10	229.33	207.28	181.31	152.39	124.97	103.25	89.88	83.17
13.	343.25	292.13	299.36	267.85	232.55	231.78	209.46	183.17	153.86	126.01	103.93	90.36	83.56
14.	346.25	297.58	302.18	268.45	234.43	233.64	211.13	184.58	154.95	126.78	104.43	90.71	83.85
15.	348.74	302.39	304.43	268.66	235.60	234.81	212.15	185.41	155.54	127.11	104.55	90.75	83.87
16.	350.67	306.78	306.11	268.51	235.96	235.17	212.41	185.54	155.51	126.84	104.02	90.11	83.28
17.	351.30	310.52	306.75	268.09	235.28	234.48	211.72	184.84	154.74	125.85	102.48	87.55	79.80
18.	350.55	313.51	306.26	267.57	233.28	232.49	209.88	183.19	153.32	124.65	101.40	86.58	78.99
19.	347.11	315.47	303.87	267.24	229.56	228.78	206.49	180.25	151.03	123.12	100.49	85.98	78.53
20.	337.01	315.67	297.33	267.54	223.51	222.75	200.84	175.30	147.29	121.10	99.86	85.83	78.46
21.	310.34	312.13	281.73	269.44	214.68	213.89	191.20	166.22	140.67	118.52	100.57	87.65	80.46
22.	277.18	285.20	260.91	274.78	204.18	202.76	169.75	145.28	127.41	115.53	105.70	95.34	87.04

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          232.5522      C
CONCRETE THERMOCOUPLE T=        126.0063      C
AVERAGE CONCRETE TEMP. =        123.6583      C

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AVERAGE CANISTER TEMP. =      312.4409      C
AVERAGE HEAT SHIELD TEMP. =    275.8416      C
AVERAGE LINER TEMP. =        213.3275      C
AVERAGE INNER GAP TEMP. =     276.3077      C
AVERAGE OUTER GAP TEMP. =     255.2358      C
AVE. CONCRETE EXTERIOR TEMP=    80.10400      C

CONCRETE EXTERIOR H=          2.648441      W/SQM/C
INNER GAP HEAT TRANSFER COEF=   4.540133      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=   4.897426      W/SQM/C
INNER GAP AIR FLOW FRACTION =    0.6000000      C
TOTAL MASS FLOW RATE =        6.0200643E-02  kg/sec
INNER AIR VELOCITY =          0.1605866      m/sec
OUTER AIR VELOCITY =          0.2036342      m/sec
TOTAL TEMPERATURE RISE =        62.22222      C
INNER GAP AIR EXIT TEMP. =      285.1969      C
INNER GAP AIR EXIT TEMP. =      274.7757      C
PRESSURE DROP IN INNER GAP=     0.1740489      Velocity Head
PRESSURE DROP IN OUTER GAP=     0.3675584      Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =       3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =       126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

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185.91 176.54 123.24 88.02 87.76 106.54
106.45 106.34 114.65 93.21 84.85 80.15
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THE CASE FOR QTOTAL = 20000.0 Watts

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THE TIME IS:    174.0000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1. 199.00 212.72 197.57 215.74 161.26 160.30 136.32 115.46 97.98 85.64 77.27 71.82 68.60
2. 200.32 210.62 200.79 224.24 168.64 168.02 150.65 130.98 110.69 93.74 81.63 74.62 71.17
3. 250.20 215.29 225.25 233.47 178.15 177.55 160.59 140.83 119.41 100.28 86.15 78.10 74.23
4. 282.19 223.69 244.75 241.03 187.83 187.20 169.51 148.88 126.29 105.66 90.18 81.31 77.06
5. 298.80 233.16 257.19 247.05 196.58 195.93 177.40 155.78 132.02 110.12 93.50 83.92 79.34
6. 308.87 242.63 266.04 251.99 204.17 203.49 184.22 161.69 136.86 113.79 96.04 85.51 80.31
7. 316.45 251.73 273.24 256.15 210.72 210.02 190.11 166.79 141.01 116.95 98.34 87.25 81.78
8. 322.79 260.33 279.46 259.66 216.39 215.67 195.19 171.18 144.58 119.68 100.35 88.80 83.12
9. 328.46 268.40 285.01 262.61 221.28 220.55 199.58 174.95 147.63 121.97 101.99 90.06 84.19
10. 333.23 275.89 289.77 265.02 225.48 224.74 203.33 178.15 150.16 123.77 103.13 90.79 84.78
11. 337.50 282.81 294.00 266.93 229.06 228.30 206.50 180.83 152.23 125.09 103.59 90.29 83.54
12. 341.30 289.17 297.71 268.37 232.06 231.29 209.17 183.09 153.98 126.28 104.25 90.63 83.78
13. 344.63 294.99 300.92 269.36 234.48 233.70 211.33 184.92 155.41 127.29 104.90 91.09 84.15
14. 347.62 300.39 303.71 269.92 236.32 235.53 212.96 186.29 156.48 128.03 105.38 91.42 84.42
15. 350.08 305.15 305.93 270.07 237.45 236.66 213.93 187.07 157.03 128.32 105.47 91.43 84.42
16. 351.97 309.46 307.57 269.86 237.76 236.96 214.14 187.16 156.94 128.00 104.89 90.75 83.79
17. 352.56 313.10 308.16 269.34 237.01 236.22 213.39 186.39 156.11 126.95 103.29 88.12 80.22
18. 351.77 315.97 307.62 268.73 234.94 234.15 211.47 184.67 154.63 125.69 102.15 87.10 79.38
19. 348.30 317.79 305.17 268.30 231.14 230.36 208.00 181.65 152.25 124.10 101.19 86.47 78.89
20. 338.16 317.79 298.58 268.54 225.00 224.23 202.26 176.60 148.42 122.00 100.51 86.28 78.80
21. 311.50 313.94 282.93 270.39 216.06 215.26 192.48 167.37 141.67 119.33 101.18 88.07 80.78
22. 278.29 286.38 262.01 275.77 205.43 204.01 170.80 146.19 128.20 116.22 106.28 95.79 87.38
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AMBIENT TEMPERATURE =      37.77778      C
LINER THERMOCOUPLE T=     234.4832      C
CONCRETE THERMOCOUPLE T=    127.2896      C
AVERAGE CONCRETE TEMP. =     124.7821      C
AVERAGE CANISTER TEMP. =     313.8086      C
AVERAGE HEAT SHIELD TEMP. =    277.3536      C
AVERAGE LINER TEMP. =        215.1082      C
AVERAGE INNER GAP TEMP. =     271.3513      C
AVERAGE OUTER GAP TEMP. =     261.7374      C
AVE. CONCRETE EXTERIOR TEMP=    80.68092      C

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CONCRETE EXTERIOR H=          2.652525      W/SQM/C
INNER GAP HEAT TRANSFER COEF=   4.835276      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=   5.095316      W/SQM/C

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INNER GAP AIR FLOW FRACTION = 0.6000000 C
TOTAL MASS FLOW RATE = 4.0817950E-02 kg/sec
INNER AIR VELOCITY = 0.1633242 m/sec
OUTER AIR VELOCITY = 0.2071057 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 286.3847 C
INNER GAP AIR EXIT TEMP. = 275.7704 C
PRESSURE DROP IN INNER GAP= 0.1743520 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.3815243 Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

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186.76 178.16 123.72 88.21 87.96 106.93
106.84 106.73 115.25 93.52 84.98 80.36
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 178.0000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1.	200.60	209.63	199.07	212.18	162.88	161.92	137.79	116.79	99.17	86.70	78.18	72.59	69.27
2.	201.96	208.08	202.32	221.25	170.31	169.70	152.24	132.45	112.01	94.87	82.57	75.39	71.85
3.	251.68	214.51	226.80	231.37	179.90	179.30	162.27	142.40	120.81	101.47	87.13	78.90	74.93
4.	283.60	225.01	246.30	239.65	189.64	189.01	171.25	150.51	127.75	106.91	91.18	82.13	77.77
5.	300.19	236.36	258.76	246.20	198.44	197.79	179.19	157.46	133.53	111.40	94.53	84.75	80.06
6.	310.26	247.30	267.62	251.57	206.07	205.39	186.05	163.41	138.40	115.09	97.08	86.33	81.00
7.	317.84	257.49	274.83	256.09	212.65	211.95	191.96	168.53	142.58	118.27	99.38	88.07	82.48
8.	324.19	266.86	281.05	259.91	218.32	217.61	197.06	172.94	146.17	121.01	101.40	89.63	83.81
9.	329.86	275.44	286.60	263.12	223.22	222.49	201.45	176.71	149.21	123.30	103.03	90.87	84.88
10.	334.61	283.21	291.35	265.72	227.42	226.67	205.20	179.90	151.74	125.09	104.15	91.58	85.45
11.	338.87	290.24	295.57	267.79	230.99	230.22	208.36	182.57	153.79	126.39	104.59	91.04	84.15
12.	342.66	296.58	299.26	269.31	233.96	233.19	211.00	184.81	155.52	127.55	105.22	91.35	84.36
13.	345.97	302.26	302.45	270.31	236.36	235.58	213.13	186.61	156.93	128.54	105.85	91.79	84.72
14.	348.93	307.45	305.20	270.78	238.16	237.37	214.73	187.95	157.96	129.25	106.30	92.11	84.98
15.	351.36	311.93	307.39	270.72	239.24	238.45	215.66	188.69	158.47	129.50	106.36	92.09	84.96
16.	353.22	315.91	308.99	270.16	239.50	238.70	215.82	188.73	158.33	129.13	105.74	91.37	84.29
17.	353.78	319.15	309.53	269.13	238.69	237.89	215.00	187.89	157.44	128.02	104.06	88.66	80.63
18.	352.95	321.54	308.94	267.85	236.55	235.76	213.02	186.10	155.89	126.69	102.88	87.60	79.75
19.	349.44	322.78	306.44	266.64	232.67	231.88	209.46	183.01	153.44	125.04	101.87	86.93	79.24
20.	339.28	321.95	299.80	266.00	226.43	225.66	203.62	177.85	149.51	122.87	101.14	86.71	79.12
21.	312.63	316.70	284.12	267.11	217.39	216.59	193.72	168.49	142.64	120.11	101.76	88.48	81.08
22.	279.37	284.13	263.11	272.38	206.65	205.22	171.82	147.06	128.96	116.89	106.84	96.22	87.71

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*****
AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 236.3569 C
CONCRETE THERMOCOUPLE T= 128.5357 C
AVERAGE CONCRETE TEMP. = 125.8753 C
AVERAGE CANISTER TEMP. = 315.1365 C
AVERAGE HEAT SHIELD TEMP. = 278.8033 C
AVERAGE LINER TEMP. = 216.8454 C
AVERAGE INNER GAP TEMP. = 276.4712 C
AVERAGE OUTER GAP TEMP. = 260.6179 C
AVE. CONCRETE EXTERIOR TEMP= 81.24104 C

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CONCRETE EXTERIOR H= 2.655144 W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.874758 W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 5.110707 W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000 C
TOTAL MASS FLOW RATE = 4.9559325E-02 kg/sec
INNER AIR VELOCITY = 0.1322006 m/sec
OUTER AIR VELOCITY = 0.1676390 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 284.1256 C
INNER GAP AIR EXIT TEMP. = 272.3772 C
PRESSURE DROP IN INNER GAP= 0.1433547 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.3077422 Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

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187.59 178.30 124.19 88.40 88.15 107.30
107.21 107.11 115.84 93.83 85.10 80.53
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 182.0000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1.	202.17	211.67	200.50	214.31	164.47	163.50	139.22	118.09	100.34	87.73	79.08	73.35	69.93
2.	203.56	210.05	203.79	223.35	171.95	171.33	153.80	133.89	113.30	95.98	83.48	76.15	72.51
3.	253.12	216.25	228.30	233.41	181.61	181.00	163.90	143.92	122.18	102.64	88.08	79.68	75.60
4.	284.98	226.50	247.82	241.64	191.40	190.77	172.95	152.10	129.19	108.13	92.17	82.93	78.47
5.	301.55	237.62	260.30	248.15	200.26	199.60	180.94	159.10	135.01	112.66	95.54	85.56	80.76
6.	311.62	248.40	269.18	253.47	207.92	207.24	187.83	165.09	139.91	116.37	98.09	87.13	81.68
7.	319.20	258.48	276.41	257.95	214.52	213.82	193.77	170.23	144.11	119.56	100.40	88.87	83.15
8.	325.55	267.77	282.64	261.72	220.21	219.49	198.89	174.65	147.71	122.31	102.42	90.43	84.49
9.	331.22	276.31	288.18	264.88	225.12	224.38	203.28	178.43	150.76	124.59	104.05	91.67	85.55
10.	335.97	284.06	292.93	267.43	229.31	228.56	207.02	181.61	153.27	126.37	105.15	92.36	86.10
11.	340.22	291.08	297.13	269.44	232.86	232.10	210.17	184.27	155.31	127.65	105.55	91.77	84.74
12.	343.99	297.42	300.81	270.92	235.81	235.04	212.79	186.48	157.01	128.78	106.16	92.06	84.93
13.	347.29	303.12	303.97	271.86	238.18	237.40	214.89	188.26	158.40	129.75	106.77	92.48	85.27
14.	350.22	308.32	306.69	272.29	239.94	239.15	216.45	189.57	159.40	130.43	107.20	92.77	85.51
15.	352.62	312.82	308.84	272.19	240.98	240.19	217.34	190.26	159.87	130.65	107.22	92.73	85.47
16.	354.45	316.81	310.39	271.62	241.19	240.39	217.44	190.24	159.68	130.23	106.56	91.97	84.78
17.	354.97	320.07	310.89	270.60	240.32	239.52	216.57	189.35	158.73	129.06	104.82	89.18	81.03
18.	354.10	322.48	310.24	269.34	238.12	237.32	214.51	187.49	157.11	127.67	103.58	88.08	80.12
19.	350.55	323.74	307.67	268.14	234.15	233.37	210.88	184.32	154.58	125.95	102.53	87.38	79.58
20.	340.36	322.97	300.97	267.55	227.83	227.05	204.95	179.07	150.57	123.72	101.75	87.13	79.43
21.	313.72	317.84	285.23	268.72	218.68	217.88	194.92	169.57	143.57	120.87	102.32	88.87	81.38
22.	280.42	285.64	264.10	273.99	207.84	206.39	172.81	147.91	129.70	117.54	107.38	96.63	88.03

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AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 238.1785 C
CONCRETE THERMOCOUPLE T= 129.7456 C
AVERAGE CONCRETE TEMP. = 126.9382 C
AVERAGE CANISTER TEMP. = 316.4330 C
AVERAGE HEAT SHIELD TEMP. = 280.2322 C
AVERAGE LINER TEMP. = 218.5339 C
AVERAGE INNER GAP TEMP. = 277.5940 C
AVERAGE OUTER GAP TEMP. = 262.3335 C
AVE. CONCRETE EXTERIOR TEMP= 81.78469 C

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CONCRETE EXTERIOR H= 2.658128 W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.863719 W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 5.110302 W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000 C
TOTAL MASS FLOW RATE = 5.0649855E-02 kg/sec
INNER AIR VELOCITY = 0.1351096 m/sec
OUTER AIR VELOCITY = 0.1713278 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 285.6430 C
INNER GAP AIR EXIT TEMP. = 273.9904 C
PRESSURE DROP IN INNER GAP= 0.1470107 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.3162024 Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

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188.39 179.10 124.64 88.58 88.33 107.67
107.58 107.47 116.40 94.13 85.22 80.72

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 186.0000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	203.68	220.90	201.94	224.10	166.01	165.04	140.62	119.36	101.48	88.75	79.96	74.09	70.58
2.	205.11	218.54	205.26	232.26	173.54	172.92	155.32	135.30	114.56	97.07	84.38	76.89	73.16
3.	254.53	222.07	229.79	240.97	183.26	182.66	165.49	145.42	123.53	103.79	89.01	80.43	76.27
4.	286.31	228.99	249.33	248.09	193.12	192.49	174.60	153.66	130.59	109.32	93.13	83.71	79.15
5.	302.87	237.08	261.82	253.76	202.02	201.37	182.64	160.71	136.46	113.88	96.52	86.35	81.45
6.	312.95	245.37	270.71	258.41	209.72	209.04	189.57	166.72	141.39	117.61	99.08	87.91	82.34
7.	320.54	253.53	277.95	262.30	216.35	215.65	195.53	171.89	145.60	120.82	101.39	89.65	83.81
8.	326.89	261.40	284.17	265.56	222.05	221.33	200.66	176.32	149.21	123.57	103.41	91.20	85.15
9.	332.56	268.92	289.71	268.26	226.96	226.22	205.06	180.10	152.26	125.85	105.04	92.44	86.20
10.	337.30	276.02	294.46	270.45	231.14	230.39	208.79	183.28	154.77	127.61	106.12	93.11	86.73
11.	341.54	282.67	298.64	272.16	234.68	233.92	211.93	185.92	156.78	128.87	106.49	92.47	85.31
12.	345.30	288.88	302.30	273.43	237.62	236.84	214.53	188.11	158.47	129.98	107.07	92.74	85.48
13.	348.57	294.62	305.43	274.29	239.95	239.17	216.60	189.86	159.83	130.92	107.66	93.14	85.81
14.	351.48	300.02	308.13	274.76	241.68	240.89	218.12	191.13	160.79	131.57	108.06	93.42	86.03
15.	353.86	304.83	310.24	274.88	242.68	241.88	218.97	191.79	161.22	131.76	108.06	93.35	85.97
16.	355.65	309.24	311.75	274.70	242.83	242.03	219.02	191.72	160.99	131.29	107.35	92.55	85.24
17.	356.13	313.04	312.20	274.31	241.90	241.10	218.09	190.77	159.97	130.06	105.55	89.69	81.41
18.	355.23	316.12	311.51	273.89	239.63	238.83	215.96	188.84	158.29	128.61	104.26	88.55	80.47
19.	351.63	318.23	308.89	273.70	235.58	234.80	212.25	185.59	155.69	126.83	103.16	87.82	79.91
20.	341.41	318.70	302.13	274.16	229.17	228.40	206.22	180.24	151.59	124.53	102.33	87.53	79.73
21.	314.78	315.74	286.33	276.15	219.92	219.11	196.07	170.62	144.48	121.60	102.86	89.25	81.66
22.	281.42	291.00	265.12	281.29	208.97	207.52	173.76	148.73	130.41	118.16	107.90	97.03	88.33

AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 239.9516 C
CONCRETE THERMOCOUPLE T= 130.9203 C
AVERAGE CONCRETE TEMP. = 127.9716 C
AVERAGE CANISTER TEMP. = 317.6996 C
AVERAGE HEAT SHIELD TEMP. = 281.6280 C
AVERAGE LINER TEMP. = 220.1739 C
AVERAGE INNER GAP TEMP. = 279.8815 C
AVERAGE OUTER GAP TEMP. = 262.7695 C
AVE. CONCRETE EXTERIOR TEMP= 82.31241 C

CONCRETE EXTERIOR H= 2.660649 W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.531146 W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 4.920253 W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000 C
TOTAL MASS FLOW RATE = 6.2958039E-02 kg/sec
INNER AIR VELOCITY = 0.1812133 m/sec
OUTER AIR VELOCITY = 0.2297902 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 291.0002 C
INNER GAP AIR EXIT TEMP. = 281.2875 C
PRESSURE DROP IN INNER GAP= 0.1985494 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.4246771 Velocity Head

KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES

CAN...10..11..12..13..20..21..22..30..31..32..41

189.15 179.82 125.07 88.76 88.50 108.02
107.93 107.82 116.96 94.41 85.33 80.94

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 190.0000

THE TEMPERATURES FOR THE SIDE NODES

CAN...AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	205.17	220.69	203.28	223.81	167.52	166.55	141.99	120.61	102.61	89.75	80.83	74.82	71.22
2.	206.63	218.46	206.64	232.21	175.11	174.49	156.80	136.68	115.80	98.14	85.26	77.61	73.79
3.	255.90	222.43	231.21	241.23	184.89	184.28	167.05	146.88	124.84	104.91	89.92	81.18	76.91
4.	287.62	229.94	250.77	248.60	194.80	194.17	176.22	155.18	131.96	110.48	94.07	84.47	79.81
5.	304.17	238.58	263.28	254.46	203.75	203.09	184.31	162.27	137.87	115.08	97.48	87.13	82.12
6.	314.25	247.36	272.20	259.25	211.48	210.80	191.27	168.32	142.82	118.82	100.04	88.67	82.99
7.	321.85	255.91	279.44	263.25	218.13	217.43	197.26	173.50	147.06	122.04	102.36	90.40	84.45
8.	328.20	264.10	285.68	266.60	223.85	223.13	202.39	177.95	150.68	124.80	104.38	91.96	85.78
9.	333.86	271.87	291.22	269.37	228.76	228.02	206.79	181.73	153.72	127.07	106.00	93.18	86.83
10.	338.60	279.14	295.95	271.60	232.93	232.18	210.52	184.90	156.22	128.82	107.07	93.84	87.34
11.	342.83	285.92	300.12	273.33	236.46	235.69	213.64	187.52	158.22	130.06	107.40	93.16	85.86
12.	346.57	292.19	303.76	274.59	239.37	238.59	216.22	189.69	159.88	131.15	107.96	93.40	86.02
13.	349.82	297.96	306.87	275.41	241.68	240.89	218.26	191.42	161.21	132.06	108.53	93.78	86.33
14.	352.71	303.35	309.53	275.82	243.37	242.58	219.75	192.65	162.15	132.68	108.90	94.04	86.54
15.	355.05	308.12	311.61	275.83	244.32	243.52	220.55	193.27	162.54	132.83	108.87	93.95	86.45
16.	356.81	312.46	313.08	275.51	244.42	243.62	220.56	193.15	162.25	132.32	108.12	93.11	85.69
17.	357.26	316.15	313.48	274.96	243.44	242.64	219.56	192.14	161.18	131.03	106.25	90.18	81.78
18.	356.31	319.09	312.73	274.33	241.10	240.30	217.37	190.14	159.43	129.53	104.91	89.00	80.80
19.	352.68	321.02	310.05	273.90	236.98	236.19	213.58	186.82	156.77	127.69	103.77	88.24	80.22
20.	342.43	321.23	303.23	274.16	230.48	229.70	207.46	181.38	152.58	125.31	102.90	87.92	80.02
21.	315.81	317.84	287.38	276.01	221.12	220.32	197.20	171.63	145.35	122.30	103.38	89.61	81.93
22.	282.40	291.41	266.06	281.23	210.08	208.62	174.68	149.52	131.10	118.76	108.40	97.41	88.62

AMBIENT TEMPERATURE =	37.77778	C
LINER THERMOCOUPLE T=	241.6751	C
CONCRETE THERMOCOUPLE T=	132.0607	C
AVERAGE CONCRETE TEMP. =	128.9768	C
AVERAGE CANISTER TEMP. =	318.9316	C
AVERAGE HEAT SHIELD TEMP. =	282.9747	C
AVERAGE LINER TEMP. =	221.7735	C
AVERAGE INNER GAP TEMP. =	282.8123	C
AVERAGE OUTER GAP TEMP. =	263.1382	C
AVE. CONCRETE EXTERIOR TEMP=	82.82471	C

CONCRETE EXTERIOR H=	2.663245	W/SQM/C
INNER GAP HEAT TRANSFER COEF=	4.518178	W/SQM/C
OUTER GAP HEAT TRANSFER COEF=	4.914462	W/SQM/C
INNER GAP AIR FLOW FRACTION =	0.6000000	C
TOTAL MASS FLOW RATE =	6.3178979E-02	kg/sec
INNER AIR VELOCITY =	0.1685313	m/sec
OUTER AIR VELOCITY =	0.2137087	m/sec
TOTAL TEMPERATURE RISE =	62.22222	C
INNER GAP AIR EXIT TEMP. =	291.4126	C
INNER GAP AIR EXIT TEMP. =	281.2327	C
PRESSURE DROP IN INNER GAP=	0.1862977	Velocity Head
PRESSURE DROP IN OUTER GAP=	0.3954103	Velocity Head

KK = 3

THE TOTAL HEAT INPUT FROM CANISTER =	20868.36	Watts
THE TOTAL HEAT INPUT FROM SIDE =	2630.646	Watts
THE TOTAL HEAT INPUT FROM LID =	3028.957	Watts
THE TOTAL HEAT INPUT FROM BASE =	126.5690	Watts

THE TEMPERATURES FOR THE CASKLID NODES

CAN...10...11...12...13...20...21...22...30...31...32...41

189.89	180.35	125.49	88.93	88.67	108.36
108.27	108.16	117.48	94.69	85.44	81.10

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 194.0000

THE TEMPERATURES FOR THE SIDE NODES

CAN...AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	206.60	224.74	204.66	228.00	169.00	168.02	143.33	121.83	103.71	90.74	81.68	75.54	71.84
2.	208.10	222.31	208.05	236.09	176.63	176.01	158.25	138.03	117.02	99.18	86.13	78.32	74.41
3.	257.23	225.58	232.64	244.68	186.47	185.86	168.57	148.30	126.13	106.01	90.81	81.90	77.54
4.	288.90	232.19	252.20	251.71	196.44	195.81	177.80	156.66	133.30	111.62	94.99	85.22	80.46
5.	305.44	239.96	264.73	257.29	205.43	204.77	185.93	163.80	139.25	116.24	98.41	87.88	82.77
6.	315.52	247.99	273.65	261.85	213.20	212.52	192.93	169.88	144.23	120.01	100.98	89.41	83.61
7.	323.13	255.93	280.91	265.66	219.87	219.17	198.93	175.08	148.47	123.23	103.30	91.14	85.07

8.	329.48	263.62	287.14	268.83	225.60	224.88	204.08	179.53	152.10	125.99	105.32	92.69	86.40
9.	335.14	271.00	292.67	271.45	230.51	229.77	208.48	183.32	155.15	128.27	106.93	93.91	87.44
10.	339.87	277.99	297.40	273.55	234.68	233.92	212.20	186.48	157.64	130.00	107.98	94.55	87.94
11.	344.09	284.56	301.55	275.18	238.19	237.42	215.31	189.09	159.62	131.21	108.29	93.82	86.40
12.	347.82	290.70	305.17	276.37	241.08	240.30	217.86	191.23	161.25	132.28	108.82	94.04	86.54
13.	351.05	296.39	308.25	277.16	243.35	242.57	219.88	192.93	162.56	133.17	109.36	94.40	86.83
14.	353.91	301.76	310.89	277.56	245.01	244.22	221.33	194.13	163.46	133.76	109.72	94.64	87.02
15.	356.23	306.54	312.93	277.62	245.92	245.12	222.09	194.71	163.81	133.87	109.65	94.53	86.92
16.	357.96	310.94	314.36	277.41	245.97	245.17	222.05	194.54	163.48	133.32	108.86	93.66	86.13
17.	358.37	314.73	314.71	276.99	244.93	244.13	220.99	193.47	162.35	131.97	106.94	90.65	82.13
18.	357.38	317.80	313.91	276.56	242.52	241.72	218.73	191.40	160.54	130.41	105.55	89.44	81.13
19.	353.71	319.93	311.18	276.37	238.33	237.54	214.87	188.00	157.80	128.51	104.36	88.64	80.52
20.	343.43	320.44	304.30	276.86	231.74	230.96	208.66	182.48	153.54	126.07	103.44	88.29	80.30
21.	316.81	317.62	288.40	278.85	222.29	221.48	198.28	172.61	146.20	122.98	103.89	89.96	82.19
22.	283.33	293.43	266.99	283.91	211.14	209.68	175.57	150.28	131.77	119.34	108.89	97.79	88.90

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          243.3547      C
CONCRETE THERMOCOUPLE T=        133.1679      C
AVERAGE CONCRETE TEMP. =        129.9540      C
AVERAGE CANISTER TEMP. =        320.1363      C
AVERAGE HEAT SHIELD TEMP. =      284.3030      C
AVERAGE LINER TEMP. =           223.3276      C
AVERAGE INNER GAP TEMP. =        281.7589      C
AVERAGE OUTER GAP TEMP. =        266.0268      C
AVE. CONCRETE EXTERIOR TEMP=      83.32204      C

CONCRETE EXTERIOR H=             2.666021      W/SQM/C
INNER GAP HEAT TRANSFER COEF=     4.531966      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=     4.930244      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =           4.9821686E-02  kg/sec
INNER AIR VELOCITY =              0.1878259      m/sec
OUTER AIR VELOCITY =              0.2381755      m/sec
TOTAL TEMPERATURE RISE =          62.22222      C
INNER GAP AIR EXIT TEMP. =         293.4283      C
INNER GAP AIR EXIT TEMP. =         283.9129      C
PRESSURE DROP IN INNER GAP=        0.2069670      Velocity Head
PRESSURE DROP IN OUTER GAP=        0.4446496      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =        2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =          3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =         126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

190.60 181.26 125.89 89.09 88.83 108.69
108.59 108.48 117.99 94.95 85.55 81.29
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS:   198.0000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

1.  208.01 215.45 205.95 217.85 170.44 169.46 144.65 123.02 104.79 91.70 82.51 76.24 72.45
2.  209.55 214.12 209.37 227.24 178.12 177.50 159.67 139.35 118.20 100.20 86.97 79.01 75.01
3.  258.54 221.21 233.96 237.82 188.02 187.41 170.06 149.70 127.38 107.08 91.69 82.61 78.16
4.  290.14 232.48 253.54 246.46 198.05 197.41 179.34 158.11 134.61 112.73 95.89 85.94 81.09
5.  306.67 244.48 266.09 253.27 207.08 206.42 187.51 165.29 140.59 117.38 99.33 88.61 83.41
6.  316.76 255.92 275.04 258.82 214.88 214.19 194.54 171.39 145.59 121.16 101.90 90.13 84.22
7.  324.37 266.45 282.31 263.46 221.57 220.86 200.57 176.62 149.86 124.40 104.22 91.86 85.68
8.  330.72 276.03 288.56 267.35 227.31 226.58 205.73 181.08 153.49 127.16 106.23 93.41 87.00
9.  336.38 284.72 294.09 270.58 232.22 231.47 210.13 184.86 156.54 129.43 107.84 94.62 88.03
10. 341.10 292.51 298.81 273.16 236.38 235.62 213.84 188.02 159.01 131.15 108.87 95.24 88.52
11. 345.31 299.49 302.96 275.16 239.87 239.10 216.93 190.61 160.98 132.34 109.15 94.46 86.92
12. 349.02 305.72 306.56 276.57 242.74 241.96 219.46 192.73 162.59 133.38 109.65 94.66 87.04
13. 352.24 311.25 309.62 277.40 244.99 244.20 221.45 194.40 163.87 134.24 110.18 95.01 87.32
14. 355.08 316.24 312.22 277.65 246.61 245.81 222.87 195.57 164.74 134.81 110.51 95.22 87.49
15. 357.36 320.50 314.23 277.30 247.48 246.67 223.59 196.10 165.05 134.88 110.41 95.09 87.37
16. 359.06 324.22 315.62 276.38 247.48 246.67 223.49 195.88 164.67 134.28 109.58 94.18 86.55
17. 359.43 327.16 315.92 274.92 246.38 245.57 222.38 194.76 163.49 132.88 107.60 91.11 82.47

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18.	358.41	329.21	315.07	273.12	243.91	243.11	220.06	192.63	161.61	131.26	106.16	89.86	81.44
19.	354.70	330.05	312.28	271.27	239.64	238.85	216.12	189.16	158.81	129.31	104.93	89.03	80.81
20.	344.39	328.72	305.35	269.98	232.97	232.19	209.83	183.55	154.46	126.81	103.97	88.66	80.57
21.	317.77	322.75	289.42	270.50	223.42	222.61	199.33	173.56	147.01	123.64	104.37	90.30	82.45
22.	284.25	287.57	267.89	275.47	212.18	210.71	176.43	151.02	132.41	119.90	109.35	98.15	89.18

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          244.9867      C
CONCRETE THERMOCOUPLE T=        134.2429      C
AVERAGE CONCRETE TEMP. =        130.9047      C
AVERAGE CANISTER TEMP. =        321.3062      C
AVERAGE HEAT SHIELD TEMP. =     285.5794      C
AVERAGE LINER TEMP. =           224.8448      C
AVERAGE INNER GAP TEMP. =        284.4269      C
AVERAGE OUTER GAP TEMP. =        266.6448      C
AVE. CONCRETE EXTERIOR TEMP=      83.80490      C

CONCRETE EXTERIOR H=             2.668533      W/SQM/C
INNER GAP HEAT TRANSFER COEF=     4.879366      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=     5.118608      W/SQM/C
INNER GAP AIR FLOW FRACTION =     0.6000000      C
TOTAL MASS FLOW RATE =           4.5561161E-02  kg/sec
INNER AIR VELOCITY =             0.1215354      m/sec
OUTER AIR VELOCITY =             0.1541148      m/sec
TOTAL TEMPERATURE RISE =         62.22222      C
INNER GAP AIR EXIT TEMP. =        287.5720      C
INNER GAP AIR EXIT TEMP. =        275.4686      C
PRESSURE DROP IN INNER GAP=       0.1350026      Velocity Head
PRESSURE DROP IN OUTER GAP=       0.2882681      Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646      Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

191.29 181.36 126.28 89.25 88.99 109.00
108.91 108.80 118.48 95.21 85.65 81.39
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 202.0000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1.	209.40	221.79	207.40	224.79	171.87	170.88	145.94	124.20	105.85	92.65	83.33	76.93	73.05
2.	210.97	219.80	210.84	233.62	179.60	178.97	161.07	140.64	119.37	101.21	87.80	79.69	75.60
3.	259.82	224.87	235.42	243.25	189.55	188.93	171.52	151.06	128.61	108.13	92.54	83.30	78.76
4.	291.37	233.76	254.97	251.11	199.62	198.98	180.85	159.53	135.89	113.82	96.76	86.65	81.70
5.	307.88	243.70	267.50	257.33	208.69	208.02	189.06	166.74	141.90	118.49	100.21	89.33	84.03
6.	317.97	253.55	276.43	262.39	216.52	215.83	196.12	172.88	146.93	122.28	102.79	90.83	84.81
7.	325.58	262.95	283.68	266.60	223.22	222.51	202.16	178.11	151.21	125.53	105.11	92.55	86.27
8.	331.93	271.77	289.90	270.12	228.97	228.24	207.33	182.59	154.85	128.29	107.12	94.10	87.59
9.	337.58	279.99	295.42	273.00	233.88	233.13	211.73	186.37	157.89	130.56	108.72	95.30	88.61
10.	342.30	287.56	300.12	275.30	238.03	237.27	215.43	189.51	160.36	132.27	109.74	95.90	89.08
11.	346.50	294.49	304.25	277.05	241.51	240.73	218.51	192.09	162.30	133.43	109.98	95.09	87.42
12.	350.19	300.80	307.82	278.28	244.35	243.57	221.02	194.19	163.89	134.45	110.46	95.26	87.52
13.	353.39	306.52	310.86	279.01	246.57	245.78	222.98	195.83	165.14	135.29	110.97	95.59	87.79
14.	356.20	311.78	313.44	279.25	248.16	247.36	224.36	196.96	165.98	135.82	111.27	95.79	87.95
15.	358.46	316.35	315.41	279.03	248.98	248.18	225.04	197.46	166.26	135.87	111.14	95.63	87.80
16.	360.13	320.42	316.77	278.40	248.94	248.13	224.90	197.19	165.83	135.22	110.27	94.69	86.96
17.	360.47	323.79	317.05	277.41	247.78	246.98	223.73	196.01	164.59	133.76	108.24	91.55	82.81
18.	359.41	326.32	316.16	276.30	245.25	244.45	221.34	193.82	162.65	132.09	106.76	90.27	81.75
19.	355.66	327.76	313.34	275.33	240.91	240.12	217.33	190.28	159.79	130.08	105.49	89.41	81.09
20.	345.32	327.28	306.37	275.08	234.16	233.38	210.96	184.58	155.36	127.52	104.48	89.00	80.83
21.	318.71	322.80	290.41	276.55	224.53	223.72	200.35	174.48	147.80	124.28	104.84	90.63	82.69
22.	285.15	292.89	268.88	281.83	213.20	211.72	177.27	151.74	133.03	120.44	109.81	98.49	89.44

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          246.5705      C
CONCRETE THERMOCOUPLE T=        135.2866      C

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AVERAGE CONCRETE TEMP. =      131.8295      C
AVERAGE CANISTER TEMP. =      322.4460      C
AVERAGE HEAT SHIELD TEMP. =    286.8375      C
AVERAGE LINER TEMP. =        226.3211      C
AVERAGE INNER GAP TEMP. =      282.0010      C
AVERAGE OUTER GAP TEMP. =      270.5932      C
AVE. CONCRETE EXTERIOR TEMP=    84.27370      C

CONCRETE EXTERIOR H=          2.671432      W/SQM/C
INNER GAP HEAT TRANSFER COEF=  4.829683      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=  5.111765      W/SQM/C
INNER GAP AIR FLOW FRACTION =   0.6000000      C
TOTAL MASS FLOW RATE =       3.8142834E-02  kg/sec
INNER AIR VELOCITY =         0.1526203      m/sec
OUTER AIR VELOCITY =         0.1935325      m/sec
TOTAL TEMPERATURE RISE =       62.22222      C
INNER GAP AIR EXIT TEMP. =     292.8859      C
INNER GAP AIR EXIT TEMP. =     281.8286      C
PRESSURE DROP IN INNER GAP=    0.1682967      Velocity Head
PRESSURE DROP IN OUTER GAP=    0.3664342      Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

191.95 182.81 126.66 89.40 89.14 109.31
109.21 109.10 118.96 95.45 85.75 81.59
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 206.0000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

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1.	210.75	223.81	208.68	226.88	173.26	172.26	147.20	125.35	106.90	93.57	84.13	77.60	73.64
2.	212.35	221.75	212.15	235.65	181.03	180.39	162.43	141.91	120.51	102.19	88.61	80.35	76.18
3.	261.07	226.58	236.74	245.17	191.03	190.41	172.95	152.40	129.82	109.15	93.37	83.98	79.35
4.	292.56	235.18	256.30	252.94	201.15	200.51	182.33	160.91	137.13	114.88	97.62	87.34	82.30
5.	309.06	244.85	268.84	259.09	210.26	209.59	190.58	168.16	143.18	119.57	101.08	90.02	84.63
6.	319.15	254.49	277.78	264.08	218.11	217.42	197.66	174.32	148.23	123.38	103.66	91.51	85.39
7.	326.76	263.72	285.03	268.24	224.84	224.13	203.72	179.58	152.52	126.63	105.98	93.23	86.84
8.	333.12	272.42	291.26	271.69	230.59	229.86	208.89	184.05	156.17	129.40	107.99	94.77	88.15
9.	338.76	280.55	296.77	274.52	235.50	234.75	213.29	187.83	159.21	131.66	109.58	95.97	89.17
10.	343.47	288.06	301.45	276.75	239.64	238.88	216.98	190.97	161.66	133.35	110.58	96.55	89.62
11.	347.66	294.96	305.56	278.45	243.10	242.33	220.04	193.52	163.58	134.49	110.79	95.69	87.91
12.	351.34	301.26	309.12	279.63	245.92	245.14	222.53	195.60	165.15	135.48	111.25	95.84	87.99
13.	354.51	306.97	312.13	280.32	248.11	247.32	224.46	197.22	166.38	136.30	111.73	96.16	88.24
14.	357.30	312.24	314.68	280.54	249.66	248.86	225.81	198.32	167.19	136.81	112.01	96.34	88.39
15.	359.54	316.82	316.62	280.30	250.45	249.64	226.45	198.77	167.42	136.82	111.86	96.15	88.22
16.	361.17	320.92	317.94	279.67	250.36	249.55	226.26	198.46	166.95	136.13	110.95	95.18	87.35
17.	361.48	324.31	318.17	278.67	249.15	248.34	225.04	197.22	165.66	134.62	108.86	91.98	83.13
18.	360.38	326.88	317.24	277.59	246.55	245.75	222.59	194.97	163.66	132.89	107.33	90.66	82.04
19.	356.60	328.36	314.37	276.73	242.15	241.35	218.51	191.36	160.73	130.83	106.02	89.77	81.36
20.	346.23	327.96	307.36	276.55	235.32	234.54	212.05	185.58	156.23	128.21	104.97	89.34	81.08
21.	319.62	323.63	291.35	278.08	225.60	224.78	201.34	175.37	148.57	124.89	105.30	90.94	82.93
22.	286.01	294.26	269.74	283.35	214.17	212.68	178.08	152.43	133.64	120.97	110.24	98.83	89.69

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AMBIENT TEMPERATURE =      37.77778      C
LINER THERMOCOUPLE T=     248.1120      C
CONCRETE THERMOCOUPLE T=    136.2999      C
AVERAGE CONCRETE TEMP. =     132.7289      C
AVERAGE CANISTER TEMP. =     323.5578      C
AVERAGE HEAT SHIELD TEMP. =    288.0565      C
AVERAGE LINER TEMP. =       227.7570      C
AVERAGE INNER GAP TEMP. =     282.7965      C
AVERAGE OUTER GAP TEMP. =     272.1373      C
AVE. CONCRETE EXTERIOR TEMP=    84.72887      C

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CONCRETE EXTERIOR H=          2.673820      W/SQM/C
INNER GAP HEAT TRANSFER COEF=  4.818441      W/SQM/C

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OUTER GAP HEAT TRANSFER COEF=      5.109622      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =      3.9207436E-02      kg/sec
INNER AIR VELOCITY =      0.1568801      m/sec
OUTER AIR VELOCITY =      0.1989342      m/sec
TOTAL TEMPERATURE RISE =      62.22222      C
INNER GAP AIR EXIT TEMP. =      294.2647      C
INNER GAP AIR EXIT TEMP. =      283.3544      C
PRESSURE DROP IN INNER GAP=      0.1734099      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.3784522      Velocity Head

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KK =      3
THE TOTAL HEAT INPUT FROM CANISTER =      20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =      2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =      3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =      126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

192.60 183.48 127.02 89.55 89.28 109.60
109.51 109.40 119.43 95.69 85.85 81.74
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS:      210.0000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

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1.	212.08	225.66	209.82	228.71	174.62	173.62	148.44	126.48	107.92	94.48	84.92	78.27	74.21
2.	213.71	223.57	213.33	237.45	182.42	181.79	163.76	143.15	121.62	103.15	89.40	81.00	76.75
3.	262.30	228.12	237.97	246.91	192.48	191.87	174.34	153.70	130.99	110.15	94.19	84.64	79.92
4.	293.73	236.35	257.56	254.63	202.64	202.01	183.77	162.26	138.35	115.91	98.45	88.02	82.88
5.	310.22	245.68	270.14	260.72	211.79	211.12	192.05	169.55	144.43	120.63	101.93	90.70	85.21
6.	320.31	255.04	279.10	265.67	219.67	218.98	199.16	175.73	149.50	124.45	104.50	92.17	85.95
7.	327.92	264.06	286.38	269.78	226.41	225.70	205.24	181.00	153.80	127.71	106.82	93.89	87.39
8.	334.27	272.61	292.62	273.18	232.17	231.44	210.42	185.48	157.45	130.47	108.83	95.43	88.70
9.	339.91	280.63	298.13	275.96	237.07	236.32	214.81	189.26	160.49	132.73	110.42	96.62	89.71
10.	344.61	288.07	302.81	278.15	241.20	240.44	218.49	192.39	162.93	134.41	111.40	97.18	90.14
11.	348.79	294.93	306.91	279.80	244.65	243.87	221.53	194.92	164.83	135.52	111.58	96.28	88.39
12.	352.45	301.22	310.45	280.93	247.45	246.66	224.00	196.98	166.38	136.49	112.01	96.41	88.45
13.	355.61	306.95	313.43	281.58	249.61	248.82	225.90	198.56	167.58	137.28	112.47	96.70	88.68
14.	358.37	312.24	315.95	281.75	251.13	250.33	227.22	199.64	168.36	137.77	112.73	96.87	88.81
15.	360.58	316.85	317.85	281.48	251.87	251.07	227.82	200.05	168.56	137.74	112.55	96.66	88.63
16.	362.18	321.00	319.13	280.83	251.73	250.93	227.58	199.69	168.04	137.01	111.60	95.65	87.73
17.	362.46	324.44	319.31	279.86	250.47	249.66	226.31	198.40	166.69	135.44	109.45	92.40	83.44
18.	361.32	327.07	318.32	278.79	247.82	247.01	223.80	196.09	164.64	133.67	107.89	91.04	82.32
19.	357.50	328.64	315.39	277.91	243.34	242.55	219.65	192.41	161.64	131.55	106.54	90.13	81.63
20.	347.11	328.37	308.30	277.73	236.44	235.66	213.12	186.56	157.07	128.87	105.45	89.67	81.32
21.	320.51	324.28	292.23	279.26	226.63	225.81	202.31	176.23	149.31	125.49	105.74	91.25	83.16
22.	286.85	295.26	270.48	284.49	215.12	213.63	178.87	153.10	134.22	121.47	110.67	99.15	89.94

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AMBIENT TEMPERATURE =      37.77778      C
LINER THERMOCOUPLE T=      249.6087      C
CONCRETE THERMOCOUPLE T=      137.2838      C
AVERAGE CONCRETE TEMP. =      133.6038      C
AVERAGE CANISTER TEMP. =      324.6396      C
AVERAGE HEAT SHIELD TEMP. =      289.2366      C
AVERAGE LINER TEMP. =      229.1566      C
AVERAGE INNER GAP TEMP. =      290.1524      C
AVERAGE OUTER GAP TEMP. =      268.7037      C
AVE. CONCRETE EXTERIOR TEMP=      85.17090      C

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CONCRETE EXTERIOR H=      2.675152      W/SQM/C
INNER GAP HEAT TRANSFER COEF=      4.530596      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=      4.928268      W/SQM/C
INNER GAP AIR FLOW FRACTION =      0.6000000      C
TOTAL MASS FLOW RATE =      5.7845805E-02      kg/sec
INNER AIR VELOCITY =      0.1543050      m/sec
OUTER AIR VELOCITY =      0.1956688      m/sec
TOTAL TEMPERATURE RISE =      62.22222      C
INNER GAP AIR EXIT TEMP. =      295.2644      C
INNER GAP AIR EXIT TEMP. =      284.4920      C
PRESSURE DROP IN INNER GAP=      0.1743683      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.3683292      Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

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193.22 183.29 127.37 89.69 89.42 109.89
109.79 109.68 119.87 95.93 85.94 81.88
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 214.0000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR...LINER...CONCR. ----- CONCR.

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1. 213.37 227.34 211.06 230.43 175.94 174.94 149.65 127.59 108.92 95.38 85.69 78.92 74.78
2. 215.03 225.22 214.59 239.14 183.79 183.16 165.07 144.36 122.72 104.09 90.18 81.64 77.30
3. 263.50 229.63 239.25 248.54 193.89 193.28 175.70 154.98 132.14 111.14 94.98 85.28 80.49
4. 294.87 237.70 258.84 256.21 204.10 203.46 185.17 163.59 139.55 116.93 99.27 88.67 83.45
5. 311.35 246.87 271.42 262.26 213.28 212.62 193.49 170.90 145.65 121.66 102.75 91.36 85.78
6. 321.44 256.10 280.39 267.17 221.19 220.50 200.63 177.11 150.74 125.49 105.32 92.82 86.49
7. 329.05 265.03 287.67 271.24 227.94 227.23 206.71 182.39 155.05 128.76 107.65 94.53 87.93
8. 335.40 273.49 293.90 274.60 233.71 232.97 211.90 186.88 158.70 131.52 109.65 96.07 89.24
9. 341.04 281.46 299.40 277.34 238.61 237.86 216.29 190.65 161.74 133.77 111.23 97.24 90.24
10. 345.73 288.86 304.07 279.48 242.73 241.97 219.96 193.76 164.16 135.43 112.19 97.79 90.66
11. 349.89 295.69 308.15 281.08 246.16 245.38 222.99 196.28 166.05 136.53 112.34 96.85 88.85
12. 353.54 301.96 311.67 282.18 248.93 248.15 225.43 198.32 167.57 137.47 112.76 96.96 88.89
13. 356.68 307.68 314.63 282.79 251.07 250.27 227.31 199.88 168.75 138.24 113.19 97.24 89.11
14. 359.42 312.96 317.12 282.94 252.55 251.75 228.59 200.91 169.49 138.69 113.43 97.38 89.22
15. 361.60 317.57 318.99 282.64 253.25 252.45 229.15 201.29 169.65 138.63 113.22 97.15 89.02
16. 363.17 321.71 320.23 281.97 253.07 252.26 228.86 200.89 169.09 137.86 112.23 96.11 88.10
17. 363.41 325.16 320.37 281.00 251.76 250.95 227.54 199.54 167.69 136.25 110.03 92.80 83.73
18. 362.24 327.80 319.34 279.93 249.05 248.24 224.97 197.17 165.59 134.42 108.43 91.41 82.60
19. 358.39 329.38 316.36 279.07 244.50 243.71 220.76 193.43 162.53 132.25 107.04 90.47 81.88
20. 347.97 329.14 309.23 278.92 237.53 236.74 214.14 187.50 157.88 129.52 105.91 89.98 81.56
21. 321.36 325.13 293.12 280.47 227.63 226.81 203.24 177.07 150.02 126.07 106.16 91.54 83.37
22. 287.66 296.38 271.30 285.69 216.03 214.53 179.63 153.75 134.78 121.96 111.08 99.46 90.18
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AMBIENT TEMPERATURE = 37.77778 C
LINER THERMOCOUPLE T= 251.0669 C
CONCRETE THERMOCOUPLE T= 138.2389 C
AVERAGE CONCRETE TEMP. = 134.4547 C
AVERAGE CANISTER TEMP. = 325.6967 C
AVERAGE HEAT SHIELD TEMP. = 290.3921 C
AVERAGE LINER TEMP. = 230.5168 C
AVERAGE INNER GAP TEMP. = 291.1081 C
AVERAGE OUTER GAP TEMP. = 270.0509 C
AVE. CONCRETE EXTERIOR TEMP= 85.60009 C

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CONCRETE EXTERIOR H= 2.677346 W/SQM/C
INNER GAP HEAT TRANSFER COEF= 4.525872 W/SQM/C
OUTER GAP HEAT TRANSFER COEF= 4.931477 W/SQM/C
INNER GAP AIR FLOW FRACTION = 0.6000000 C
TOTAL MASS FLOW RATE = 5.8781143E-02 kg/sec
INNER AIR VELOCITY = 0.1568000 m/sec
OUTER AIR VELOCITY = 0.1988326 m/sec
TOTAL TEMPERATURE RISE = 62.22222 C
INNER GAP AIR EXIT TEMP. = 296.3815 C
INNER GAP AIR EXIT TEMP. = 285.6900 C
PRESSURE DROP IN INNER GAP= 0.1776931 Velocity Head
PRESSURE DROP IN OUTER GAP= 0.3758419 Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts
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THE TEMPERATURES FOR THE CASKLID NODES

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CAN...10..11..12..13..20..21..22..30..31..32..41

193.82 183.91 127.71 89.83 89.56 110.16
110.07 109.96 120.31 96.15 86.03 82.03

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 218.0000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	214.62	228.60	212.24	231.70	177.24	176.23	150.83	128.67	109.90	96.26	86.45	79.55	75.33
2.	216.31	226.47	215.80	240.43	185.12	184.49	166.34	145.55	123.79	105.01	90.94	82.26	77.85
3.	264.65	230.88	240.46	249.84	195.27	194.65	177.03	156.22	133.27	112.09	95.76	85.92	81.03
4.	295.98	238.94	260.06	257.52	205.52	204.88	186.54	164.87	140.71	117.91	100.06	89.31	84.01
5.	312.45	248.11	272.65	263.57	214.74	214.07	194.90	172.22	146.85	122.67	103.56	92.01	86.34
6.	322.54	257.35	281.63	268.48	222.67	221.98	202.05	178.45	151.95	126.51	106.13	93.45	87.02
7.	330.16	266.27	288.91	272.54	229.44	228.72	208.16	183.74	156.27	129.78	108.45	95.15	88.46
8.	336.51	274.74	295.15	275.89	235.20	234.47	213.35	188.24	159.92	132.54	110.45	96.69	89.76
9.	342.14	282.70	300.65	278.61	240.10	239.35	217.74	192.01	162.95	134.78	112.02	97.86	90.75
10.	346.83	290.10	305.32	280.73	244.22	243.45	221.40	195.11	165.37	136.43	112.97	98.39	91.15
11.	350.98	296.93	309.38	282.31	247.63	246.85	224.40	197.61	167.23	137.50	113.09	97.40	89.29
12.	354.61	303.19	312.88	283.37	250.38	249.59	226.82	199.62	168.73	138.42	113.47	97.49	89.32
13.	357.73	308.89	315.82	283.95	252.49	251.69	228.67	201.15	169.88	139.17	113.89	97.75	89.52
14.	360.45	314.16	318.28	284.06	253.93	253.13	229.92	202.16	170.60	139.59	114.11	97.88	89.62
15.	362.60	318.76	320.12	283.72	254.60	253.79	230.44	202.50	170.72	139.50	113.87	97.63	89.40
16.	364.14	322.88	321.33	283.01	254.37	253.56	230.11	202.05	170.12	138.69	112.84	96.56	88.45
17.	364.35	326.30	321.43	282.00	253.01	252.20	228.73	200.65	168.66	137.02	110.60	93.18	84.02
18.	363.14	328.91	320.35	280.89	250.24	249.43	226.11	198.23	166.50	135.15	108.95	91.76	82.86
19.	359.25	330.46	317.32	280.00	245.63	244.83	221.83	194.42	163.39	132.93	107.52	90.79	82.12
20.	348.80	330.18	310.15	279.81	238.58	237.79	215.14	188.41	158.67	130.14	106.36	90.28	81.78
21.	322.20	326.13	294.00	281.35	228.60	227.78	204.13	177.87	150.72	126.62	106.57	91.83	83.59
22.	288.44	297.27	272.10	286.56	216.92	215.41	180.37	154.38	135.33	122.44	111.47	99.77	90.40

AMBIENT TEMPERATURE =	37.77778	C
LINER THERMOCOUPLE T=	252.4861	C
CONCRETE THERMOCOUPLE T=	139.1663	C
AVERAGE CONCRETE TEMP. =	135.2821	C
AVERAGE CANISTER TEMP. =	326.7285	C
AVERAGE HEAT SHIELD TEMP. =	291.5251	C
AVERAGE LINER TEMP. =	231.8405	C
AVERAGE INNER GAP TEMP. =	292.0137	C
AVERAGE OUTER GAP TEMP. =	271.3156	C
AVE. CONCRETE EXTERIOR TEMP=	86.01689	C

CONCRETE EXTERIOR H=	2.679412	W/SQM/C
INNER GAP HEAT TRANSFER COEF=	4.535267	W/SQM/C
OUTER GAP HEAT TRANSFER COEF=	4.938416	W/SQM/C
INNER GAP AIR FLOW FRACTION =	0.6000000	C
TOTAL MASS FLOW RATE =	5.8807712E-02	kg/sec
INNER AIR VELOCITY =	0.1568709	m/sec
OUTER AIR VELOCITY =	0.1989225	m/sec
TOTAL TEMPERATURE RISE =	62.22222	C
INNER GAP AIR EXIT TEMP. =	297.2665	C
INNER GAP AIR EXIT TEMP. =	286.5592	C
PRESSURE DROP IN INNER GAP=	0.1782531	Velocity Head
PRESSURE DROP IN OUTER GAP=	0.3774768	Velocity Head

KK = 3

THE TOTAL HEAT INPUT FROM CANISTER =	20868.36	Watts
THE TOTAL HEAT INPUT FROM SIDE =	2630.646	Watts
THE TOTAL HEAT INPUT FROM LID =	3028.957	Watts
THE TOTAL HEAT INPUT FROM BASE =	126.5690	Watts

THE TEMPERATURES FOR THE CASKLID NODES

CAN...10..11..12..13..20..21..22..30..31..32..41

194.40 184.48 128.04 89.96 89.69 110.43
110.34 110.22 120.72 96.37 86.11 82.17

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 222.0000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	215.83	231.73	213.56	234.98	178.50	177.49	151.99	129.73	110.87	97.11	87.20	80.18	75.87
2.	217.55	229.43	217.13	243.46	186.42	185.78	167.58	146.71	124.83	105.91	91.69	82.87	78.38
3.	265.79	233.31	241.76	252.53	196.62	196.00	178.32	157.44	134.37	113.03	96.52	86.53	81.57
4.	297.06	240.70	261.33	259.92	206.91	206.27	187.88	166.13	141.85	118.88	100.84	89.94	84.55
5.	313.52	249.25	273.89	265.76	216.16	215.49	196.27	173.51	148.01	123.65	104.34	92.63	86.88
6.	323.61	257.96	282.85	270.48	224.12	223.42	203.45	179.76	153.13	127.50	106.91	94.06	87.54
7.	331.23	266.46	290.11	274.38	230.90	230.18	209.56	185.06	157.46	130.77	109.23	95.76	88.97
8.	337.59	274.60	296.33	277.58	236.67	235.93	214.76	189.56	161.11	133.53	111.23	97.29	90.26
9.	343.21	282.31	301.81	280.18	241.56	240.81	219.14	193.33	164.13	135.77	112.79	98.45	91.25
10.	347.89	289.53	306.45	282.19	245.67	244.90	222.79	196.42	166.54	137.40	113.72	98.96	91.63
11.	352.03	296.24	310.50	283.69	249.06	248.28	225.78	198.90	168.38	138.45	113.81	97.94	89.72
12.	355.65	302.43	313.97	284.70	251.79	251.00	228.18	200.89	169.86	139.35	114.17	98.01	89.73
13.	358.75	308.10	316.89	285.25	253.87	253.07	230.00	202.39	170.98	140.07	114.57	98.25	89.92
14.	361.44	313.37	319.33	285.36	255.28	254.48	231.22	203.37	171.67	140.47	114.76	98.36	90.01
15.	363.57	318.00	321.14	285.08	255.91	255.10	231.70	203.67	171.76	140.34	114.49	98.09	89.77
16.	365.08	322.17	322.32	284.47	255.64	254.83	231.32	203.17	171.11	139.49	113.44	96.99	88.80
17.	365.25	325.67	322.39	283.60	254.22	253.41	229.89	201.73	169.61	137.78	111.14	93.56	84.30
18.	364.01	328.39	321.29	282.69	251.39	250.59	227.21	199.24	167.39	135.86	109.45	92.10	83.12
19.	360.09	330.08	318.23	282.03	246.73	245.93	222.87	195.38	164.22	133.59	107.99	91.11	82.36
20.	349.61	330.03	311.03	282.10	239.60	238.81	216.11	189.29	159.43	130.74	106.79	90.58	82.00
21.	323.01	326.38	294.87	283.83	229.54	228.72	205.01	178.66	151.39	127.16	106.97	92.10	83.79
22.	289.21	299.27	272.97	289.01	217.78	216.27	181.08	154.99	135.86	122.90	111.85	100.06	90.62

AMBIENT TEMPERATURE =	37.77778	C
LINER THERMOCOUPLE T=	253.8680	C
CONCRETE THERMOCOUPLE T=	140.0668	C
AVERAGE CONCRETE TEMP. =	136.0871	C
AVERAGE CANISTER TEMP. =	327.7345	C
AVERAGE HEAT SHIELD TEMP. =	292.6302	C
AVERAGE LINER TEMP. =	233.1291	C
AVERAGE INNER GAP TEMP. =	288.4947	C
AVERAGE OUTER GAP TEMP. =	275.8937	C
AVE. CONCRETE EXTERIOR TEMP=	86.42169	C

CONCRETE EXTERIOR H=	2.682105	W/SQM/C
INNER GAP HEAT TRANSFER COEF=	4.662608	W/SQM/C
OUTER GAP HEAT TRANSFER COEF=	5.034001	W/SQM/C
INNER GAP AIR FLOW FRACTION =	0.6000000	C
TOTAL MASS FLOW RATE =	4.3261286E-02	kg/sec
INNER AIR VELOCITY =	0.1731007	m/sec
OUTER AIR VELOCITY =	0.2195029	m/sec
TOTAL TEMPERATURE RISE =	62.22222	C
INNER GAP AIR EXIT TEMP. =	299.2671	C
INNER GAP AIR EXIT TEMP. =	289.0085	C
PRESSURE DROP IN INNER GAP=	0.1946420	Velocity Head
PRESSURE DROP IN OUTER GAP=	0.4224076	Velocity Head

KK = 3

THE TOTAL HEAT INPUT FROM CANISTER =	20868.36	Watts
THE TOTAL HEAT INPUT FROM SIDE =	2630.646	Watts
THE TOTAL HEAT INPUT FROM LID =	3028.957	Watts
THE TOTAL HEAT INPUT FROM BASE =	126.5690	Watts

THE TEMPERATURES FOR THE CASKLID NODES

CAN...10..11..12..13..20..21..22..30..31..32..41

194.96	185.65	128.36	90.09	89.82	110.69
110.59	110.48	121.13	96.57	86.20	82.32

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 226.0000

THE TEMPERATURES FOR THE SIDE NODES

CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	217.04	224.52	214.60	227.01	179.75	178.74	153.13	130.77	111.81	97.96	87.93	80.79	76.40
2.	218.79	223.18	218.21	236.54	187.70	187.06	168.80	147.84	125.85	106.80	92.41	83.47	78.89
3.	266.90	230.20	242.86	247.25	197.94	197.32	179.59	158.63	135.44	113.95	97.26	87.13	82.09
4.	298.13	241.39	262.46	255.98	208.27	207.63	189.19	167.36	142.96	119.82	101.60	90.55	85.07
5.	314.57	253.33	275.05	262.83	217.55	216.88	197.61	174.77	149.14	124.61	105.11	93.25	87.41
6.	324.66	264.72	284.04	268.37	225.53	224.83	204.81	181.04	154.27	128.46	107.67	94.66	88.04

7.	332.28	275.22	291.32	272.97	232.32	231.60	210.93	186.35	158.61	131.74	109.99	96.35	89.46
8.	338.63	284.76	297.55	276.78	238.09	237.36	216.13	190.85	162.27	134.50	111.98	97.87	90.75
9.	344.25	293.41	303.03	279.88	242.98	242.23	220.51	194.61	165.28	136.72	113.53	99.03	91.73
10.	348.92	301.15	307.67	282.31	247.07	246.31	224.15	197.69	167.67	138.34	114.44	99.52	92.10
11.	353.05	308.07	311.70	284.12	250.45	249.67	227.12	200.15	169.50	139.37	114.51	98.46	90.14
12.	356.65	314.22	315.16	285.32	253.16	252.37	229.50	202.12	170.95	140.24	114.85	98.51	90.13
13.	359.73	319.65	318.05	285.90	255.21	254.41	231.29	203.60	172.05	140.94	115.23	98.73	90.31
14.	362.41	324.52	320.46	285.88	256.59	255.79	232.48	204.54	172.71	141.31	115.40	98.83	90.38
15.	364.51	328.64	322.24	285.23	257.18	256.37	232.92	204.80	172.76	141.16	115.10	98.53	90.13
16.	365.99	332.19	323.37	284.00	256.87	256.05	232.50	204.27	172.07	140.27	114.01	97.41	89.13
17.	366.13	334.94	323.40	282.20	255.40	254.59	231.02	202.77	170.52	138.51	111.67	93.92	84.57
18.	364.86	336.77	322.24	280.04	252.52	251.71	228.29	200.23	168.26	136.54	109.94	92.44	83.36
19.	360.90	337.38	319.12	277.85	247.79	246.99	223.88	196.31	165.03	134.22	108.44	91.42	82.59
20.	350.40	335.80	311.87	276.25	240.60	239.81	217.05	190.15	160.17	131.33	107.20	90.86	82.21
21.	323.80	329.59	295.66	276.51	230.46	229.64	205.86	179.42	152.04	127.68	107.35	92.37	83.99
22.	289.95	293.44	273.63	281.30	218.62	217.10	181.78	155.58	136.37	123.34	112.23	100.34	90.84

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          255.2085      C
CONCRETE THERMOCOUPLE T=        140.9412      C
AVERAGE CONCRETE TEMP. =        136.8704      C
AVERAGE CANISTER TEMP. =        328.7103      C
AVERAGE HEAT SHIELD TEMP. =     293.6897      C
AVERAGE LINER TEMP. =          234.3882      C
AVERAGE INNER GAP TEMP. =       292.7072      C
AVERAGE OUTER GAP TEMP. =       274.8374      C
AVE. CONCRETE EXTERIOR TEMP=     86.81492      C

CONCRETE EXTERIOR H=            2.683691      W/SQM/C
INNER GAP HEAT TRANSFER COEF=    4.857263      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=    5.123407      W/SQM/C
INNER GAP AIR FLOW FRACTION =    0.6000000      C
TOTAL MASS FLOW RATE =          4.5152344E-02  kg/sec
INNER AIR VELOCITY =            0.1204449      m/sec
OUTER AIR VELOCITY =            0.1527320      m/sec
TOTAL TEMPERATURE RISE =        62.22222      C
INNER GAP AIR EXIT TEMP. =       293.4369      C
INNER GAP AIR EXIT TEMP. =       281.3026      C
PRESSURE DROP IN INNER GAP=      0.1371445      Velocity Head
PRESSURE DROP IN OUTER GAP=      0.2929688      Velocity Head

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KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

195.50 185.24 128.67 90.22 89.94 110.94
110.84 110.73 121.52 96.78 86.28 82.39
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS: 230.0000
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THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR....SHIELD...AIR....LINER...CONCR. ----- CONCR.

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1.	218.23	231.41	215.88	234.53	180.98	179.96	154.25	131.79	112.74	98.78	88.64	81.39	76.92
2.	220.00	229.33	219.49	243.38	188.97	188.32	169.99	148.95	126.86	107.66	93.13	84.05	79.40
3.	268.01	234.08	244.13	252.96	199.24	198.62	180.84	159.79	136.49	114.84	97.99	87.72	82.60
4.	299.17	242.59	263.68	260.77	209.61	208.96	190.47	168.56	144.04	120.74	102.34	91.14	85.59
5.	315.60	252.17	276.25	266.91	218.92	218.24	198.92	176.00	150.25	125.55	105.86	93.84	87.92
6.	325.69	261.74	285.20	271.87	226.91	226.21	206.13	182.28	155.40	129.41	108.41	95.24	88.53
7.	333.30	270.92	292.46	275.96	233.70	232.98	212.27	187.60	159.74	132.68	110.73	96.93	89.94
8.	339.65	279.58	298.66	279.32	239.48	238.74	217.47	192.10	163.40	135.44	112.72	98.44	91.23
9.	345.26	287.66	304.12	282.02	244.36	243.61	221.84	195.86	166.41	137.66	114.26	99.59	92.20
10.	349.92	295.12	308.74	284.11	248.44	247.67	225.47	198.93	168.78	139.26	115.15	100.06	92.55
11.	354.03	301.96	312.75	285.64	251.80	251.02	228.42	201.37	170.59	140.26	115.19	98.96	90.55
12.	357.62	308.20	316.18	286.64	254.48	253.69	230.78	203.31	172.02	141.12	115.51	98.99	90.52
13.	360.68	313.84	319.05	287.13	256.51	255.71	232.54	204.77	173.09	141.79	115.87	99.20	90.69
14.	363.33	319.02	321.44	287.13	257.86	257.05	233.70	205.68	173.72	142.14	116.01	99.28	90.74
15.	365.41	323.50	323.19	286.66	258.41	257.60	234.10	205.91	173.74	141.95	115.69	98.97	90.47
16.	366.86	327.47	324.30	285.79	258.06	257.24	233.64	205.33	173.01	141.02	114.57	97.81	89.45

17.	366.97	330.72	324.31	284.60	256.55	255.73	232.12	203.78	171.41	139.21	112.18	94.27	84.83
18.	365.67	333.14	323.12	283.29	253.61	252.80	229.33	201.20	169.09	137.20	110.41	92.76	83.60
19.	361.68	334.45	319.98	282.19	248.83	248.03	224.87	197.21	165.81	134.84	108.88	91.72	82.81
20.	351.16	333.87	312.71	281.81	241.57	240.78	217.96	190.98	160.89	131.89	107.61	91.14	82.41
21.	324.56	329.39	296.48	283.21	231.37	230.54	206.69	180.16	152.67	128.19	107.72	92.63	84.18
22.	290.69	299.38	274.47	288.42	219.45	217.93	182.46	156.16	136.87	123.77	112.58	100.61	91.04

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          256.5084      C
CONCRETE THERMOCOUPLE T=          141.7903      C
AVERAGE CONCRETE TEMP. =          137.6326      C
AVERAGE CANISTER TEMP. =          329.6608      C
AVERAGE HEAT SHIELD TEMP. =          294.7388      C
AVERAGE LINER TEMP. =          235.6133      C
AVERAGE INNER GAP TEMP. =          289.6411      C
AVERAGE OUTER GAP TEMP. =          278.8252      C
AVE. CONCRETE EXTERIOR TEMP=          87.19689      C

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CONCRETE EXTERIOR H=          2.686129      W/SQM/C
INNER GAP HEAT TRANSFER COEF=          4.800231      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=          5.116371      W/SQM/C
INNER GAP AIR FLOW FRACTION =          0.6000000      C
TOTAL MASS FLOW RATE =          3.9097700E-02      kg/sec
INNER AIR VELOCITY =          0.1564410      m/sec
OUTER AIR VELOCITY =          0.1983774      m/sec
TOTAL TEMPERATURE RISE =          62.22222      C
INNER GAP AIR EXIT TEMP. =          299.3849      C
INNER GAP AIR EXIT TEMP. =          288.4166      C
PRESSURE DROP IN INNER GAP=          0.1765126      Velocity Head
PRESSURE DROP IN OUTER GAP=          0.3851739      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =          20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =          2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =          3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =          126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10...11...12...13...20...21...22...30...31...32...41

196.03	186.72	128.97	90.34	90.06	111.18
111.09	110.97	121.90	96.97	86.36	82.56

THE CASE FOR QTOTAL = 20000.0 Watts

THE TIME IS: 234.0000

THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1.	219.38	235.32	216.72	238.57	182.16	181.15	155.34	132.79	113.64	99.59	89.34	81.98	77.43
2.	221.18	233.02	220.38	247.10	190.18	189.54	171.16	150.04	127.84	108.51	93.82	84.62	79.90
3.	269.07	236.81	245.09	256.20	200.50	199.88	182.05	160.93	137.52	115.72	98.70	88.29	83.09
4.	300.19	244.10	264.72	263.60	210.90	210.26	191.72	169.74	145.10	121.64	103.06	91.72	86.09
5.	316.60	252.55	277.35	269.44	220.24	219.56	200.20	177.20	151.33	126.46	106.58	94.42	88.42
6.	326.69	261.17	286.36	274.14	228.25	227.55	207.43	183.50	156.49	130.32	109.14	95.80	89.01
7.	334.30	269.60	293.65	278.00	235.05	234.33	213.57	188.83	160.84	133.60	111.45	97.48	90.41
8.	340.64	277.69	299.88	281.16	240.83	240.09	218.77	193.33	164.49	136.36	113.43	98.99	91.69
9.	346.25	285.36	305.35	283.68	245.71	244.95	223.14	197.08	167.50	138.57	114.96	100.13	92.65
10.	350.90	292.55	309.97	285.62	249.77	249.00	226.76	200.13	169.86	140.15	115.84	100.59	92.99
11.	355.00	299.22	313.97	287.04	253.11	252.33	229.69	202.56	171.64	141.13	115.85	99.45	90.94
12.	358.57	305.39	317.39	287.95	255.78	254.98	232.02	204.48	173.05	141.96	116.15	99.46	90.90
13.	361.62	311.03	320.24	288.40	257.77	256.97	233.76	205.90	174.10	142.61	116.49	99.66	91.05
14.	364.24	316.27	322.59	288.41	259.09	258.29	234.88	206.79	174.70	142.94	116.61	99.72	91.09
15.	366.30	320.86	324.31	288.00	259.61	258.80	235.25	206.98	174.68	142.72	116.27	99.38	90.81
16.	367.72	324.99	325.37	287.28	259.21	258.40	234.75	206.36	173.91	141.75	115.11	98.20	89.76
17.	367.80	328.44	325.31	286.31	257.65	256.84	233.18	204.77	172.27	139.90	112.67	94.61	85.08
18.	366.47	331.11	324.06	285.29	254.67	253.86	230.34	202.13	169.90	137.84	110.87	93.07	83.83
19.	362.45	332.75	320.85	284.54	249.83	249.03	225.82	198.08	166.57	135.44	109.30	92.00	83.02
20.	351.90	332.64	313.49	284.52	242.51	241.72	218.85	191.79	161.58	132.44	108.00	91.40	82.61
21.	325.30	328.98	297.18	286.18	232.23	231.40	207.49	180.88	153.29	128.68	108.08	92.88	84.36
22.	291.39	301.61	274.97	291.32	220.24	218.71	183.11	156.72	137.35	124.19	112.93	100.88	91.24

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          257.7739      C

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CONCRETE THERMOCOUPLE T=          142.6147      C
AVERAGE CONCRETE TEMP. =          138.3741      C
AVERAGE CANISTER TEMP. =          330.5895      C
AVERAGE HEAT SHIELD TEMP. =        295.7575      C
AVERAGE LINER TEMP. =             236.8023      C
AVERAGE INNER GAP TEMP. =          294.6314      C
AVERAGE OUTER GAP TEMP. =          276.6932      C
AVE. CONCRETE EXTERIOR TEMP=        87.56789      C

CONCRETE EXTERIOR H=                2.687182      W/SQM/C
INNER GAP HEAT TRANSFER COEF=        4.538192      W/SQM/C
OUTER GAP HEAT TRANSFER COEF=        4.958800      W/SQM/C
INNER GAP AIR FLOW FRACTION =        0.6000000      C
TOTAL MASS FLOW RATE =             6.2946670E-02  kg/sec
INNER AIR VELOCITY =                0.1704528      m/sec
OUTER AIR VELOCITY =                0.2161452      m/sec
TOTAL TEMPERATURE RISE =            62.22222      C
INNER GAP AIR EXIT TEMP. =           301.6053      C
INNER GAP AIR EXIT TEMP. =           291.3241      C
PRESSURE DROP IN INNER GAP=         0.1951968      Velocity Head
PRESSURE DROP IN OUTER GAP=         0.4169607      Velocity Head

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KK =          3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36      Watts
THE TOTAL HEAT INPUT FROM SIDE =       2630.646      Watts
THE TOTAL HEAT INPUT FROM LID =         3028.957      Watts
THE TOTAL HEAT INPUT FROM BASE =        126.5690      Watts
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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

196.54 186.79 129.27 90.46 90.18 111.42
111.32 111.21 122.27 97.16 86.43 82.69
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS:    238.0000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR....LINER...CONCR. ----- CONCR.

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1.	220.50	237.94	217.91	241.26	183.32	182.30	156.40	133.77	114.53	100.39	90.03	82.55	77.93
2.	222.32	235.53	221.58	249.60	191.37	190.73	172.30	151.11	128.80	109.34	94.51	85.18	80.38
3.	270.11	238.92	246.27	258.42	201.72	201.10	183.24	162.05	138.52	116.58	99.39	88.85	83.58
4.	301.18	245.70	265.87	265.61	212.16	211.52	192.94	170.89	146.13	122.51	103.76	92.29	86.58
5.	317.58	253.65	278.47	271.26	221.53	220.85	201.44	178.37	152.38	127.35	107.29	94.99	88.91
6.	327.67	261.84	287.46	275.82	229.55	228.85	208.69	184.68	157.55	131.22	109.84	96.35	89.47
7.	335.28	269.92	294.73	279.55	236.37	235.65	214.84	190.02	161.91	134.50	112.15	98.03	90.87
8.	341.62	277.72	300.94	282.59	242.15	241.41	220.04	194.52	165.56	137.25	114.13	99.53	92.14
9.	347.22	285.17	306.39	285.02	247.02	246.26	224.41	198.26	168.56	139.45	115.65	100.66	93.09
10.	351.87	292.19	310.99	286.88	251.07	250.30	228.01	201.30	170.91	141.02	116.51	101.10	93.42
11.	355.95	298.74	314.97	288.23	254.40	253.61	230.92	203.71	172.67	141.98	116.49	99.93	91.33
12.	359.51	304.83	318.37	289.10	257.04	256.24	233.23	205.61	174.06	142.79	116.77	99.92	91.26
13.	362.53	310.43	321.20	289.53	259.01	258.21	234.95	207.01	175.08	143.42	117.09	100.10	91.40
14.	365.14	315.65	323.53	289.54	260.30	259.49	236.04	207.86	175.65	143.71	117.19	100.14	91.43
15.	367.16	320.25	325.22	289.18	260.78	259.96	236.37	208.02	175.60	143.46	116.82	99.79	91.13
16.	368.56	324.41	326.26	288.52	260.34	259.52	235.83	207.36	174.79	142.46	115.63	98.58	90.06
17.	368.61	327.92	326.18	287.65	258.73	257.92	234.21	205.72	173.11	140.56	113.15	94.94	85.33
18.	367.25	330.66	324.90	286.78	255.70	254.89	231.32	203.03	170.69	138.46	111.31	93.37	84.05
19.	363.19	332.41	321.66	286.18	250.80	249.99	226.74	198.93	167.30	136.02	109.71	92.28	83.23
20.	352.62	332.49	314.29	286.33	243.41	242.62	219.71	192.57	162.26	132.97	108.38	91.66	82.80
21.	326.02	329.14	297.97	288.11	233.06	232.23	208.26	181.57	153.88	129.15	108.43	93.12	84.54
22.	292.07	303.10	275.77	293.19	221.00	219.46	183.74	157.26	137.81	124.59	113.27	101.14	91.44

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AMBIENT TEMPERATURE =          37.77778      C
LINER THERMOCOUPLE T=          259.0080      C
CONCRETE THERMOCOUPLE T=          143.4153      C
AVERAGE CONCRETE TEMP. =          139.0952      C
AVERAGE CANISTER TEMP. =          331.4970      C
AVERAGE HEAT SHIELD TEMP. =        296.7458      C
AVERAGE LINER TEMP. =           237.9597      C
AVERAGE INNER GAP TEMP. =          293.0529      C
AVERAGE OUTER GAP TEMP. =          279.7604      C
AVE. CONCRETE EXTERIOR TEMP=        87.92836      C

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CONCRETE EXTERIOR H=                2.689421      W/SQM/C

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INNER GAP HEAT TRANSFER COEF=    4.589629    W/SQM/C
OUTER GAP HEAT TRANSFER COEF=    5.008062    W/SQM/C
INNER GAP AIR FLOW FRACTION =    0.6000000    C
TOTAL MASS FLOW RATE =    4.5710810E-02    kg/sec
INNER AIR VELOCITY =    0.1829019    m/sec
OUTER AIR VELOCITY =    0.2319316    m/sec
TOTAL TEMPERATURE RISE =    62.22222    C
INNER GAP AIR EXIT TEMP. =    303.1042    C
INNER GAP AIR EXIT TEMP. =    293.1898    C
PRESSURE DROP IN INNER GAP=    0.2084751    Velocity Head
PRESSURE DROP IN OUTER GAP=    0.4516026    Velocity Head

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KK =    3
THE TOTAL HEAT INPUT FROM CANISTER =    20868.36    Watts
THE TOTAL HEAT INPUT FROM SIDE =    2630.646    Watts
THE TOTAL HEAT INPUT FROM LID =    3028.957    Watts
THE TOTAL HEAT INPUT FROM BASE =    126.5690    Watts
*****

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THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

197.04 187.62 129.55 90.57 90.29 111.64
111.55 111.43 122.63 97.35 86.50 82.82
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THE CASE FOR QTOTAL = 20000.0 Watts
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THE TIME IS:    240.0000
*****
THE TEMPERATURES FOR THE SIDE NODES
CAN....AIR...SHIELD...AIR...LINER...CONCR. ----- CONCR.

1. 221.06 236.93 218.41 240.18 183.90 182.88 156.93 134.25 114.97 100.78 90.37 82.84 78.17
2. 222.90 234.64 222.10 248.73 191.97 191.33 172.86 151.63 129.27 109.74 94.84 85.45 80.62
3. 270.63 238.44 246.79 257.85 202.34 201.72 183.82 162.59 139.02 117.00 99.73 89.13 83.82
4. 301.67 245.75 266.39 265.27 212.79 212.15 193.54 171.45 146.64 122.94 104.11 92.57 86.82
5. 318.06 254.21 279.01 271.10 222.17 221.49 202.05 178.94 152.90 127.79 107.64 95.27 89.15
6. 328.15 262.84 288.01 275.80 230.20 229.50 209.31 185.26 158.08 131.66 110.19 96.62 89.69
7. 335.76 271.29 295.29 279.65 237.02 236.29 215.46 190.60 162.43 134.94 112.49 98.29 91.09
8. 342.09 279.37 301.50 282.78 242.79 242.05 220.66 195.10 166.09 137.69 114.47 99.80 92.36
9. 347.69 287.05 306.96 285.29 247.66 246.90 225.03 198.84 169.08 139.88 115.98 100.92 93.31
10. 352.33 294.23 311.55 287.20 251.71 250.94 228.62 201.88 171.42 141.45 116.84 101.35 93.62
11. 356.41 300.89 315.53 288.58 255.02 254.24 231.53 204.28 173.18 142.39 116.80 100.16 91.51
12. 359.95 307.04 318.92 289.45 257.65 256.86 233.83 206.16 174.55 143.19 117.07 100.14 91.44
13. 362.97 312.67 321.74 289.85 259.61 258.81 235.53 207.55 175.56 143.81 117.38 100.31 91.57
14. 365.57 317.88 324.05 289.82 260.88 260.07 236.60 208.39 176.12 144.09 117.48 100.35 91.60
15. 367.58 322.44 325.72 289.36 261.34 260.53 236.92 208.53 176.05 143.83 117.09 99.99 91.29
16. 368.96 326.54 326.74 288.58 260.89 260.07 236.36 207.85 175.22 142.81 115.88 98.76 90.21
17. 369.00 329.96 326.64 287.56 259.26 258.44 234.72 206.19 173.51 140.89 113.38 95.10 85.45
18. 367.62 332.59 325.34 286.49 256.21 255.39 231.80 203.47 171.08 138.77 111.52 93.52 84.16
19. 363.56 334.18 322.07 285.68 251.28 250.48 227.20 199.35 167.66 136.30 109.91 92.42 83.33
20. 352.97 334.02 314.66 285.61 243.87 243.07 220.13 192.96 162.59 133.23 108.56 91.78 82.89
21. 326.38 330.30 298.31 287.25 233.48 232.65 208.64 181.91 154.17 129.38 108.60 93.23 84.63
22. 292.41 302.70 276.06 292.38 221.39 219.85 184.06 157.52 138.04 124.79 113.43 101.26 91.53
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AMBIENT TEMPERATURE =    37.77778    C
LINER THERMOCOUPLE T=    259.6081    C
CONCRETE THERMOCOUPLE T=    143.8068    C
AVERAGE CONCRETE TEMP. =    139.4485    C
AVERAGE CANISTER TEMP. =    331.9379    C
AVERAGE HEAT SHIELD TEMP. =    297.2346    C
AVERAGE LINER TEMP. =    238.5320    C
AVERAGE INNER GAP TEMP. =    296.1869    C
AVERAGE OUTER GAP TEMP. =    278.1455    C
AVE. CONCRETE EXTERIOR TEMP=    88.10487    C

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CONCRETE EXTERIOR H=    2.689775    W/SQM/C
INNER GAP HEAT TRANSFER COEF=    4.536686    W/SQM/C
OUTER GAP HEAT TRANSFER COEF=    4.962142    W/SQM/C
INNER GAP AIR FLOW FRACTION =    0.6000000    C
TOTAL MASS FLOW RATE =    6.2897369E-02    kg/sec
INNER AIR VELOCITY =    0.1697186    m/sec
OUTER AIR VELOCITY =    0.2152143    m/sec
TOTAL TEMPERATURE RISE =    62.22222    C
INNER GAP AIR EXIT TEMP. =    302.7033    C
INNER GAP AIR EXIT TEMP. =    292.3846    C
PRESSURE DROP IN INNER GAP=    0.1952525    Velocity Head

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PRESSURE DROP IN OUTER GAP= 0.4170032 Velocity Head

KK = 3
THE TOTAL HEAT INPUT FROM CANISTER = 20868.36 Watts
THE TOTAL HEAT INPUT FROM SIDE = 2630.646 Watts
THE TOTAL HEAT INPUT FROM LID = 3028.957 Watts
THE TOTAL HEAT INPUT FROM BASE = 126.5690 Watts

THE TEMPERATURES FOR THE CASKLID NODES
CAN...10..11..12..13..20..21..22..30..31..32..41

197.28 187.49 129.69 90.63 90.35 111.75
111.66 111.54 122.80 97.44 86.54 82.86
