

COMMONWEALTH EDISON COMPANY  
CALCULATION TITLE PAGE

CALCULATION NO. BRW-97-0339-M, BYR97-210		PAGE NO.: 1
<input checked="" type="checkbox"/> SAFETY RELATED <input type="checkbox"/> REGULATORY RELATED <input type="checkbox"/> NON- SAFETY RELATED		
CALCULATION TITLE: Byron and Braidwood Control Room Heat Up Evaluation		
STATION/UNIT: BYR/BRW 1 & 2		SYSTEM ABBREVIATION: VC
EQUIPMENT NO.: (IF APPL.) N/A		PROJECT NO.: (IF APPL.) 09050-059
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PREPARED BY: James E. Muraida		DATE: <u>4/19/97</u>
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DO ANY ASSUMPTIONS IN THIS CALCULATION REQUIRE LATER VERIFICATION    YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
REVIEWED BY: See Page 2 For Signatures		DATE: _____
REVIEW METHOD:		COMMENTS (C, NC OR CI): _____
APPROVED BY: See Page 2 For Signatures		DATE: _____

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CALCULATION REVISION PAGE

CALCULATION NO. BRW-97-0339-M, BYR97-210		PAGE NO.: 2
REV: 1	STATUS: Verified	QA SERIAL NO. OR CHRON NO. DATE: _____
PREPARED BY: James E. Muraida		DATE: <u>4/29/97</u>
REVISION SUMMARY: The purpose of Revision 1 is to account for ceiling heat transfer in the Control Room and AEERs and remove the floor heat transfer from the AEERs.		
ELECTRONIC CALCULATION DATA FILES REVISED: (Name.ext/size/date/hour:min/verification method/remarks)		
DO ANY ASSUMPTIONS IN THIS CALCULATION REQUIRE LATER VERIFICATION YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
REVIEWED BY: William T. Perchiazzi		DATE: <u>4/29/97</u>
REVIEW METHOD:		COMMENTS (C, NC OR CI): _____
APPROVED BY: Bruce J. Acas		DATE: <u>4/29/97</u>
REV: 2	STATUS: Verified	QA SERIAL NO. OR CHRON NO. DATE: _____
PREPARED BY: Chad J. Mitts <i>Chad J. Mitts</i>		DATE: <u>6/24/97</u>
REVISION SUMMARY: Revision 2 completely supersedes Revision 1. Revision 2 contains a more detailed model than Revision 1 and it includes an analysis of the electrical cabinet heat dissipation transients.		
Revision 2 Contents: Text pages 1-32, Attachment A pages A-1 - A-11, Attachment B pages B-1 - B-18, Attachment C pages C-1 - C-10, Attachment D pages D-1 - D-19, Attachment E pages E-1 - E-30, Attachment F pages F-1 - F-204		
ELECTRONIC CALCULATION DATA FILES REVISED: (Name.ext/size/date/hour:min/verification method/remarks).		
DO ANY ASSUMPTIONS IN THIS CALCULATION REQUIRE LATER VERIFICATION YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
REVIEWED BY: Michael J. Duffy <i>MJ Duffy</i>		DATE: <u>6/24/97</u>
REVIEW METHOD: <i>Detailed Review</i>		COMMENTS (C, NC OR CI): <u>C</u>
APPROVED BY: Robert J. Peterson <i>Robert J. Peterson</i>		DATE: <u>6/24/97</u> (CI)



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ATTACHMENTS:		
A Heat Structure Surface Area and Room Volume Details	11 pgs	
B Electrical Cabinet Geometry and Construction Details	18 pgs	
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D Electrical Cabinet Ventilation Heat Transfer Coefficient Calculations	19 pgs	
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F KITTY6 Input and Output Files for the Main Control Room / AEER Transient Temperature Model	204 pgs	

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Exhibit E  
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Revision 4

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## 1. PURPOSE/OBJECTIVE

The purpose of this calculation is to determine the transient temperature profiles of the Byron and Braidwood Main Control Rooms and Unit 1/2 Auxiliary Electrical Equipment Rooms (AEERs) following a loss of the Main Control Room Ventilation (VC) system, which is disabled as a result of fire damage to the power circuit. The fire is physically separate from the VC system envelope, and therefore, it does not have an impact on the transient temperature profiles of the Main Control Room and the AEERs other than causing the loss of ventilation.

## 2. METHODOLOGY/ACCEPTANCE CRITERIA

## 2.1. Definitions

The definitions of terms that are used frequently throughout the calculation are given below.

Heat Structure: A solid object of uniform thickness that is modeled using one dimensional conduction.

Room Volume: A distinct volume of air enclosed by walls, ceilings, and floors.

Room Partition: Any wall, ceiling, or floor that separates two rooms.

## 2.2. Thermal Modeling of the Main Control Room and Unit 1/2 AEERs

Following a loss of ventilation, the primary means of dissipating the heat load from each of the rooms are transmission through the walls, ceilings, and floors and air exchange with surrounding rooms through openings such as ducts, cable penetrations, and doors. During the transient period that occurs after the loss of ventilation, mass contained within the rooms such as equipment and structural steel also serves as a heat sink. In addition, the energy dissipation dynamics of the equipment generating heat within the rooms has an impact on the characteristics of the transient temperature profile. Therefore, the heat dissipation from the primary loads (electrical cabinets) are analyzed. The transient temperature calculation of the Main Control Room and the Unit 1/2 Auxiliary Electrical Equipment Rooms involves quantifying the configuration and heat transfer mechanisms associated with the various heat sinks, room volumes, and electrical cabinets and implementing the configurations into a KITTY6 thermal transient model.

The methodology used to develop the model is summarized in the following steps.

2.2.1. First, the general room arrangements, room volumes, and wall, floor, and ceiling surface areas are determined from Reference 5.1. In addition, the surface areas of the HVAC supply ducts within the Unit 1/2 AEERs are also quantified. The room volumes and heat structures are then assigned node numbers and the information is developed into a KITTY6 (Ref. 5.18) thermal model.

2.2.2. The applicable heat transfer mechanisms between the room volumes and each of the heat structures are identified and the heat transfer coefficient data are built into heat transfer paths in the KITTY6 (Ref. 5.18) thermal model. Heat transmission between room volumes via air exchange is conservatively neglected in the current model.

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2.2.3. The initial temperatures of the Main Control Room, the Unit 1/2 AEERs, and their associated boundaries are then used to generate initial temperature distributions through the room partitions. The details of this process are addressed in Attachment E. The heat transfer paths to rooms that are not actively determined in the transient model are then disconnected and adiabatic boundary conditions are applied at the midpoint of the partitions.

2.2.4. The heat loads within each of the rooms that are actively modeled in the transient calculation are obtained from Reference 5.6. The distribution of the heat load within each room between the electrical cabinets and the other sources such as lighting is then determined.

2.2.5. The configurations of the electrical cabinets within the Main Control Room and the Unit 1/2 Auxiliary Electrical Equipment Rooms are determined and a model of the cabinets is developed for each room. A detailed description of the general cabinet model is given in Sections 6.5 through 6.8. The respective cabinet models are implemented in each of the rooms and the portion of the heat load that is not attributable to the cabinets is conservatively assumed to dissipate directly to the room air.

2.2.6. The duration of the transient is set for eight hours and the model is executed.

The transient temperature profiles for the Main Control Room and the Unit 1/2 AEERs determined from the model and methodology described above represent conservative bounds of the actual temperature responses for initial temperatures and heat loads that are less than or equal to the values used in the calculation. The conservatism in the model is attributable to three primary simplifications. First, the adiabatic boundary condition applied at the midpoint of the walls underestimates heat transmission to the walls. This is conservative based on the fact that the Main Control Room and the AEERs have the largest specific heat loads in the VC system envelope. Therefore, the actual temperature increases in the boundary rooms will be less than the heat rises in the Main Control Room and AEERs over the duration of the transient. Second, the cabinet model that is utilized is conservative, therefore, the heat dissipation rate directly to the room air is conservatively maximized. The details of the cabinet model are discussed in Sections 6.5 through 6.8. In addition, heat transfer to the bounding rooms with smaller specific heat loads via air exchange is conservatively neglected. This simplification also neglects the air flow that occurs as a result of coast down of the fans in the VC system. Finally, the amount of mass available as heat sinks within each of the rooms is conservatively estimated.

2.3. Acceptance Criteria

There are no specific acceptance criteria that apply to the results of this calculation.

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Exhibit E  
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## 3 ASSUMPTIONS

- 3.1. All of the room dimensions are determined from Braidwood drawings, however, a sample of the Byron drawings were examined and there were no observed differences in the configuration or construction of the rooms modeled that would impact the results of the analysis. Furthermore, the heat loads utilized are the maximum values based on both plants. Therefore, the results presented in this calculation are applicable to both Byron and Braidwood.
- 3.2. It is conservatively assumed that 80% of the equipment heat load within the Unit 1/2 AEERs is attributable to the electrical cabinets. The remaining 20% of the heat load is generated primarily from lighting and other miscellaneous sources that are conservatively assumed to dissipate heat directly to the room air. The distribution is determined by applying a lighting heat dissipation of  $3.0 \text{ W/ft}^2$  for an illumination of 50 foot-candles (Ref. 5.15).
- 3.3. The control board cabinets are assumed to account for 50% of the total electrical equipment heat load in the Main Control Room. Reference 5.15 indicates that the heat load associated with fluorescent lights in a Main Control Room is  $8.5 \text{ W/ft}^2$ . Based on the size of the Main Control Room at Byron and Braidwood, this would result in a lighting heat load of approximately  $1.7 \cdot 10^6 \text{ Btu/hr}$ , or 76% of the total equipment heat load used in the current analysis. However, Reference 5.16 indicates that a typical heat dissipation value for a control panel is  $200 \text{ W/ft}^2$ . Therefore, the heat load attributable to the approximately 295 ft of control panels in the Main Control Room would be  $2.2 \cdot 10^6 \text{ Btu/hr}$ , or 89% of the total equipment heat load used in the current analysis. Due to the fact that the control panel heat load is a conservatively maximized value used to generate heat load data for ventilation requirements and the lighting heat load given for Main Control Rooms is larger than other fluorescent fixtures of higher illumination, a cabinet heat load equal to 50% of the total electrical equipment heat load for the Main Control Room is utilized as a conservative estimate.
- 3.4. It is conservatively assumed that during the transient, the heat generated from the electrical components within the cabinets is constant and it is instantaneously transferred to the cabinet air. This is conservative due to the fact that as the ambient temperature increases, the temperature difference between the components and the air decreases. Therefore, the components will increase in temperature in order to achieve the heat transfer required to dissipate all of the energy generated.
- 3.5. Water vapor to surface radiation heat transfer is modeled by assuming an initial relative humidity of 40%. This is not the minimum value given in Reference 5.5, however, it is reasonably conservative when combined with the maximum temperatures.
- 3.6. The total volume of the Main Control Room is reduced by 30% and the volumes of the Unit 1/2 AEERs and upper cable spreading areas are conservatively reduced by 20% to account for equipment within the rooms.

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<p>3.7. Fifty percent of the electrical cabinet mass in the Unit 1/2 AEERs that is not accounted for by the shell and mounting base is assumed to consist of steel that is available as a heat sink. This is a conservative estimate based on an examination of References 5.3 and 5.14. In addition, based on the general construction details given in References 5.3 and 5.14, a representative thickness of 0.25" is conservatively utilized to determine the surface area of the estimated heat sink mass.</p> <p>3.8. A thickness of 0.1196" (11 gauge steel sheets) is utilized as a representative value for the outer shell of the electrical cabinets in the Unit 1/2 AEERs (Reference 5.14, page 10).</p> <p>3.9. For the control panels in the Main Control Room, 60% of the total mass that is not accounted for by the outer shell is assumed to consist of steel that is available as a heat sink. This value is based on an examination of Reference 5.4. A representative thickness of 0.25 inches is conservatively used to determine the surface area of the estimated heat sink mass.</p> <p>3.10. An adiabatic boundary condition is conservatively imposed on the walls separating the Main Control Room and the Unit 1/2 AEERs from the other rooms within the VC system boundary. The adiabatic condition is applied at the midpoint of solid walls and it is applied at the internal surface of the face shell of hollow masonry block walls. For the Main Control Room, the walls adjacent to the corridors, stairwells, record storage areas, computer rooms, and restroom are assumed to be adiabatic. For the Unit 1 AEER, the adiabatic assumption includes the walls adjacent to the cable riser, record storage area, men's shower, men's restroom, kitchen, Unit 1 VC System Equipment Room, and the corridor. Similarly, the adiabatic condition is applied at the Unit 2 AEER walls adjacent to the cable riser, Unit 2 VC System equipment room, records storage room, corridor, security control center, and the electronics shop. The adiabatic assumption is conservative since, with the exception of the security control center, the specific heat loads for the rooms identified are negligible in comparison to the heat load of the Main Control Room and the Unit 1/2 AEERs (Ref. 5.6). The security control center has a specific heat load of approximately 3.8 Btu/hr-ft<sup>3</sup> (Ref. 5.6). However, the Unit 2 AEER has a specific heat load of approximately 4.8 Btu/hr-ft<sup>3</sup>, therefore, the adiabatic assumption is still conservative.</p> <p>3.11. Heat transfer through the bullet resisting doors located between the AEERs and the Main Control Room is neglected in the current model.</p> <p>3.12. The distribution of the electrical equipment heat load between the various upper cable spreading areas is not given in Reference 5.6. Therefore, the entire heat load is conservatively applied to each of the upper cable spreading rooms.</p> <p>3.13. Air exchange between room volumes through the various penetrations and the duct work is conservatively neglected. Based on the high heat loads of the Main Control Room and Unit 1/2 AEERs, the temperature rises will be greater in these rooms than in the other surrounding rooms served by the VC system. Therefore, warm air will exfiltrate from the Main Control Room and AEERs to the cooler rooms. Thus, neglecting the exfiltration conservatively maximizes the final temperatures of the rooms being modeled.</p> <p>3.14. It is assumed that the 18 °F air temperature rise described in Reference 5.7 for motor control centers is a reasonable guideline for all of the electrical cabinets examined in the current analysis.</p>		
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<p>3.15. The gross volumes of the electrical cabinets in the Unit 1/2 AEERs and the Main Control Room are reduced by 20% to account for the electrical components and supports.</p> <p>3.16. The open ventilation area in the shell of the electrical cabinets in the Unit 1/2 AEERs is assumed to be 10% of the total floor area of the panels. This estimation is arbitrary since the ventilation heat transfer coefficient is determined such that the total cabinet heat load dissipated by ventilation is conserved at steady state conditions.</p> <p>3.17. The initial temperature of the air shaft that bounds the Unit 2 AEER at column Q between columns 23 and 24 is conservatively assumed to be 104 °F. This is conservative since Reference 5.5 indicates that the shaft has a maximum temperature of 77 °F. This assumption was made because the source of the air in the shaft was unknown at the time of the calculation.</p> <p>3.18. The initial temperature gradient in the hollow block walls that separate the Unit 1/2 AEERs from the initially warmer VC Equipment rooms is conservatively estimated by utilizing the temperature distribution from an equivalent portion of a solid block wall with the same outer dimensions of the hollow block and exposed to the same boundary conditions.</p> <p>3.19. The Main Control Room cabinets are divided into two categories: ventilated and non-ventilated. The ventilated cabinets are numbers 1(2)PM01J through 1(2)PM06J and they serve as a return air path for the room HVAC system. The portion of the heat load that is attributable to the Main Control Room cabinets is conservatively placed entirely within the ventilated panels. Therefore, the transmission of the cabinet heat load through the shell of the non-ventilated panels is conservatively neglected. However, the external surfaces of the non-ventilated panels are utilized as a heat sink in the Main Control Room.</p>					
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<p>4. DESIGN INPUT</p> <p>4.1. The dimensions of the various rooms and the constructions of the walls, ceilings, and floors are obtained from Reference 5.1. The resulting surface areas and volumes are detailed in Attachment A.</p> <p>4.2. The initial and relevant post-fire temperatures of the Main Control Room, the Unit 1/2 Auxiliary Electrical Equipment Rooms, and their associated boundaries are obtained from Reference 5.5. These temperatures are summarized in Table I.</p> <p>4.3. The bounding Byron/Braidwood equipment heat loads for the Main Control Room, Unit 1/2 AEERs, and the Upper Cable Spreading Areas are:</p> <table data-bbox="357 755 1380 904"> <tr> <td>Main Control Room:</td><td>224,848 Btu/hr</td><td>(Ref. 5.6)</td></tr> <tr> <td>Unit Aux. Electrical Equipment Room:</td><td>160,541 Btu/hr</td><td>(Ref. 5.6)</td></tr> <tr> <td>Unit 2 Aux. Electrical Equipment Room:</td><td>136,411 Btu/hr</td><td>(Ref. 5.6)</td></tr> <tr> <td>Upper Cable Spreading Areas:</td><td>34,404 Btu/hr</td><td>(Ref. 5.6)</td></tr> </table> <p>These heat loads are based on heat capacitance verification data.</p> <p>4.4. The dimensions and construction details of the electrical cabinets in the AEERs and the Main Control Room are obtained or estimated from References 5.3 and 5.4 respectively, and the results are detailed in Attachment B.</p> <p>4.5. The thermophysical properties of dry air are obtained from Reference 5.10. The thermophysical properties of medium and high density masonry block are estimated from References 5.10 and 5.17.</p> <p>4.6. The density, specific heat, and thermal conductivity of steel and steel reinforced concrete are obtained from Reference 5.13.</p> <p>4.7. The emissivities of painted steel and concrete are obtained from References 5.10 and 5.11.</p> <p>4.8. The limiting sol-air temperature for a horizontal surface is 162 °F (Ref. 5.8, page 26.6). The corresponding heat transfer coefficient is 3.0 Btu/hr-°F-ft<sup>2</sup>.</p> <p>4.9. The minimum face shell thickness of a 12" x 8" x 16" hollow masonry block is 1.5" (Ref. 5.17).</p> <p>4.10. The face sheets of the hollow metal doors are constructed of 16 gauge (0.059") steel (Ref. 5.1.17).</p>			Main Control Room:	224,848 Btu/hr	(Ref. 5.6)	Unit Aux. Electrical Equipment Room:	160,541 Btu/hr	(Ref. 5.6)	Unit 2 Aux. Electrical Equipment Room:	136,411 Btu/hr	(Ref. 5.6)	Upper Cable Spreading Areas:	34,404 Btu/hr	(Ref. 5.6)
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Upper Cable Spreading Areas:	34,404 Btu/hr	(Ref. 5.6)												
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Table I: Summary of Initial Temperatures and Transient Conditions

Room No.	Room Description	Floor Elev.	Initial Temperature	Transient Condition
N/A	Aux. Bldg. HVAC Exhaust Tunnel	477' -0"	122 °F	122 °F
N/A	Aux. Bldg. Tank Vent Area	477' -0"	122 °F	122 °F
N/A	Upper CR Area "B"	463' -5"	90 °F	Calculated
N/A	Upper CR Area "C"	463' -5"	90 °F	Calculated
N/A	Upper CR Area "H"	463' -5"	90 °F	Calculated
N/A	Upper CR Area "G"	463' -5"	90 °F	Calculated
A-409	Main Control Room	451' -0"	77 °F	Calculated
A-401	Unit 1 AEER	451' -0"	77 °F	Calculated
A-415	Unit 2 AEER	451' -0"	77 °F	Calculated
A-408	Unit 1 Computer Room	451' -0"	77 °F	Adiabatic
A-410	Unit 2 Computer Room	451' -0"	77 °F	Adiabatic
A-403	Unit 1 Records Stor. Area	451' -0"	77 °F	Adiabatic
A-405	Unit 2 Records Stor. Area	451' -0"	77 °F	Adiabatic
A-411	Main Control Room Restroom	451' -0"	77 °F	Adiabatic
N/A	Unit 1 Cable Riser	451' -0"	77 °F	Adiabatic
N/A	Unit 2 Cable Riser	451' -0"	77 °F	Adiabatic
N/A	HVAC Eq. Rm. # 3	451' -0"	104 °F	Adiabatic
N/A	HVAC Eq. Rm. # 4	451' -0"	104 °F	Adiabatic

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Room No.	Room Description	Floor Elev.	Initial Temperature	Transient Condition
N/A	Unit 1/2 VC System Intake Plenums	451' -0"	104 °F	Adiabatic
A-413	Men's Locker Room	451' -0"	77 °F	Adiabatic
A-414	Men's Shower	451' -0"	77 °F	Adiabatic
A-407	Men's Bathroom	451' -0"	77 °F	Adiabatic
A-406	Kitchen	451' -0"	77 °F	Adiabatic
A-402	Control Rm. Corr.	451' -0"	77 °F	Adiabatic
N/A	Stair A-2	451' -0"	77 °F	Adiabatic
N/A	Stair A-5	451' -0"	77 °F	Adiabatic
A-416	Control Rm. Corr.	451' -0"	77 °F	Adiabatic
A-417	Security Control Center	451' -0"	77 °F	Adiabatic
A-404	Electrical Shop	451' -0"	77 °F	Adiabatic
N/A	Stair A-3	at 451' -0"	105.1 °F	105.1 °F
N/A	East Aux. Bldg. Elevator	at 451' -0"	105.1 °F	105.1 °F
T-303-T-306	Turbine Bldg. Offices West of the Control Rm.	451' -0"	77 °F	77 °F
N/A	Aux. Bldg. HVAC Intake and Cooling Coil Plenums	451' -0" & 459' -2"	105.1 °F	105.1 °F
N/A	Lower CR Area "B"	439' -0"	108 °F	Adiabatic
N/A	Lower CR Area "D"	439' -0"	108 °F	Adiabatic
N/A	Lower CR Area "E"	439' -0"	108 °F	Adiabatic
N/A	Lower CR Area "F"	439' -0"	108 °F	Adiabatic

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5. REFERENCES

5.1. Braidwood Drawings

	<u>Drawing No.</u>	<u>Rev.</u>
5.1.1.	A-28	AM
5.1.2.	A-41	Z
5.1.3.	A-100	N
5.1.4.	A-262	BN
5.1.5.	A-263	BJ
5.1.6.	A-267	CS
5.1.7.	A-268	CK
5.1.8.	A-270	V
5.1.9.	A-271	AR
5.1.10.	A-272	P
5.1.11.	A-282	BF
5.1.12.	A-283	AW
5.1.13.	A-287	M
5.1.14.	A-303	K
5.1.15.	A-318	AE
5.1.16.	A-319	AV
5.1.17.	A-480	AC
5.1.18.	A-490	AK
5.1.19.	A-491	AJ
5.1.20.	A-492	AB
5.1.21.	M-96, Sht. 3	T
5.1.22.	M-96, Sht. 4	W
5.1.23.	M-1323, Sht. 2	T
5.1.24.	M-1323, Sht. 3	AT
5.1.25.	M-1323, Sht. 6	Z
5.1.26.	S-718	CD
5.1.27.	S-721	CB
5.1.28.	S-729	BM
5.1.29.	S-732	BM
5.1.30.	S-1310	CK
5.1.31.	S-1311	CY
5.1.32.	S-1616	CH
5.1.33.	S-1617	BS

Latest drawing revisions verified through EWCS by Florinda Bonsol on 6/23/97.

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5.4.1.	20E-0-3372B	AE	
5.4.2.	20275-M1	2	
5.4.3.	20275-M2	2	
5.4.4.	20275-M3	2	
5.4.5.	20275-M4	2	
5.4.6.	20275-M5	3	
5.4.7.	20275-M6	3	
5.4.8.	20275-M11	1	
5.4.9.	20275-M12	1	
5.4.10.	20275-M13	1	
5.4.11.	20275-M14	1	
5.4.12.	20275-M21	0	
5.4.13.	20275-M22	0	
5.4.14.	20275-M23	0	
5.4.15.	20275-M24	0	
5.4.16.	20275-M25	0	
5.4.17.	20275-M32	0	
5.4.18.	20275-M42	0	
5.4.19.	20275-M51	1	
5.4.20.	20275-M52	0	
5.4.21.	20275-M53	1	
5.4.22.	20275-M54	0	
5.4.23.	20275-M61	1	
5.4.24.	20275-M62	1	
5.4.25.	20275-M64	0	
5.4.26.	20275-M71	1	
5.4.27.	20275-M72	1	
5.4.28.	20275-M73	1	
5.4.29.	3D45900, Sht. 4	A	
5.4.30.	3D45900, Sht. 5	A	
5.4.31.	3D45900, Sht. 6	A	
5.4.32.	3D45900, Sht. 7	A	
5.4.33.	3D45900, Sht. 8	A	
5.4.34.	3D45900, Sht. 9	A	
5.4.35.	3D45901, Sht. 5	A	
5.4.36.	3D45901, Sht. 6	A	
5.4.37.	3D45901, Sht. 7	A	
5.4.38.	3D45902, Sht. 4	A	
5.4.39.	3D45906, Sht. 4	A	
5.4.40.	3D45906, Sht. 5	A	
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5.4.41. 3D45906, Sht. 6	A
5.4.42. 3D45906, Sht. 7	A
5.4.43. 3D45906, Sht. 8	A
5.4.44. 3D45907, Sht. 4	A
5.4.45. 3D45907, Sht. 5	A
5.4.46. 3D45907, Sht. 6	A
5.4.47. 3D45908, Sht. 5	A
5.4.48. 3D45908, Sht. 6	A
5.4.49. 3D45908, Sht. 7	A

Latest drawing revisions verified through EWCS by Florinda Bonsol on 6/23/97.

5.5. Byron/Braidwood UFSAR, Section 3.11, Revision 6.

5.6. Calculation NED-H-MSD-32, Byron and Braidwood Main Control Room Required Heat Load Calculation, Revision 0.

5.7. IEEE Std. 649-1991, IEEE Standard for Qualifying Class 1E Motor Control Centers for Nuclear Power Generating Stations.

5.8. 1993 ASHRAE Handbook: Fundamentals, I-P Edition, American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., Atlanta, 1993.

5.9. HVAC Heating and Cooling Loads, User's Manual, Sargent & Lundy Program No. 03.7.164-2.0, Appendix 1: Material Codes & Properties, July 1995.

5.10. Incropera, F. P. and D. P. DeWitt, *Introduction to Heat Transfer*, 2nd edition., John Wiley & Sons, New York, 1990.

5.11. McAdams, W. H., *Heat Transmission*, 3rd edition., McGraw-Hill Inc., New York, 1954.

5.12. Brown, W.G., et. al., "Heat and Moisture Flow Through Openings by Convection," Technical Paper, ASHRAE Journal, September, 1963.

5.13. NUREG-0800, Section 6.2.1.5, Minimum Containment Pressure Analysis for Emergency Core Cooling System Performance Capability Studies, Table II, Revision 2, July 1981.

5.14. Westinghouse Instruction Bulletin IB-103-101, Introduction to 7300 Series Nuclear Power-Plant Control Instrumentation, July 1974, Submitted to Commonwealth Edison under Specification F-27020320.

5.15. Sargent & Lundy Standard STD-EE-321, Lighting Intensities For Power Stations, 9/17/84.

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<p>5.16. Sargent &amp; Lundy Standard ESC-525, Electrical Engineering Reference for Ventilation Requirements in Enclosed Rooms, 9/5/86.</p> <p>5.17. Sargent &amp; Lundy Standard SDS-E18.3, Concrete and Brick Masonry, Revision 1, 6/17/92.</p> <p>5.18. KITTY6: Thermal-Hydraulic Transients in Arbitrary Solid and/or Fluid Channel Configurations, Sargent &amp; Lundy Program No. 03.7.481-6.0, October, 1996.</p>				
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6. CALCULATIONS

6.1. Nomenclature

A	Surface area (ft <sup>2</sup> )
A <sub>vent</sub>	Area available for ventilation (ft <sup>2</sup> )
c <sub>p</sub>	Specific heat of air at constant pressure (Btu/lb <sub>m</sub> -°F)
F	Radiation factor for surface to surface transmission (dimensionless)
g	Gravitational acceleration ( = 4.17 · 10 <sup>8</sup> ft/hr <sup>2</sup> )
h <sub>H</sub>	Heat transfer coefficient for heat exchange through a partition opening (Btu/hr-ft <sup>2</sup> -°F)
h <sub>horz</sub>	Natural convection heat transfer coefficient for a horizontal plate (Btu/hr-ft <sup>2</sup> -°F)
h <sub>r</sub>	Radiation heat transfer coefficient (Btu/hr-ft <sup>2</sup> -°F)
h <sub>vent</sub>	Electrical cabinet ventilation heat transfer coefficient (Btu/hr-ft <sup>2</sup> -°F)
h <sub>vert</sub>	Natural convection heat transfer coefficient for a vertical plate (Btu/hr-ft <sup>2</sup> -°F)
Δh <sub>NPL</sub>	Height from the midpoint of the lower openings of an enclosure to the Neutral Pressure Level (ft)
K	Discharge coefficient for an opening
k	Thermal conductivity (Btu/hr-ft-°F)
L	Mean beam length defined for a gas volume radiating to a surface (ft)
m	Mass (lb <sub>m</sub> )
ṁ	Mass flow rate (lb <sub>m</sub> /hr)
Q	Volumetric air flow rate (ft <sup>3</sup> /hr)
q	Heat transfer rate (Btu/hr)
q <sub>cab</sub>	Total cabinet heat load (Btu/hr)
q <sub>o</sub>	Heat transfer rate from the outer shell of the electrical cabinets (Btu/hr)
q <sub>room</sub>	Heat dissipation rate from electrical cabinets to a room at steady state (Btu/hr)
R	Thermal resistance (°F-hr/Btu)
T <sub>s</sub>	Heat structure surface temperature (°F)
T <sub>∞</sub>	Average room temperature (°F)
ΔT	Temperature difference between the room air and the heat structure surface (°F)
t	Thickness (ft)
V	Volume (ft <sup>3</sup> )

Greek:

α <sub>w</sub>	Water vapor absorptivity
χ	Fraction of unquantified electrical cabinet internal steel credited as a heat sink
ε <sub>s</sub>	Heat structure surface emissivity
ε <sub>w</sub>	Water vapor emissivity
φ	Relative humidity
γ	Area reduction factor for openings in the outer shell of an electrical cabinet
μ	Dynamic viscosity of air (lb <sub>m</sub> /ft-hr)
ν	Kinematic viscosity of air (ft <sup>2</sup> /hr)
ρ	Density (lb <sub>m</sub> /ft <sup>3</sup> )

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$\rho_{a,avg}$  Density of air based on the average temperatures of two enclosures separated by a small opening ( $\text{lb}_m/\text{ft}^3$ )  
 $\sigma$  Stefan-Boltzman constant ( $= 0.1714 \cdot 10^{-8} \text{ Btu/hr-ft}^2 \cdot ^\circ\text{R}^4$ )

Subscripts:

a Air  
cab Cabinet air  
i Index for a distinct section of the outer shell of an electrical cabinet  
int Portion of the outer shell of an electrical cabinet not exposed to room air  
j Index for a single electrical cabinet  
l Laminar  
n Total number of electrical cabinets within a room  
nc Natural convection  
out Portion of the outer shell of an electrical cabinet exposed to the room air  
open Openings in the outer shell of an electrical cabinet  
q Quantified internal electrical cabinet structural steel  
r Thermal radiation  
s Surface  
ss Steady-state  
steel Steel  
t Turbulent  
u Unquantified internal electrical cabinet structural steel  
vent Electrical cabinet ventilation  
w Water vapor  
1 Internal surface of an electrical cabinet shell  
2 External surface of an electrical cabinet shell

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<p>6.2. Transient Temperature Calculation for the Main Control Room and AEERs</p> <p>As stated in Section 2, the transient temperature profiles for the Main Control Room and the Auxiliary Electrical Equipment Rooms are determined using KITTY6 (Ref. 5.18). The model consists of 409 nodes and 701 heat transfer paths. All of the Unit 1/2 AEER and Main Control Room boundary volumes, heat structures, and associated heat transfer paths are included in the model. However, due to the adiabatic assumption, many of the nodes and paths are not activated. The KITTY6 input file is given in Attachment F.</p> <p>Due to the large size of the model, a nodal diagram is impractical. However, the KITTY6 input file given in Attachment F contains detailed annotations for each line. The comments begin at the "/" character and the first number indicates the record type with "5" indicating a node and "6" specifying a heat transfer path. Each air volume node is labeled with the name of the volume it represents and the heat structures (walls, floors, ceilings, and steel panels) are described by their material composition and the two volumes that they separate. Furthermore, the wall, floor, and ceiling nodes are also described in detail in Attachment A. For the heat transfer paths, the comments in the KITTY6 input file include a description of the heat transfer mode (NC = Natural Convection, Cnd = conduction, Rad = Radiation, etc.) and a summary of the surface nodes that the path connects. For a typical heat structure, there are 5 paths: natural convection and water vapor to surface radiation on each of the two surfaces and a conduction path through the heat structure.</p> <p>The heat transfer coefficients utilized in the KITTY6 model for natural convection and water vapor to surface radiation between the room volumes and the various heat sinks are detailed in Sections 6.3 and 6.4 respectively. The thermal modeling of the electrical cabinets is detailed in Sections 6.5 through 6.8.</p> <p>6.3. Natural Convection Heat Transfer Coefficient</p> <p>Natural convection heat transfer between the vertical heat structures and the room volumes is modeled using the simplified correlation for air shown below in Equation (1) (Ref. 5.11, pg. 173).</p> $h_{\text{vert}} = 0.19(\Delta T)^{1/3} \quad (1)$ <p>Natural convection heat transfer between horizontal heat structures that are heated and facing upwards or cooled and facing downwards and the room volumes is modeled using the simplified correlation for air given in Equation (2) (Ref. 5.11, pg. 180).</p> $h_{\text{horz}} = 0.22(\Delta T)^{1/3} \quad (2)$		
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The correlations of Equations (1) and (2) are applicable for turbulent conditions and they are applied at the surfaces of walls, ceilings, floors, and electrical cabinets. Due to the large characteristic lengths of the various room partitions (greater than 10 feet), turbulent conditions will exist. However, upon inspection it is undetermined whether turbulent or laminar flow exists on the surface of the electrical cabinets. Therefore, the applicability of the turbulent natural convection heat transfer coefficients on the electrical cabinet surfaces is addressed and justified in Attachment C. Heat transfer between the room volumes and horizontal heat structures that are cooled and facing upwards or heated and facing downwards is modeled using conduction through an air layer equal to 1/2 the height of the adjacent room.

#### 6.4. Water Vapor to Surface Radiation Heat Transfer Coefficient

Radiation heat transfer between water vapor in the rooms and exposed heat structure surfaces is modeled using the fundamental relation shown below in Equation (3) (Ref. 5.11).

$$q_r = A\sigma[(1 + \epsilon_s) / 2] \cdot [\epsilon_w T_w^4 - \alpha_w T_s^4] \quad (3)$$

The parameter  $(1 + \epsilon_s) / 2$  accounts for the gray body effects of the heat structure surfaces where  $\epsilon_s$  is the surface emissivity. The parameters  $\epsilon_w$  and  $\alpha_w$  are the water vapor emissivity and absorptivity respectively. In the current model, the water vapor absorptivity and emissivity are conservatively assumed to be equal. This assumption underestimates the absorptivity by less than 5 % and it greatly simplifies the analysis by allowing an effective radiation heat transfer coefficient to be defined as shown in Equation (4).

$$h_r = \sigma\epsilon_w[(1 + \epsilon_s) / 2](T_w + T_s)(T_w^2 + T_s^2) \quad (4)$$

The emissivity of the water vapor is a function of the vapor temperature, vapor partial pressure, total pressure, and mean beam length. The mean beam length,  $L$ , for an arbitrary room of volume,  $V$ , and surface area,  $A$ , is given by Equation (5) (Ref. 5.10, pg. 788).

$$L = 3.6 \cdot V / A \quad (5)$$

The relationship given in Equation (5) is a fundamental description of the mean beam length for a simple enclosure of arbitrary shape. However, the interference of equipment, cable trays, ducts, and partitions can affect the applicability of Equation (5). Therefore, the value of  $L$  determined from Equation (5) is conservatively reduced by 20 % in the current analysis.

Once the values of the mean beam length, the vapor temperature, the vapor partial pressure, and the total pressure are known, the value of the water vapor emissivity is estimated from Figure 4-15 of Reference 5.11. The calculation of the water vapor emissivity is detailed in Attachment C for the Main Control Room and the Unit 1 AEER. A single value is utilized in the model for all active rooms based on the results obtained in Attachment C.

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<p>6.5. Electrical Cabinet Thermal Model</p> <p>The major contributors to the heat load in both the Main Control Room and the Auxiliary Electrical Equipment Rooms are the electrical cabinets. The cabinets dissipate heat to the room via two mechanisms: transmission through the cabinet shell and air exchange through the ventilation louvers and openings. At steady state conditions, all of the heat generated within the cabinets is transferred to the room by these two mechanisms. However, in response to a significant transient condition such as an increasing room temperature due to a loss of ventilation, the cabinet air and electrical components will rapidly increase in temperature. Therefore, a portion of the energy generated within the cabinets will be transferred to the cooler shell and structural steel of the cabinet. As a result, the net heat exchange between the cabinets and the room volume during a transient will be less than the heat dissipated at steady state.</p> <p>The construction of the electrical cabinets, the type of generating components within the cabinets, and the associated heat loads vary throughout the rooms being modeled. However, a simplified model is utilized that conservatively combines all of the cabinets within each room into one heat source, with the ratio of the internal volume to outer shell surface area conserved. In the model, the total heat load from the electrical components is conservatively assumed to be dissipated directly and instantaneously to the cabinet air. The heat is then transferred from the cabinet air to the cabinet mass and to the ambient room air via ventilation. The simplified model bounds the actual cabinet heat dissipation dynamics for the following reasons. First, many of the heat sources such as power supplies and relays are mounted on internal heat sinks which are not modeled. A portion of the heat generated by these components will be conducted to the heat sinks first, and then the energy will be convected and radiated to the cabinet air and structural steel. Therefore, there will be an additional heat dissipation time lag in the actual cabinet that is not accounted for in the current model. Next, the heat capacity of the actual electrical devices which generate heat is neglected. Finally, the amount of structural steel that is available as a heat sink and its corresponding surface area are conservatively minimized. Therefore, the heat dissipation to the room via natural convection induced air exchange is maximized. As a result of the simplifications, the rate of heat dissipation to the room is conservatively maximized. The detailed calculation of all of the heat transfer paths and the estimation of the mass and surface area of the heat structures are presented in the following sections.</p> <p>6.6. Electrical Cabinet Mass and Surface Area Estimation</p> <p>The mass of the cabinets is divided into three broad categories when constructing the thermal model: the outer cabinet shell, the enclosed structural steel, and the electrical component mass. The outer cabinet shell is comprised of the steel that forms the boundary of the cabinet. The enclosed structural steel encompasses the steel that is contained within the cabinet shell and is therefore not in direct contact with the room air. This category includes the sides of the cabinets when they are mounted directly adjacent to one another. The electrical component mass is all of the material that comprises the actual electrical devices and it is conservatively neglected in the current cabinet thermal model.</p>		
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In determining the configuration for the lumped cabinet model, the width and depth of all of the cabinets within each of the rooms are first determined yielding a "footprint" area. As a result of the large number of cabinets contained within each of the rooms, the configurations of a representative sample are used to estimate the details of the general population of cabinets. For the electrical cabinets in the Unit 1/2 AEERs and the non-ventilated cabinets in the Main Control Room, the ratios of the total cabinet weight, structural steel weight, and structural steel surface area to the corresponding footprint area of each of the cabinets in the sample are determined. The minimum value of each of the ratios is then used to estimate the associated parameter for each of the cabinets in the general population. Furthermore, the minimum height of the sample cabinets is also conservatively used to estimate the height of the unknown cabinets. For the ventilated cabinets in the Main Control Room, all of the parameters are determined in a similar manner, however, the weight is estimated by utilizing the cabinet weight to volume ratio as an estimation parameter. The values obtained for the cabinets in the Main Control Room and the AEERs are given in Attachment B.

#### 6.6.1. Outer Shell Surface Area and Mass

Once the dimensions and weights of the cabinets have been determined, the surface area and mass of the outer cabinet shell are calculated. The surface area of the outer shell for a single cabinet,  $A_{out,j}$ , includes the front, back, and top steel sheets. In addition, if either of the sides of the cabinet are exposed to the room, then they are also included in the outer shell surface area. For the cabinets in the Unit 1/2 AEERs, the total surface area of the outer shell for the representative cabinet used in the model is determined by summing the surface areas of the individual cabinets and reducing the result by a factor,  $\gamma$ , to account for the openings of louvers and cable entry points as shown in Equation (6).

$$A_{out} = (1 - \gamma) \cdot \sum_{j=1}^n A_{out,j} \quad (6)$$

The total mass of the outer shell is then calculated using a representative thickness of the shell,  $t_{out}$ , as shown in Equation (7).

$$m_{out} = A_{out} \cdot t_{out} \cdot \rho_{steel} \quad (7)$$

The characteristics of the outer shell for the ventilated Main Control Room cabinets are determined in an analogous manner, however, the shell is comprised of different sections, each having a different thickness. Furthermore, the surface area of the front of the cabinet shell is reduced by a factor to account for instrumentation instead of openings. The instrumentation is assumed to have a thickness and it is included as part of the shell.

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### 6.6.2. Internal Steel Mass and Surface Area

For the electrical cabinets in the Unit 1/2 AEERs, the total quantity of internal steel mass is comprised of two components: the sides of the cabinets that are not exposed to the room air and the internal structural steel. The internal structural steel is further divided into two groups: material that can be easily quantified and material that cannot be easily quantified. Each of the three internal steel groups has a different representative thickness, therefore, they are modeled separately. The surface area and mass evaluations of the cabinet side sheets follow the general methodology described for the outer shell, however, the resulting surface area is not reduced to account for openings in the shell because the sides are generally completely enclosed. In the model, heat transfer is assumed to occur only to the surface facing the cabinet air. The cabinet side panel surface that faces the other cabinet is conservatively assumed to be adiabatic.

The quantifiable internal steel consists of the channels and beams that comprise the mounting base. The primary reason for focusing on the mounting base is that it is constructed of heavy channels and beams as needed to support the entire weight of the cabinet, therefore, it accounts for a large portion of the cabinet mass. In addition, the drawings for the mounting base were readily available. To determine the characteristics of the mounting base, the structural members that are commonly used are identified and their weight per linear foot and surface area per linear foot are obtained. Then, a representative sample of the cabinets is examined and the total amount of mounting base steel is determined. Next, the ratios of the mass and surface area to the footprint area are calculated for each cabinet in the sample. The minimum mass and surface area ratios identified from the sample cabinets are then used to estimate the internal structural steel mass and surface area for the general population of cabinets. Finally, a representative thickness of all of the mounting base steel is determined via Equation (8) and it is used in the cabinet model.

$$t_q = \frac{m_q}{\rho_{\text{steel}} \cdot A_q} \quad (8)$$

The mounting base surface area that is credited,  $A_q$ , is less than half of the total surface area of the structural members. This is a conservative estimate and it is made to account for surfaces that are not exposed to the cabinet air. Therefore, the thickness determined from Equation (8) is a conservative representation of the average thickness of the mounting base structural steel.

Next, the combined mass of the outer shell and the quantified internal steel is subtracted from the total weight of the cabinets yielding a net unquantified mass. A portion of this mass,  $\chi$ , is then assumed to be available as a heat sink and the surface area of the unquantified heat sink mass is calculated from Equation (9) by assigning it a representative thickness,  $t_u$ .

$$A_u = \frac{\chi(m_{\text{cab}} - m_{\text{out}} - m_{\text{int}} - m_q)}{\rho_{\text{steel}} t_u} \quad (9)$$

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The fraction of heat sink mass available,  $\chi$ , and the representative thickness of that mass,  $t_u$ , are conservatively estimated based on the construction of the cabinets indicated in References 5.3, 5.4, and 5.14. By conservatively estimating  $t_u$ , the surface area of the heat sink,  $A_u$ , is conservatively minimized. The heat transfer coefficients for the cabinet shell and the structural steel will be addressed in the following sections.

The ventilated Main Control Room cabinets are evaluated in an analogous manner to the Unit 1/2 AEER cabinets. However, the internal construction of the Main Control Room cabinets is too complex to quantify in a reasonable amount of time. Therefore, the weight of the cabinet shell is the only parameter subtracted from the total cabinet mass in Equation (9).

#### 6.7. Convective and Radiative Heat Transfer Between the Cabinet Mass and the Air Volumes

The cabinet mass that is included in the current model exchanges heat with its surroundings via two primary mechanisms: natural convection and radiation. Additionally some mass within the cabinet will be in direct physical contact with the heat sources and therefore will also exchange heat through conduction. However, the heat transferred via conduction will be from the electrical devices to the internal mounting surfaces of the cabinets which do not directly interface with the room air. This reduces the net heat dissipation to the air during a transient, therefore, the effect of the direct contact heat sinks is conservatively neglected in the current model. The magnitude of the combined radiative and convective heat transfer coefficient varies depending on the geometrical configuration of the structures and the nature of the radiating medium. The following sections will address each of the heat transfer scenarios present in the simplified cabinet model.

##### 6.7.1. Convection and Radiation Between the Cabinet Shell and the Cabinet Air Mass

Natural convection heat transfer between the cabinet air mass and the outer shell is modeled as turbulent and the heat transfer coefficients given in Equations (1) and (2) are utilized for the cabinet vertical and horizontal surfaces respectively. The validity of using the turbulent natural convection heat transfer coefficients on the electrical cabinet shell is discussed in Attachment C.

For radiative heat transfer, the form of the heat transfer coefficient is modified to account for gray body transmission from the surfaces of the electrical components and their internal enclosures. The cabinet outer shell and the internal components are separated by relatively small distances, therefore, surface to surface radiation becomes much more important than water vapor emission and absorption. The modified form of the radiation heat transfer coefficient is given in Equation (10).

$$h_r = \sigma \epsilon_{\text{steel}} F (T_{\text{cab}} + T_s)(T_{\text{cab}}^2 + T_s^2) \quad (10)$$

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In the current model, the temperatures of the radiating surfaces within the cabinet are represented by the cabinet air volume. This is a necessary simplification due to the fact that the hot surfaces of the electrical components are not modeled. Furthermore, the use of one radiation heat transfer coefficient is in itself a simplification since there are many radiating surfaces and each will have a different value of  $F$ . Therefore, the conservatism in this approach depends primarily on the estimation of  $F$ . Since it is conservative to increase the heat dissipation rate to the room volume, and since the radiation heat transfer coefficient is a governing factor for the transmission of energy through the outer shell, it would be conservative to increase the radiation heat transfer coefficient if all of the other heat transfer paths to the room are fixed. However, in the current model the natural convection induced air exchange through the various openings is determined by balancing shell transmission and ventilation heat transfer at steady state conditions. Therefore, as the radiation heat transfer coefficient increases, the magnitude of heat transfer via air exchange is decreased and the rate of heat dissipation to the room is also decreased since transmission of heat through the shell during the transient involves heat storage in the shell mass. Thus, the parameter  $F$  in Equation (10) and the natural convection induced air exchange are not independent in the current model. As a result, careful consideration must be given to the estimation of  $F$  since it is conservative to minimize its value, however, it is clear that surface to surface radiation will play an important role within the cabinet.

In Equation (10), the parameter  $F$  is a simplified representation of a complicated expression which depends on the emissivities, view factors, and area ratios of the surfaces. The determination of  $F$  generally cannot be analytically resolved for configurations as complicated as the internal surfaces of the electrical cabinets currently being modeled. However, the general dependencies of  $F$  on the emissivities, view factors, and area ratios are known and they are used as guidelines in the estimation of  $F$ . Specifically, the value of  $F$  increases as the emissivities and view factors associated with the surfaces increase. Due to the fact that the cabinet completely encloses the radiating electrical components, all of the thermal radiation that is emitted by the components will be intercepted by some structure within the cabinet, therefore the view factor between the radiating surfaces and the cabinet heat sink mass will be unity. Furthermore, the emissivities of the heat generating components and their enclosures are generally on the order of the steel sheets to which they are emitting. Therefore, the emissivity is not a limiting factor. However, the value of  $F$  decreases as the surface area ratio of the cabinet shell to the radiating components increases and this ratio is difficult to estimate.

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<p>The determination of the surface area ratio of the outer cabinet shell to the radiating components depends on which surfaces are considered. The actual surface area of the electrical components themselves will be small, however, their temperatures will be larger than the air temperature that is used to estimate radiation heat transfer in the current model. Furthermore, the electrical components are generally mounted in or upon drawers, frames, and enclosures which are constructed of thin gauge steel that are not accounted for in the model. Due to the relatively small heat capacity of the internal mounting steel, it will increase in temperature more rapidly than the heavier shell and structural steel that is included in the model and it will therefore be near the air temperature. In addition, while the temperature of the internal steel is less than the actual electrical components, its surface area is much larger such that it is comparable to the surface area of the outer shell. Therefore, considering the internal enclosure steel, the surface area ratio of the outer cabinet shell to the internal surfaces is estimated to be between approximately 3.0 to less than 1.0. If the view factor, emissivities, and area ratio are all unity for a surface radiating to an enclosure, the value of F would also be unity. Thus, given the relatively large values of the view factors and emissivities, and given the comparable surface areas, a conservative F value of 0.5 is implemented in the model.</p> <p>6.7.2. Convection and Radiation Between the Cabinet Structural Steel and Air Mass</p> <p>The general configuration of the structural steel within the cabinet varies greatly, therefore, the value of the heat transfer coefficient is largely unknown. As a result, a conservative and constant heat transfer coefficient of <math>0.7 \text{ Btu/hr-}^{\circ}\text{F-ft}^2</math> is applied to all of the structural steel surfaces. The details of this calculation are given in Attachment C. This value is based on a combination of the natural convection heat transfer coefficient for turbulent conditions on a vertical plate given in Equation (1) and the value of the radiation heat transfer coefficient given in Equation (10) with both evaluated at a temperature difference of <math>1^{\circ}\text{F}</math>. Additionally, since the radiation heat transfer coefficient depends on the absolute temperatures of the surfaces, an initial cabinet temperature of <math>95^{\circ}\text{F}</math> is used in conjunction with a structural steel surface temperature of <math>94^{\circ}\text{F}</math> to evaluate the portion of the constant heat transfer coefficient attributable to radiation. Since the heat transfer coefficient increases with increasing temperature differences, the conservatism of the constant value increases for temperature differences greater than <math>1^{\circ}\text{F}</math>. Therefore, the impact of the internal steel heat capacity is conservatively minimized during the transient.</p>		
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## 6.8. Natural Convection Air Exchange Between the Cabinets and the Room Volumes

As a result of the temperature difference between the cabinet air and the room air, a natural convection flow pattern is established through the cabinets. Cooler air from the room enters the bottom louvers of the cabinets and it rises as it is heated by the electrical components until it eventually exits through the openings located at the top of the cabinets. The openings at the top of the cabinets include both the ventilation louvers and the gaps at the cable entry points. Generally, the flow established within the cabinets is difficult to model due to the complex and irregular configuration of the electrical components and their supports. However, a reasonable estimation of the amount of heat transferred via air exchange can be determined by considering the energy dissipation mechanisms at steady state.

At steady state conditions, the total rate of heat generation within the cabinets, which is a known quantity, is equal to the total rate of heat dissipation from the cabinets to the room. As stated earlier, the only paths by which heat is transferred from the cabinets to the room are air exchange through the various openings and transmission through the cabinet outer shell. This simple energy balance is shown in Equation (11).

$$q_{cab} = q_{room} = q_o + q_{vent} \quad (11)$$

The heat transfer rate through the shell,  $q_o$ , is determined by summing the individual rates for each distinct shell section as shown in Equation (12).

$$q_o = \sum_{i=1}^p q_i \quad (12)$$

The values of  $q_i$  are determined from the known cabinet and ambient temperatures by defining the total resistance for each section of the shell according to Equation (13).

$$q_i = \frac{(T_{cab} - T_{\infty})}{R_i} \quad (13)$$

The total resistance of a shell section,  $R_i$ , is defined as shown in Equation (14) (Ref. 5.10).

$$R_i = \frac{1}{A_i} \left( \frac{1}{h_{r,1} + h_{nc,1}} + \frac{t_i}{k_i} + \frac{1}{h_{r,2} + h_{nc,2}} \right) \quad (14)$$

In Equation (14),  $h_{r,1}$  and  $h_{nc,1}$  are the radiative and natural convection heat transfer coefficients at the internal surface of the cabinet shell, and  $h_{r,2}$  and  $h_{nc,2}$  are the radiative and natural convection heat transfer coefficients at the external surface of the cabinet shell. The form of the internal and external shell heat transfer coefficients are defined in the previous section.

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To determine the value of the ventilation heat transfer rate from Equation (11), the value of  $q_o$  must be determined from Equation (12). This introduces an additional unknown,  $q_i$ , for each of the cabinet sections. In the expression for  $q_i$ , the value of the ambient and cabinet temperatures are specified according to the initial conditions of the problem. Furthermore, the values of  $A_i$ ,  $t_i$ , and  $k_i$  are all known parameters from the geometry and construction of the cabinet. However, the value of the internal and external heat transfer coefficients depends on two additional parameters, the internal and external surface temperatures of the cabinet shell as shown below:

$$h_{r,1} = f(T_1, T_{cab})$$

$$h_{r,2} = f(T_2, T_{\infty})$$

$$h_{nc,1} = f(T_1, T_{cab})$$

$$h_{nc,2} = f(T_2, T_{\infty})$$

Therefore, two additional equations that relate the unknown surface temperatures to the known parameters must be defined for each of the cabinet sections. The two relationships are easily determined by applying the fundamental expressions of Fourier's law of conduction and Newton's law of cooling to the cabinet shell as shown in Equations (15) and (16) respectively.

$$q_i = k_i A_i \frac{T_1 - T_2}{t_i} \quad (15)$$

$$q_i = (h_{r,2} + h_{nc,2}) A_i (T_2 - T_{\infty}) \quad (16)$$

There are now three equations (Equations (13), (15) and (16)) for the three unknowns ( $T_1$ ,  $T_2$ , and  $q_i$ ) associated with each of the distinct cabinet sections. Therefore, the value of  $q_o$  is now evaluated for a given cabinet air temperature and the required ventilation heat transfer rate is determined from Equation (11). The cabinet air temperature is specified by using the guideline for motor control centers established in Reference 5.7, which states that an 18 °F air temperature rise across the cabinet is typical. It is assumed that this temperature rise is applicable for all of the electrical cabinets that are examined in the current analysis.

Once the value of  $q_{vent}$  is calculated, an effective ventilation heat transfer coefficient is defined according to Equation (17).

$$q_{vent} = h_{vent} A_{vent} (T_{cab} - T_{\infty}) \quad (17)$$

The value of the ventilation heat transfer coefficient,  $h_{vent}$ , at steady state conditions with an 18 °F temperature rise across the cabinet is determined by solving Equation (17) to yield Equation (18).

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$$h_{vent} = \frac{q_{vent}}{A_{vent}(T_{cab} - T_{\infty})} \quad (18)$$

To determine the appropriate form of the ventilation heat transfer coefficient, the total ventilation heat transfer rate is redefined as shown in Equation (19).

$$q_{vent} = \dot{m}c_p(T_{cab} - T_{\infty}) \quad (19)$$

Equations (17) and (19) are then combined and rearranged to yield an expression for the ventilation heat transfer coefficient in terms of the mass flow rate of air and the open area available for ventilation. This expression is given in Equation (20).

$$h_{vent} = \frac{\dot{m}c_p}{A_{vent}} \quad (20)$$

In Equation (20), the area available for ventilation is a specified quantity that in the case of the Main Control Room is known and for the AEER cabinets is estimated. The specific value determined for  $A_{vent}$  is not a controlling parameter of the ventilation heat transfer path because the value of the heat transfer coefficient multiplied by the area is fixed at steady state conditions according to Equation (18). Therefore, if the value of  $A_{vent}$  is underestimated, the value of  $h_{vent}$  will increase proportionally to assure that all of the cabinet ventilation heat transfer load is conserved at steady state conditions.

Once  $A_{vent}$  is specified, the value of the air mass flow rate is determined such that  $h_{vent}$  at steady state is satisfied. During the transient, the temperature difference between the cabinet air and the ambient room air will vary. Therefore, an appropriate relationship is utilized that both accounts for the varying flow rate over a range of temperature differences and matches the required mass flow at the steady state conditions.

Heat dissipation via cabinet ventilation operates under a stack effect. The cooler ambient air enters the bottom intake vents of the cabinet and it rises as it is heated by the electrical devices until it exits the cabinet at the top through vents and cable penetration openings. This flow configuration is represented by Equation (21) (Ref. 5.8).

$$Q = KA_{vent} \left[ 2g\Delta h_{NPL} (T_{cab} - T_{\infty}) / T_{cab} \right]^{0.5} \quad (21)$$

The volumetric flow rate,  $Q$ , is related to the mass flow rate and thus the definition of the heat transfer coefficient via Equation (22).

$$\dot{m} = Q \cdot \rho_{a,avg} \quad (22)$$

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In Equation (21), the parameter K is an unknown that represents the discharge coefficient of the opening. In addition to K,  $\Delta h_{NPL}$  is also an unknown that is equal to the height from the midpoint of the lower vent openings to the Neutral Pressure Level (NPL). Both K and  $\Delta h_{NPL}$  are difficult to estimate accurately for the cabinet configurations examined in the current analysis. However, the value of Q is known at steady state conditions from Equations (10) and (22). Therefore, the value of K is arbitrarily specified to be 0.5 and the value of  $\Delta h_{NPL}$  is then determined to satisfy Q. Finally, the expression for Q with the assumed value of K and the corresponding value of  $\Delta h_{NPL}$  is inserted into Equation (22) which is then combined with Equation (20) to yield the final form of the ventilation heat transfer coefficient as shown in Equation (23).

$$h_{vent} = \rho_{a,avg} c_p K [2g\Delta h_{NPL} (T_{cab} - T_{\infty}) / T_{cab}]^{0.5} \quad (23)$$

The application of Equation (21) is intended to be used to calculate the temperature induced stack effect in buildings that have little internal resistance. In the current analysis, the nature of the flow resistance is relatively unknown. However, Equation (21) represents the appropriate relationship between the temperature difference and the flow rate. Therefore, the breakdown of the constants which are multiplied by the temperature difference is not important since the total value of the collection of constants is determined by the steady state heat balance. The methodology previously described for the determination of the ventilation heat transfer coefficient is implemented in an Excel spreadsheet for each collection of ventilated cabinets modeled in the current analysis. The results of the analysis are given in Attachment D.

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7. SUMMARY AND CONCLUSIONS

The transient temperature profiles of the Byron and Braidwood Main Control Room and Unit 1/2 AEERs following a loss of the Main Control Room Ventilation (VC) System are given in Figure 1 and the temperatures at various times are summarized in Table II. The KITTY6 output file is included in Attachment F.

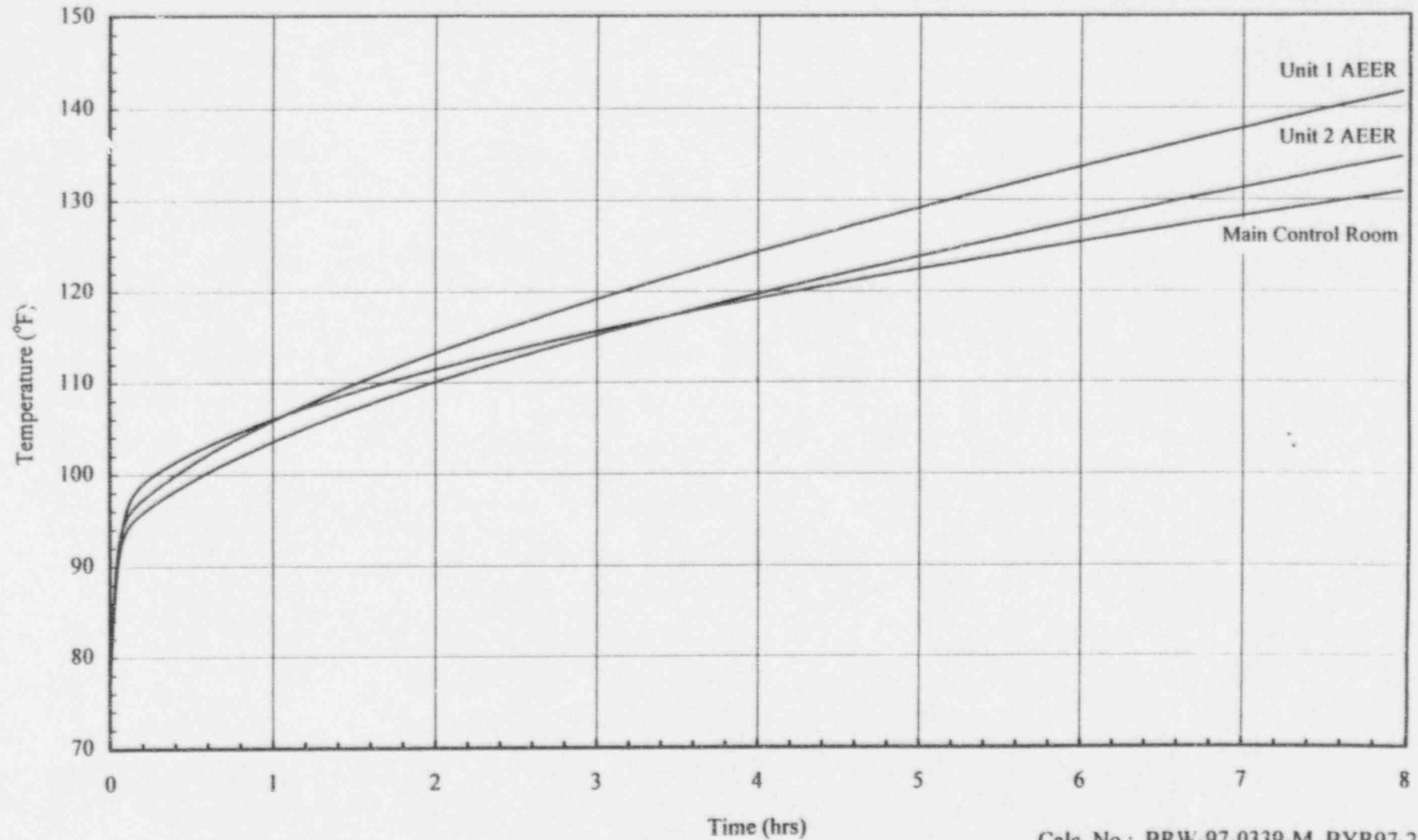
Table II: Transient Temperature Summary For the Byron/Braidwood Main Control Room and Unit 1/2 AEERs

Time (hours)	Main Control Room Temperature (°F)	Unit 1 AEER Temperature (°F)	Unit 2 AEER Temperature (°F)
0.0	77.0	77.0	77.0
0.5	102.24	101.04	99.24
1.0	106.00	105.85	103.53
2.0	111.44	113.25	110.07
3.0	115.64	119.16	115.22
4.0	119.22	124.36	119.72
6.0	125.43	133.58	127.68
8.0	130.92	141.81	134.77

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Figure 1. Transient Temperature Profiles of the Main Control Room and the Unit 1/2 Auxiliary Electrical Equipment Rooms Following A Loss of the VC System



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## Attachment A

### Heat Structure Surface Area and Room Volume Details

#### Attachment A Contents:

<u>Table No.:</u>	<u>Description:</u>	<u>Page No.:</u>
A-1	Room Volume Details	A-2
A-2	Wall Surface Area Details	A-3
A-3	Floor and Ceiling Surface Area Details	A-8
A-4	Door Surface Area Details	A-9
A-5	Unit 1/2 AEER Supply Duct Surface Area Details	A-11

**Table A-1: Room Volume Details**

Node Number	Room Description				Enclosed Structure			Volume Reduction For Equipment (%)	Net Room Volume (ft <sup>3</sup> )	Reference Drawings
		Length (ft)	Width (ft)	Height (ft)	Length (ft)	Width (ft)	Height (ft)			
1	Control Room, A-409	118.03	49.28	12				30%	48860.2	A-267, A-268, S-718, S-721
2	Unit 1 Aux. Electrical Equipment Room, A-401	47.53	51.78	12				20%	23627.1	A-267, S-729
3	Unit 2 Aux. Electrical Equipment Room, A-415	47.50	51.78	12	12.95	6.33	12.00	20%	22824.9	A-268, S-732
49	Upper CSR Area "C"	49.59	27.25	11.5				20%	27605.5	A-282, A-318, S-721
		10.92	31.25	11.5						
		38.58	31.25	12.5						
50	Upper CSR Area "H"	49.50	27.25	11.5				20%	27605.5	A-283, A-319, S-718
		10.92	31.25	11.5						
		38.58	31.25	12.5						
51	Upper CSR Area "B"	51.75	47.50	11.5				20%	22614.8	A-282, A-318, S-721
52	Upper CSR Area "G"	51.75	47.50	11.5	13.47	7.30	11.50	20%	21709.9	A-283, A-319, S-718

Note: Volumes 4-48 are comprised of nodes that are either not active due to adiabatic boundary conditions at the walls or have a constant temperature throughout the transient. As a result, their volumes are not determined.

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Attachment: A

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**Table A-2: Wall Surface Area Details**

Head Node Tail Node	Description	Length (ft)	Height (ft)	Thickness (ft)	Construction	Doors			Openings		Net Wall Surface Area (ft <sup>2</sup> )	Reference Drawings
						Door #	Width (ft)	Height (ft)	Width (ft)	Height (ft)		
56 57	Wall Between A-401 and A-409	25.57	12.00	0.969	Unreinforced Solid Concrete Block	SD 170	6	8			258.8	A-267
58 59	Wall Between A-402 and A-409	16.43	9.00	0.969	Unreinforced Solid Concrete Block						147.9	A-267
60 61	Wall Between Stair A-2 and A-409	7.57	12.00	0.969	Unreinforced Solid Concrete Block	SD 169	6	8			42.8	A-267
62 63	Wall Between A-409 and the Turbine Bldg.	118.03	12.00	3.5	Concrete	SD 171	3.375	7.333			1391.6	A-267 A-268
64 65	Wall Between A-409 and Stair A-5	10.00	12.00	0.969	Unreinforced Solid Concrete Block						120.0	A-268
66 67	Wall Between A-409 and A-416	13.95	9.00	0.969	Reinforced Solid Concrete Block						125.6	A-268
68 69	Wall Between A-409 and A-415	25.52	12.00	0.969	Unreinforced Hollow Concrete Block	SD 175	6	8			258.2	A-268
70 71	Wall Between A-409 and A-405	8.38	8.50	0.969	Unreinforced Solid Concrete Block	D 441	3	7.166			49.7	A-268
72 73	Wall Between A-409 and A-411	8.12	7.83	0.969	Unreinforced Solid Concrete Block	D 442	2.5	7.166			45.7	A-268
74 75	Wall Between A-409 and A-410	34.20	9.00	0.969	Unreinforced Solid Concrete Block	D 440	6	8.5			256.8	A-268
76 77	Wall Between A-409 and Stair A-3	9.58	12.00	1.969	Unreinforced Solid Concrete Block						115.0	A-268
78 79	Wall Between A-409 and East Aux. Bldg. Elevator	10.97	12.00	1.969	Unreinforced Solid Concrete Block						131.6	A-267
80 81	Wall Between A-409 and A-408	33.53	9.00	0.969	Unreinforced Solid Concrete Block	D 432	6	8.5			250.8	A-267
82 83	Wall Between A-409 and A-403	14.00	9.00	0.969	Unreinforced Solid Concrete Block	D 430	3	7.166			104.5	A-267
84 85	Wall Between A-401 and A-403	16.71	9.00	0.969	Unreinforced Solid Concrete Block						150.4	A-267
86 87	Wall Between A-401 & the North Aux. Bldg. Cable Riser	9.48	12.00	0.969	Unreinforced Solid Concrete Block	D 431	2.5	7.166			95.9	A-267
88 89	Wall Between A-401 & Aux. Bldg. HVAC Cooling Coil Plenum, Unit 1	20.28	12.00	3	Concrete						243.4	A-267

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Table A-2: Wall Surface Area Details

Head Node Tail Node	Description	Length (ft)	Height (ft)	Thickness (ft)	Construction	Doors			Openings		Net Wall Surface Area (ft <sup>2</sup> )	Reference Drawings
						Door #	Width (ft)	Height (ft)	Width (ft)	Height (ft)		
90 91	Wall Between A-401 & Aux. Bldg. HVAC Intake Plenum at Unit 1	26.25	12.00	3	Concrete						315.0	A-267
92 93	Wall Between A-401 and the Unit 1 VC System Intake Plenum	7.50	12.00	3	Concrete						90.0	A-267
94 95	Wall Between HVAC Rm # 3 & A-401	44.28	12.00	0.969	Unreinforced Hollow Concrete Block	D 419	3	6.75			511.1	A-267
96 97	Wall Between A-414 & A-401	6.32	7.83	0.979	Unreinforced Hollow Concrete Block						49.5	A-267
98 99	Wall Between A-407 & A-401	10.67	7.83	0.979	Unreinforced Hollow Concrete Block						83.6	A-267
100 101	Wall Between A-407 & A-401	1.89	12.00	0.979	Unreinforced Hollow Concrete Block						22.6	A-267
102 103	Wall Between A-406 & A-401	20.35	7.48	0.979	Unreinforced Hollow Concrete Block						152.2	A-267
104 105	Wall Between A-402 & A-401	8.32	9.00	0.979	Unreinforced Hollow Concrete Block	D 428	6	8.5			23.9	A-267
106 107	Wall Between A-415 & A-416	8.50	9.00	0.969	Unreinforced Solid Concrete Block	SD 174	6	8			28.5	A-268
108 109	Wall Between A-415 & A-417	20.97	7.57	0.969	Unreinforced Solid Concrete Block						158.3	A-268
110 111	Wall Between A-415 & A-404	18.06	7.83	0.969	Unreinforced Hollow Concrete Block	D 435	3	7.166			119.9	A-268
112 113	Wall Between HVAC Rm # 4 & A-415	44.28	12.00	0.969	Unreinforced Hollow Concrete Block	D 444	3	6.667			511.4	A-268
114 115	Wall Between A-415 and the Unit 2 VC System Intake Plenum	7.50	12.00	3	Concrete						90.0	A-268
116 117	Wall Between A-415 & Aux. Bldg. HVAC Intake Plenum at Unit 2	26.25	12.00	3	Concrete						315.0	A-268
118 119	Wall between A-415 & Aux. Bldg. HVAC Cooling Coil Plenum, Unit 2	7.80	12.00	3	Concrete						93.6	A-268
120 121	Wall of North East Room Inside A-415	19.28	12.00	0.969	Unreinforced Solid Concrete Block						231.4	A-268
122 123	Wall Between A-415 & the South Aux. Bldg. Cable Riser	3.65	12.00	0.969	Unreinforced Solid Concrete Block	D 443	2.833	7.333			23.0	A-268

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**Table A-2: Wall Surface Area Details**

Head Node Tail Node	Description	Length (ft)	Height (ft)	Thickness (ft)	Construction	Doors Door # Width (ft) Height (ft)	Openings Width (ft) Height (ft)	Net Wall Surface Area (ft <sup>2</sup> )	Reference Drawings
124 125	Wall Between A-415 & A-405	16.27	8.50	0.969	Unreinforced Solid Concrete Block			138.3	A-268
126 127	Wall Between A-409 and Ceiling Space Above A-402	16.43	3.00	0.969	Unreinforced Solid Concrete Block			49.3	A-267
128 129	Wall Between A-409 and Ceiling Space above A-416	13.95	3.90	0.969	Reinforced Solid Concrete Block			41.9	A-268
130 131	Wall Between A-409 and Ceiling Space Above A-405	8.38	3.50	0.969	Unreinforced Solid Concrete Block			29.3	A-268
132 133	Wall Between A-409 and Ceiling Space Above A-411	8.12	4.17	0.969	Unreinforced Solid Concrete Block			33.8	A-268
134 135	Wall Between A-409 and Ceiling Space Above A-410	34.20	3.00	0.969	Unreinforced Solid Concrete Block			102.6	A-268
136 137	Wall Between A-409 and Ceiling Space Above A-408	33.53	3.00	0.969	Unreinforced Solid Concrete Block			100.6	A-267
138 139	Wall Between A-409 and Ceiling Space Above A-403	14.00	3.00	0.969	Unreinforced Solid Concrete Block			42.0	A-267
140 141	Wall Between A-401 and Ceiling Space Above A-403	16.71	3.00	0.969	Unreinforced Solid Concrete Block			50.1	A-267
142 143	Wall Between Ceiling Space Above A-414 and A-401	6.33	4.17	0.979	Unreinforced Hollow Concrete Block			26.4	A-267
144 145	Wall Between Ceiling Space Above A-407 and A-401	10.67	4.17	0.979	Unreinforced Hollow Concrete Block			44.4	A-267
146 147	Wall Between Ceiling Space Above A-406 and A-401	20.35	4.52	0.979	Unreinforced Hollow Concrete Block			92.0	A-267
148 149	Wall Between Ceiling Space Above A-405 and A-401	8.32	3.00	0.979	Unreinforced Hollow Concrete Block			25.0	A-267
150 151	Wall Between A-415 & Ceiling Space Above A-416	8.50	3.00	0.969	Unreinforced Solid Concrete Block			25.5	A-268
152 153	Wall Between A-415 & Ceiling Space Above A-417	20.97	4.43	0.969	Unreinforced Solid Concrete Block			92.8	A-268
154 155	Wall Between A-415 & Ceiling Space Above A-404	18.06	4.17	0.969	Unreinforced Hollow Concrete Block			75.2	A-268
156 157	Wall Between A-415 & Ceiling Space Above A-405	16.27	3.50	0.969	Unreinforced Solid Concrete Block			56.9	A-268

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**Table A-2: Wall Surface Area Details**

Head Node	Description	Length (ft)	Height (ft)	Thickness (ft)	Construction	Doors			Openings		Net Wall Surface Area (ft <sup>2</sup> )	Reference Drawings
Tail Node						Door #	Width (ft)	Height (ft)	Width (ft)	Height (ft)		
301	Wall Between Upper CSR Area "B" &	26.25	11.50	1	Concrete						301.9	A-282, A-318,
302	Upper CSR Area "D"											S-1616
303	Wall Between Upper CSR Area "B" &	20.75	11.50	3	Concrete						238.6	A-282, A-318,
304	Aux. Bldg. Cooling Coil Plenum, Unit 1											S-1616
305	Wall Between Upper CSR Area "B" &	26.25	11.50	3	Concrete						301.9	A-282, A-318,
306	Aux. Bldg. HVAC Intake Plenum, Unit 1											S-1616
307	Wall Between Upper CSR Area "B" &	7.50	11.50	3	Concrete						86.3	A-282, A-318,
308	VC System Intake Plenum, Unit 1											S-1616
309	Wall Between Upper CSR Area "B" &	44.25	11.50	1	Concrete						508.9	A-282, A-318,
310	HVAC Eq. Rm. # 3											S-1616
311	Wall Between Upper CSR Area "B" &	47.50	11.50	1	Concrete	D 475	3.333	5.667			527.4	A-282, A-318,
312	Upper CSR Area "A"											S-1616
313	Wall Between Upper CSR Area "B" &	25.50	11.50	1	Concrete						293.3	A-282, A-318,
314	Upper CSR Area "C"											S-1616
315	Wall Between Upper CSR Area "C" &	24.00	11.50	1	Concrete	D 489	3.333	7.333			251.6	A-282, A-318,
316	Upper CSR Area "A"											S-1616
317	Wall Between Upper CSR Area "C" &	58.50	11.50	3.5	Concrete						672.8	A-282, A-318,
318	Turb. Bldg.											S-1616
319	Wall Between Upper CSR Area "C" &	49.28	12.50	1	Concrete	D 227	2.833	7.333			580.6	A-282, A-318,
320	Upper CSR Area "H"					D 498	2.833	5.167				S-1616
321	Wall Between Upper CSR Area "C" &	12.22	12.50	1.969	Unreinforced Solid						152.7	A-282, A-318,
322	East Aux. Bldg. Elevator				Concrete Block							S-1616
323	Wall Between Upper CSR Area "C" &	32.77	1.63	1	Concrete						53.2	A-282, A-318,
324	Ceiling Space Above A-408											S-1616
325	Wall Between Upper CSR Area "C" &	19.03	10.88	1	Concrete	D 490	2.833	7.333			476.4	A-282, A-318,
326	Upper CSR Area "D"	14.25	9.88									S-1616
		13.00	11.50									
327	Wall Between Upper CSR Area "H" &	58.50	11.50	3.5	Concrete						672.8	A-283, A-319,
328	Turb. Bldg.											S-1617
329	Wall Between Upper CSR Area "H" &	24.00	11.50	1	Concrete	D 503	3.333	5.667			257.1	A-283, A-319,
330	Upper CSR Area "F"											S-1617
331	Wall Between Upper CSR Area "H" &	25.50	11.50	1	Concrete						293.3	A-283, A-319,
332	Upper CSR Area "G"											S-1617

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**Table A-2: Wall Surface Area Details**

Head Node Tail Node	Description	Length (ft)	Height (ft)	Thickness (ft)	Construction	Doors			Openings		Net Wall Surface Area (ft <sup>2</sup> )	Reference Drawings
						Door #	Width (ft)	Height (ft)	Width (ft)	Height (ft)		
333 334	Wall Between Upper CSR Area "H" & Upper CSR Area "J"	21.95 14.25 13.00	10.82 9.88 11.50	1	Concrete	D 502	2.833	7.333			508.1	A-283, A-319, S-1617
335 336	Wall Between Upper CSR Area "H" & Ceiling Space Above A-410 & A-411	36.20	1.63	1	Concrete						58.8	A-283, A-319, S-1617
337 338	Wall Between Upper CSR Area "H" & Stair A-3	9.30	12.50	1.969	Unreinforced Solid Concrete Block						116.3	A-283, A-319, S-1617
339 340	Wall Between Upper CSR Area "G" & Upper CSR Area "F"	47.50	11.50	1	Concrete	D 504	3.333	5.667			527.4	A-283, A-319, S-1617
341 342	Wall Between Upper CSR Area "G" & HVAC Eq. Rm. # 4	44.25	11.50	1	Concrete						508.9	A-283, A-319, S-1617
343 344	Wall Between Upper CSR Area "G" & VC System Intake Plenum, Unit 2	7.50	11.50	3	Concrete						86.3	A-283, A-319, S-1617
345 346	Wall Between Upper CSR Area "G" & Aux. Bldg. HVAC Intake Plenum, Unit 2	26.25	11.50	3	Concrete						301.9	A-283, A-319, S-1617
347 348	Wall Between Upper CSR Area "G" & Aux. Bldg. Cooling Coil Plenum, Unit 2	7.28	11.50	3	Concrete						83.7	A-283, A-319, S-1617
349 350	Wall Between Upper CSR Area "G" & Shaft in NE Corner of CSR Area "G"	20.77	11.50	0.969	Unreinforced Solid Concrete Block						238.9	A-283, A-319, S-1617
351 352	Wall Between Upper CSR Area "G" & Upper CSR Area "J"	18.95	11.50	1	Concrete						217.9	A-283, A-319, S-1617

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**Table A-3: Floor and Ceiling Surface Area Details**

Head Node Tail Node	Description	Length (ft)	Width (ft)	Thickness (ft)	Construction	Enclosed Structure Width (ft) Length (ft)		Reduction for Eq. & Obstructions (%)	Net Surface Area (ft <sup>2</sup> )	Reference Drawings
176 177	Slab Between A-409 & Upper CSR Area "C"	59.02	49.50	0.333	Concrete			10%	2629.3	A-267, A-318, S-721
178 179	Slab Between A-409 & Upper CSR Area "H"	59.02	49.28	0.333	Concrete			10%	2617.7	A-268, A-319, S-718
180 181	Slab Between A-409 & Lower CSR Area "D"	59.02	49.50	1	Concrete			80%	584.3	A-262, A-267, S-721
182 183	Slab Between A-409 & Lower CSR Area "E"	59.02	49.28	1	Concrete			80%	581.7	A-263, A-268, S-718
184 185	Slab Between A-401 & Upper CSR Area "B"	47.53	51.78	0.333	Concrete			10%	2215.0	A-267, A-318, S-729
186 187	Slab Between A-401 & Lower CSR Area "B"	47.53	51.78	1	Concrete			30%	1722.8	A-262, A-267, S-729
188 189	Slab Between A-415 & Upper CSR Area "G"	47.50	51.78	0.333	Concrete	12.95	6.33	10%	2131.6	A-268, A-319, S-732
190 191	Slab Between A-415 & Lower CSR Area "F"	47.50	51.78	1	Concrete	12.95	6.33	30%	1639.7	A-263, A-268, S-732
353 354	Slab Between Upper CSR Area "B" & Ambient Sol-Air	47.50 46.50	44.25 7.50	2	Concrete			0%	2450.6	A-282, A-318
355 356	Slab Between Upper CSR Area "C" & Ambient Sol-Air	49.50	27.25	2	Concrete			0%	1348.9	A-282, A-318
357 358	Slab Between Upper CSR Area "C" & Aux. Bldg. Exhaust Tunnel at Col. 16 & 17	49.50	14.25	1	Concrete			0%	705.4	A-282, A-318
359 360	Slab Between Upper CSR Area "C" & Aux. Bldg. Tank Vent Filter Area	49.50 49.28	4.78 12.22	1	Concrete			0%	838.8	A-282, A-318
361 362	Slab Between Upper CSR Area "H" & Ambient Sol-Air	49.50	27.25	2	Concrete			0%	1348.9	A-283, A-319
363 364	Slab Between Upper CSR Area "H" & Aux. Bldg. Exhaust Tunnel at Col. 19 & 20	49.50	14.25	1	Concrete			0%	705.4	A-283, A-319
365 366	Slab Between Upper CSR Area "H" & Aux. Bldg. Tank Vent Filter Area	49.50 49.28	7.70 9.30	1	Concrete			0%	839.5	A-283, A-319
367 368	Slab Between Upper CSR Area "G" & Ambient Sol-Air	47.50 46.50	44.25 7.50	2	Concrete	13.47	7.30	0%	2352.3	A-283, A-319

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Table A-4: Door Surface Area Details

Face Node Fill Node Face Node	Door No.	Description	Length (ft)	Height (ft)	Total Thickness (ft)	Construction	Door Surface Area (ft <sup>2</sup> )	Face Sheet Thickness (ft)	Volume (ft <sup>3</sup> )	Fill Volume (ft <sup>3</sup> )	Reference Drawings
201 202 203	SD 170	Double Door Between A-409 & A-401	6	8	0.1458	Bullet Resisting	48.0	0.0049	0.2360	6.53	A-28, A-267
204 205 206	SD 169	Double Door Between A-409 & Stair A-2	6	8	0.1458	Bullet Resisting	48.0	0.0049	0.2360	6.53	A-28, A-267
207 208 209	SD 171	Single Door Between A-409 and the Turbine Bldg.	3.375	7.333	0.1458	Bullet Resisting	24.7	0.0049	0.1217	3.37	A-28, A-268
210 211 212	SD 175	Double Door Between A-409 & A-415	6	8	0.1458	Bullet Resisting	48.0	0.0049	0.2360	6.53	A-28, A-268
213 214 215	D 441	Double Door Between A-409 & A-405	3	7.166	0.1458	Hollow Metal	21.5	0.0049	0.1057	2.92	A-491, A-268
216 217 218	D 442	Single Door Between A-409 & A-411	2.5	7.166	0.1458	Hollow Metal	17.9	0.0049	0.0881	2.44	A-491, A-268
219 220 221	D 440	Double Door Between A-409 & A-410	6	8.5	0.1458	Hollow Metal	51.0	0.0049	0.2508	6.93	A-490, A-268
222 223 224	D 432	Double Door Between A-409 & A-408	6	8.5	0.1458	Hollow Metal	51.0	0.0049	0.2508	6.93	A-490, A-267
225 226 227	D 430	Single Door Between A-409 & A-403	3	7.166	0.1458	Hollow Metal	21.5	0.0049	0.1057	2.92	A-490, A-267
228 229 230	D 431	Single Door Between A-401 & the South Aux. Bldg. Cable Riser	2.5	7.166	0.1458	Hollow Metal	17.9	0.0049	0.0881	2.44	A-490, A-267
231 232 233	D 419	Single Door Between A-401 & HVAC Eq. Room # 3	3	6.75	0.1458	Hollow Metal	20.3	0.0049	0.0996	2.75	A-490, A-267
234 235 236	D 428	Double Door Between A-401 & A-402	6	8.5	0.1458	Hollow Metal	51.0	0.0049	0.2508	6.93	A-490, A-267

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Table A-4: Door Surface Area Details

Face Node Fill Node Face Node	Door No.	Description	Length (ft)	Height (ft)	Total Thickness (ft)	Construction	Door Surface Area (ft <sup>2</sup> )	Face Sheet Thickness (ft)	Volume (ft <sup>3</sup> )	Fill Volume (ft <sup>3</sup> )	Reference Drawings
237 238 239	SD 174	Double Door Between A-415 & A-416	6	8	0.1458	Bullet Resisting	48.0	0.0049	0.2360	6.53	A-28, A-268
240 241 242	D 435	Single Door Between A-415 & A-404	3	7.166	0.1458	Hollow Metal	21.5	0.0049	0.1057	2.92	A-490, A-268
243 244 245	D 444	Single Door Between A-415 & HVAC Eq. Room # 4	3	6.667	0.1458	Hollow Metal	20.0	0.0049	0.0983	2.72	A-491, A-268
246 247 248	D 443	Single Door Between A-415 & the North Aux. Bldg. Cable Riser	2.833	7.333	0.1458	Hollow Metal	20.8	0.0049	0.1021	2.82	A-491, A-268
369 370 371	D 475	Single Door Between Upper CSR Area "B" & Upper CSR Area "A"	3.333	5.667	0.1458	Hollow Metal	18.9	0.0049	0.0929	2.57	A-491, A-318
372 373 374	D 489	Single Door Between Upper CSR Area "C" & Upper CSR Area "A"	3.333	7.333	0.1458	Hollow Metal	24.4	0.0049	0.1202	3.32	A-492, A-318
375 376 377	D 227	Single Door Between Upper CSR Area "C" & Upper CSR Area "H"	2.833	7.333	0.1458	Hollow Metal	20.8	0.0049	0.1021	2.82	A-485, A-318
378 379 380	D 498	Single Door Between Upper CSR Area "C" & Upper CSR Area "H"	2.833	5.167	0.1458	Hollow Metal	14.6	0.0049	0.0720	1.99	A-492, A-319
381 382 383	D 490	Single Door Between Upper CSR Area "C" & Upper CSR Area "D"	2.833	7.333	0.1458	Hollow Metal	20.8	0.0049	0.1021	2.82	A-492, A-318
384 385 386	D 503	Single Door Between Upper CSR Area "H" & Upper CSR Area "F"	3.333	5.667	0.1458	Hollow Metal	18.9	0.0049	0.0929	2.57	A-492, A-319
387 388 389	D 502	Single Door Between Upper CSR Area "H" & Upper CSR Area "J"	2.833	7.333	0.1458	Hollow Metal	20.8	0.0049	0.1021	2.82	A-492, A-319
390 391 392	D 504	Single Door Between Upper CSR Area "G" & Upper CSR Area "I"	3.333	5.667	0.1458	Hollow Metal	18.9	0.0049	0.0929	2.57	A-492, A-319

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**Table A-5: Unit 1/2 AEER Supply Duct Surface Area Details**

Summary:	Net Duct Surface Area (ft <sup>2</sup> )	Reference
Unit 1 AEER	549.083	M-1323, Sheets 2 & 3
Unit 2 AEER	448.083	M-1323, Sheet 6

**Surface Area Details:**

**Unit 1 AEER Supply Duct at Column 11**

**Gross Duct Area**

L* (ft)	H (ft)	W (ft)	Area (ft <sup>2</sup> )
11.250	1.667	2.000	82.500
6.500	1.333	2.000	43.333
7.250	1.167	2.000	45.917
6.250	1.167	1.667	35.417
6.250	1.000	1.667	33.333
5.500	1.000	1.167	23.833
6.333	0.833	0.833	21.111
<b>Totals:</b>	49.333		285.444

**Register Area**

Qty.	H (ft)	W (ft)	Area (ft <sup>2</sup> )
8	0.667	2.000	10.667

Net Duct Area (ft<sup>2</sup>): 274.778

**Unit 2 AEER Supply Duct at Column 23\***

**Gross Duct Area**

L* (ft)	H (ft)	W (ft)	Area (ft <sup>2</sup> )
9.083	1.667	1.833	63.583
7.500	1.500	1.833	50.000
6.000	1.167	1.833	36.000
6.667	1.000	1.833	37.778
3.833	1.000	1.333	17.889
<b>Totals:</b>	33.083		205.250

**Register Area**

Qty.	H (ft)	W (ft)	Area (ft <sup>2</sup> )
4	0.833	1.667	5.556

Net Duct Area (ft<sup>2</sup>): 199.694

**Unit 1 AEER Supply Duct at Column 13**

**Gross Duct Area**

L* (ft)	H (ft)	W (ft)	Area (ft <sup>2</sup> )
10.750	1.667	2.000	78.833
6.667	1.333	2.000	44.444
7.250	1.167	2.000	45.917
6.250	1.000	2.000	37.500
6.250	1.000	1.667	33.333
5.500	1.000	1.167	23.833
6.333	0.833	0.833	21.111
<b>Totals:</b>	49.000		284.972

**Register Area**

Qty.	H (ft)	W (ft)	Area (ft <sup>2</sup> )
8	0.667	2.000	10.667

Net Duct Area (ft<sup>2</sup>): 274.306

**Unit 2 AEER Supply Duct at Column 25\***

**Gross Duct Area**

L* (ft)	H (ft)	W (ft)	Area (ft <sup>2</sup> )
5.250	1.667	2.000	38.500
5.250	1.667	1.833	36.750
6.667	1.500	1.833	44.444
7.500	1.333	1.833	47.500
6.000	1.167	1.833	36.000
6.583	1.167	1.333	32.917
3.917	1.000	1.333	18.278
<b>Totals:</b>	41.167		254.389

**Register Area**

Qty.	H (ft)	W (ft)	Area (ft <sup>2</sup> )
6	0.500	2.000	6.000

Net Duct Area (ft<sup>2</sup>): 248.389

\* The surface area of the Unit 2 AEER supply ducts between Columns N & M was conservatively neglected.

\* At each change of the duct cross section, the length of the reducer was conservatively included with the section of duct having a smaller perimeter.

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## Attachment B

### Electrical Cabinet Geometry and Construction Details

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#### General Note:

General cabinet dimensions and details that are estimated based on the characteristics on the known sample of cabinets are surrounded by a border. However, calculations based on the estimated parameters are not surrounded by a border.

Table B-1: Summary of Electrical Cabinet Details

Room	Parameter	Value	Units	Source
<b>Unit 1 AEER</b>				
	Total Room Volume:	29534	(ft <sup>3</sup> )	(Attachment A)
	Gross Cabinet Air Volume:	4944	(ft <sup>3</sup> )	(Table B-2)
	Panel % of Room Volume:	17%		( $=V_{cab}/V_{room}$ )
	Total Room Volume Reduction:	20%		(Assumption 3.6)
	Total Cabinet Air Volume Reduction:	20%		(Assumption 3.15)
	Net Room Volume:	23627	(ft <sup>3</sup> )	
	Net Cabinet Air Volume:	3955	(ft <sup>3</sup> )	
	Gross Weight of Cabinets:	108522	(lb <sub>m</sub> )	(Table B-2, Sum of Gross Cabinet Weight)
	Total Cabinet Wt. Modeled:	72928	(lb <sub>m</sub> )	(Table B-5, Sum of Quant. & Unquant.)
	Percent of Total Wt. Modeled to Gross Wt.:	67.20%		
	Outer Shell S.A. (Vertical):	3804.52	(ft <sup>2</sup> )	(Table B-2 & B-3, Total Outer S.A. - Horz S.A.)
	Outer Shell S.A. (Horizontal):	605.93	(ft <sup>2</sup> )	(Table B-2 & B-3, Floor S.A. - Open Red)
	Outer Shell Thickness:	0.0099667	(ft)	(Table B-3)
	Area of Ventilation Openings:	67	(ft <sup>2</sup> )	(Table B-2 & Assumption 3.16)
	Inner Shell S.A.:	1769.94	(ft <sup>2</sup> )	(Table B-3)
	Inner Shell Thickness:	0.0099667	(ft)	(Table B-3)
	Mounting Base S.A.:	603.11	(ft <sup>2</sup> )	(Table B-4)
	Mounting Base Thickness:	0.0241949	(ft)	(Equation (8) & Table B-4)
	Unquantified Mass S.A.:	3486.83	(ft <sup>2</sup> )	(Table B-5 & Equation (9))
	Unquantified Mass Representative Thickness:	0.0208333	(ft)	(Assumption 3.7)
<b>Unit 2 AEER</b>				
	Total Room Volume:	28531	(ft <sup>3</sup> )	(Attachment A)
	Gross Cabinet Air Volume:	4699	(ft <sup>3</sup> )	(Table B-6)
	Panel % of Room Volume:	16%		( $=V_{cab}/V_{room}$ )
	Total Room Volume Reduction:	20%		(Assumption 3.6)
	Total Cabinet Air Volume Reduction:	20%		(Assumption 3.15)
	Net Room Volume:	22825	(ft <sup>3</sup> )	
	Net Cabinet Air Volume:	3759	(ft <sup>3</sup> )	
	Gross Weight of Cabinets:	103870	(lb <sub>m</sub> )	(Table B-6, Sum of Gross Cabinet Weight)
	Total Cabinet Wt. Modeled:	69188	(lb <sub>m</sub> )	(Table B-9, Sum of Quant. & Unquant.)
	Percent of Total Wt. Modeled to Gross Wt.:	66.61%		
	Outer Shell S.A. (Vertical):	3779.55	(ft <sup>2</sup> )	(Table B-6 & B-7, Total Outer S.A. - Horz S.A.)
	Outer Shell S.A. (Horizontal):	575.73	(ft <sup>2</sup> )	(Table B-6 & B-7, Floor S.A. - Open Red)
	Outer Shell Thickness:	0.0099667	(ft)	(Table B-7)
	Area of Ventilation Openings:	64	(ft <sup>2</sup> )	(Table B-6 & Assumption 3.16)
	Inner Shell S.A.:	1400.24	(ft <sup>2</sup> )	(Table B-7)
	Inner Shell Thickness:	0.0099667	(ft)	(Table B-7)
	Mounting Base S.A.:	573.04	(ft <sup>2</sup> )	(Table B-8)
	Mounting Base Thickness:	0.0241949	(ft)	(Equation (8) & Table B-8)
	Unquantified Mass S.A.:	3358.68	(ft <sup>2</sup> )	(Table B-9 & Equation (9))
	Unquantified Mass Representative Thickness:	0.0208333	(ft)	(Assumption 3.7)

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**Table B-1 (Continued): Summary of Electrical Cabinet Details**

Room	Parameter	Value	Units	Source
<b>Control Room, Ventilated Cabinets</b>				
	Total Room Volume:	69800	(ft <sup>3</sup> )	(Attachment A)
	Gross Cabinet Air Volume:	5895.46	(ft <sup>3</sup> )	(Table B-10)
	Panel % of Room Volume:	8.45%		(=V <sub>cab</sub> /V <sub>room</sub> )
	Total Room Volume Reduction:	30%		(Assumption 3.6)
	Total Cabinet Air Volume Reduction:	20%		(Assumption 3.15)
	Net Room Volume:	48860	(ft <sup>3</sup> )	
	Net Cabinet Air Volume:	4716	(ft <sup>3</sup> )	
	Gross Weight of Cabinets:	66918	(lb <sub>m</sub> )	(Table B-10, Sum of Gross Cabinet Weights)
	Total Cabinet Wt. Modeled:	50414	(lb <sub>m</sub> )	(Table B-12 & B-13, Sum of Shell & Unqt.)
	Percent of Total Wt. Modeled to Gross Wt.:	75.34%		
	1/4" Plate S.A.:	1253.88	(ft <sup>2</sup> )	(Table B-11)
	1/4" Thickness:	0.0208333	(ft)	(Table B-12)
	Rear Door and Access Panel S.A.:	1558.94	(ft <sup>2</sup> )	(Table B-11)
	Rear Door and Access Panel Thickness:	0.0087167	(ft)	(Table B-12)
	Louvered Access Plate S.A.:	136.00	(ft <sup>2</sup> )	(Table B-11)
	Louvered Access Plate Thickness:	0.0087167	(ft)	(Table B-12)
	Instrumentation (Representative) S.A.:	370.96	(ft <sup>2</sup> )	(Table B-11)
	Instrumentation (Representative) Thickness:	0.0099667	(ft)	(Table B-12)
	Top Plate S.A.:	663.26	(ft <sup>2</sup> )	(Table B-11)
	Top Plate Thickness:	0.0112083	(ft)	(Table B-12)
	Top Access Cover S.A.:	33.44	(ft <sup>2</sup> )	(Table B-11)
	Top Access Cover Thickness:	0.0099667	(ft)	(Table B-12)
	Total Area of Ventilation Openings:	14.14	(ft <sup>2</sup> )	(Table B-11)
	Unquantified Mass S.A.:	2425.13	(ft <sup>2</sup> )	(Table B-13 & Equation (9))
	Unquantified Mass Representative Thickness:	0.0208333	(ft)	(Assum. 3.9)
<b>Control Room, Non-Ventilated Cabinets</b>				
	Gross Weight of Cabinets:	46051	(lb <sub>m</sub> )	(Table B-14, Sum of Gross Cabinet Weights)
	Total Cabinet Wt. Modeled:	20254.45	(lb <sub>m</sub> )	(Table B-16, Sum of External Shell Weights)
	Percent of Total Wt. Modeled to Gross Wt.:	43.98%		
	1/4" Plate S.A.:	1369.25	(ft <sup>2</sup> )	(Table B-15, Sum of Front & Ext. Side Plates)
	1/4" Thickness:	0.0208333	(ft)	(Table B-15)
	Rear Door and Access Panel S.A.:	1055.60	(ft <sup>2</sup> )	(Table B-15)
	Rear Door and Access Panel Thickness:	0.0087167	(ft)	(Table B-15)
	Top Plate S.A.:	321.92	(ft <sup>2</sup> )	(Table B-15)
	Top Plate Thickness:	0.0112083	(ft)	(Table B-15)

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Table B-2: Unit 1 AEER General Cabinet Characteristics

Cabinet No	Row #	Width (ft)	Depth (ft)	Height (ft)	Sections per Cabinet (Qty.)	End Cabinet ("Y" or "N")	Gross Cabinet Wt. (lb <sub>m</sub> )	Gross Cabinet Vol (ft <sup>3</sup> )	Heat Dissipation (Btu/hr)	Heat Dissipation per Foot of Cabinet (Btu/hr-ft)	Floor (Horz Top Plate) S A (ft <sup>2</sup> )
OPA01J	7	2.50	2.65	7.28	1	N	917	48.2			6.6
OPA02J	7	2.00	2.50	7.28	1	N	693	36.4			5.0
OPA04J	7	6.01	2.50	7.28	1	N	2081	109.3			15.0
OPA05J	7	2.50	2.50	7.28	1	Y	866	45.5			6.3
IPA01J	5	6.71	2.50	7.55	1	N	3550	126.6			16.8
IPA02J	5	6.71	2.50	7.55	1	N	3550	126.6			16.8
IPA03J	5	4.81	2.50	7.55	1	N	3000	90.8			12.0
IPA04J	5	4.81	2.50	7.55	1	N	3000	90.8			12.0
IPA05J	4	6.71	2.50	7.55	1	N	3550	126.6			16.8
IPA06J	4	6.71	2.50	7.55	1	Y	3550	126.6			16.8
IPA07J	4	4.81	2.50	7.55	1	Y	3000	90.8			12.0
IPA08J	4	6.71	2.50	7.55	1	Y	3550	126.6			16.8
IPA09J	6	7.50	2.50	7.28	1	N	2800	136.5	1706	227.5	18.8
IPA10J	3	7.50	2.50	7.28	1	N	2800	136.5	1706	227.5	18.8
IPA11J	6	2.50	2.50	7.28	1	Y	2000	45.5	1024	409.6	6.3
IPA12J	3	2.50	2.50	7.28	1	N	2000	45.5	1024	409.6	6.3
IPA13J	3	3.00	2.50	7.28	1	Y	1040	54.6			7.5
IPA14J	3	3.00	2.50	7.28	1	N	1040	54.6			7.5
IPA15J	6	2.50	2.50	7.28	1	N	866	45.5			6.3
IPA16J	3	2.50	2.50	7.28	1	N	866	45.5			6.3
IPA17J	3	2.50	2.50	7.28	1	N	1000	45.5	1365	546.0	6.3
IPA19J	1	16.37	2.50	7.28	1	N	5673	297.9			40.9
IPA20JA	4	4.81	2.50	7.28	1	Y	1668	87.6			12.0
IPA20JB	4	4.81	2.50	7.28	1	N	1668	87.6			12.0
IPA20JC	5	4.81	2.50	7.28	1	Y	1668	87.6			12.0
IPA21J	5	6.50	2.50	7.28	1	N	2253	118.3			16.3
IPA22J	2	16.02	2.79	7.50	1	Y	6200	335.4			44.7
IPA23J	7	2.50	15.83	7.28	1	N	5487	288.2			39.6
IPA24J	6	2.50	2.50	7.28	1	N	866	45.5			6.3
IPA25J	3	2.50	2.50	7.28	1	N	866	45.5			6.3
IPA26J	5	2.50	2.50	7.28	1	Y	866	45.5			6.3
IPA27J	6	2.50	2.50	7.28	1	Y	2000	45.5			6.3
IPA28J	3	2.50	2.50	7.28	1	Y	2000	45.5			6.3
IPA29J	7	4.00	2.50	7.28	1	N	1386	72.8			10.0
IPA30J	2	15.25	2.50	7.28	1	Y	5285	277.6			38.1
IPA31J	1	7.63	2.50	7.28	1	N	2643	138.8			19.1
IPA32J	2	7.63	2.50	7.28	1	N	2643	138.8			19.1
IPA33J	6	4.81	2.50	7.28	1	N	1668	87.6			12.0
IPA34J	3	4.81	2.50	7.28	1	N	1668	87.6			12.0
IPA35J	5	2.01	2.42	7.28	1	N	673	35.4			4.9
IPA36J	3	2.01	2.01	7.28	1	Y	557	29.3			4.0
IPA37J	3	2.01	2.01	7.28	1	N	557	29.3			4.0
IPA39J	0	5.50	1.01	7.28	1	Y	766	40.2			5.5
IPA40J	0	7.00	1.01	7.28	1	Y	975	51.2			7.0
IPA41J	1	2.34	2.50	7.28	1	N	810	42.6			5.8
IPA42J	1	9.35	2.50	7.28	1	Y	3242	170.2			23.4
IPA44J	7	2.01	2.60	7.28	1	N	723	38.0			5.2
IPA45J	6	2.54	2.50	7.28	1	N	781	46.3			6.4
IPA46J	3	2.54	2.50	7.28	1	N	881	46.3			6.4
IPA49J	0	5.50	1.01	7.28	1	N	766	40.2			5.5
IPA50J	6	6.71	2.50	7.28	1	Y	2325	122.1			16.8
IPA51J	1	2.50	3.00	7.28	1	Y	1040	54.6			7.5
IPA52J	7	2.50	3.00	7.28	1	Y	1040	54.6			7.5
IPA54J	3	2.54	3.00	7.28	1	N	1057	55.5			7.6
TOTALS:		263.98					108522.49	4943.55			673.26

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Table B-3: Unit 1 AEER Electrical Cabinet Shell Details

Cabinet No	Gross Outer Shell S.A. (ft <sup>2</sup> )	Opening Reduction (%)	Net Outer Shell S.A. (ft <sup>2</sup> )	Net Inner Shell S.A. (ft <sup>2</sup> )	Shell Thickness (ft)	Net Outer Shell Wt (lb <sub>m</sub> )	Net Inner Shell Wt (lb <sub>m</sub> )	Total Shell Wt (lb <sub>m</sub> )
OPA01J	43.01	10%	38.71	38.52	0.009967	189.06	188.14	377.20
OPA02J	34.12	10%	30.71	36.40	0.009967	149.97	177.77	327.73
OPA04J	102.45	10%	92.20	36.40	0.009967	450.29	177.77	628.06
OPA05J	60.85	10%	54.77	18.20	0.009967	267.45	88.88	356.34
IPA01J	118.07	10%	106.26	37.75	0.009967	518.94	184.36	703.30
IPA02J	118.07	10%	106.26	37.75	0.009967	518.94	184.36	703.30
IPA03J	84.70	10%	76.23	37.75	0.009967	372.28	184.36	556.64
IPA04J	84.70	10%	76.23	37.75	0.009967	372.28	184.36	556.64
IPA05J	118.07	10%	106.26	37.75	0.009967	518.94	184.36	703.30
IPA06J	136.94	10%	123.25	18.88	0.009967	601.90	92.18	694.08
IPA07J	103.58	10%	93.22	18.88	0.009967	455.24	92.18	547.42
IPA08J	136.94	10%	123.25	18.88	0.009967	601.90	92.18	694.08
IPA09J	127.95	10%	115.16	36.40	0.009967	562.38	177.77	740.14
IPA10J	127.95	10%	115.16	36.40	0.009967	562.38	177.77	740.14
IPA11J	60.85	10%	54.77	18.20	0.009967	267.45	88.88	356.34
IPA12J	42.65	10%	38.39	36.40	0.009967	187.46	177.77	365.23
IPA13J	69.38	10%	62.44	18.20	0.009967	304.95	88.88	393.83
IPA14J	51.18	10%	46.06	36.40	0.009967	224.95	177.77	402.72
IPA15J	42.65	10%	38.39	36.40	0.009967	187.46	177.77	365.23
IPA16J	42.65	10%	38.39	36.40	0.009967	187.46	177.77	365.23
IPA17J	42.65	10%	38.39	36.40	0.009967	187.46	177.77	365.23
IPA19J	279.27	10%	251.34	36.40	0.009967	1227.47	177.77	1405.23
IPA20JA	100.30	10%	90.27	18.20	0.009967	440.85	88.88	529.74
IPA20JB	82.10	10%	73.89	36.40	0.009967	360.86	177.77	538.63
IPA20JC	100.30	10%	90.27	18.20	0.009967	440.85	88.88	529.74
IPA21J	110.89	10%	99.80	36.40	0.009967	487.39	177.77	665.16
IPA22J	305.97	10%	275.38	20.94	0.009967	1344.85	102.25	1447.10
IPA23J	75.98	10%	68.39	230.53	0.009967	333.97	1125.85	1459.82
IPA24J	42.65	10%	38.39	36.40	0.009967	187.46	177.77	365.23
IPA25J	42.65	10%	38.39	36.40	0.009967	187.46	177.77	365.23
IPA26J	60.85	10%	54.77	18.20	0.009967	267.45	88.88	356.34
IPA27J	60.85	10%	54.77	18.20	0.009967	267.45	88.88	356.34
IPA28J	60.85	10%	54.77	18.20	0.009967	267.45	88.88	356.34
IPA29J	68.24	10%	61.42	36.40	0.009967	299.94	177.77	477.70
IPA30J	278.37	10%	250.53	18.20	0.009967	1223.50	88.88	1312.38
IPA31J	130.08	10%	117.07	36.40	0.009967	571.75	177.77	749.52
IPA32J	130.08	10%	117.07	36.40	0.009967	571.75	177.77	749.52
IPA33J	82.10	10%	73.89	36.40	0.009967	360.86	177.77	538.63
IPA34J	82.10	10%	73.89	36.40	0.009967	360.86	177.77	538.63
IPA35J	34.05	10%	30.65	35.26	0.009967	149.67	172.21	321.88
IPA36J	47.81	10%	43.03	14.60	0.009967	210.16	71.29	281.45
IPA37J	33.22	10%	29.90	29.20	0.009967	146.00	142.58	288.58
IPA39J	92.93	10%	83.63	7.32	0.009967	408.44	35.74	444.18
IPA40J	116.27	10%	104.65	7.32	0.009967	511.06	35.74	546.80
IPA41J	39.90	10%	35.91	36.40	0.009967	175.35	177.77	353.12
IPA42J	177.78	10%	160.00	18.20	0.009967	781.41	88.88	870.29
IPA44J	34.41	10%	30.97	37.88	0.009967	151.25	184.99	336.24
IPA45J	43.36	10%	39.02	36.40	0.009967	190.58	177.77	368.35
IPA46J	43.36	10%	39.02	36.40	0.009967	190.58	177.77	368.35
IPA49J	85.61	10%	77.05	14.64	0.009967	376.28	71.48	447.75
IPA50J	132.64	10%	119.38	18.20	0.009967	583.01	88.88	671.89
IPA51J	65.74	10%	59.17	21.84	0.009967	288.95	106.66	395.61
IPA52J	65.74	10%	59.17	21.84	0.009967	288.95	106.66	395.61
IPA54J	44.63	10%	40.17	43.68	0.009967	196.17	213.32	409.49
TOTALS:	4900.51		4410.45	1769.94		21539.19	8643.78	30182.97

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Table B-4: Unit 1 AEER Electrical Cabinet Mounting Base Details

Cabinet No	57.76*4.0 @7.25# Ch. (Qty.)	80.5*4.0 @7.25# Ch. (Qty.)	30.0*4.0 @7.25# Ch. (Qty.)	26.56*4.0 @7.25# Ch. (Qty.)	3.5*3.5*3.12 Gusset (Qty.)	90.0*4.0 @7.25# Ch. (Qty.)	26.0*4.0 @13.0# H beam (Qty.)	Calc. Mounting Base Wt. (lb <sub>m</sub> )	Calc. Mounting Base S.A. (ft <sup>2</sup> )	Est. Mounting Base Wt. (lb <sub>m</sub> )	Est. Mounting Base S.A. (ft <sup>2</sup> )
0PA01J										70.25	5.93
0PA02J										53.10	4.48
0PA04J										159.44	13.45
0PA05J										66.38	5.60
1PA01J		2	2	2	12			172.12	14.67		
1PA02J		2	2	2	12			172.12	14.67		
1PA03J	2		2	1	8			126.43	10.78		
1PA04J	2		2	1	8			126.43	10.78		
1PA05J		2	2	2	12			172.12	14.67		
1PA06J		2	2	2	12			172.12	14.67		
1PA07J	2		2	1	8			126.43	10.78		
1PA08J		2	2	2	12			172.12	14.67		
1PA09J			2		12	2	2	207.84	16.90		
1PA10J			2		12	2	2	207.84	16.90		
1PA11J			4		4			74.67	6.37		
1PA12J			4		4			74.67	6.37		
1PA13J										79.65	6.72
1PA14J										79.65	6.72
1PA15J										66.38	5.60
1PA16J										66.38	5.60
1PA17J										66.38	5.60
1PA19J										434.63	36.66
1PA20JA										127.77	10.78
1PA20JB										127.77	10.78
1PA20JC										127.77	10.78
1PA21J										172.58	14.56
1PA22J										474.99	40.06
1PA23J										420.38	35.46
1PA24J										66.38	5.60
1PA25J										66.38	5.60
1PA26J										66.38	5.60
1PA27J										66.38	5.60
1PA28J										66.38	5.60
1PA29J										106.20	8.96
1PA30J										404.89	34.15
1PA31J										202.45	17.08
1PA32J										202.45	17.08
1PA33J										127.77	10.78
1PA34J										127.77	10.78
1PA35J										51.58	4.35
1PA36J										42.70	3.60
1PA37J										42.70	3.60
1PA39J										58.72	4.95
1PA40J										74.73	6.30
1PA41J										62.09	5.24
1PA42J										248.36	20.95
1PA44J										55.40	4.67
1PA45J										67.48	5.69
1PA46J										67.48	5.69
1PA49J										58.72	4.95
1PA50J										178.11	15.02
1PA51J										79.65	6.72
1PA52J										79.65	6.72
1PA54J										80.98	6.83
TOTALS:								1804.88	152.24	5345.26	450.87

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**Table B-5: Unit 1 AEER Electrical Cabinet Unquantified Heat Sink Estimation**

Cabinet No.	Total Cabinet Wt. Quantified (lb <sub>m</sub> )	Unquantified Cabinet Wt. (lb <sub>m</sub> )	Unquantified			
			Cabinet Wt. Attr. to Structural Steel (%)	Unquantified Cabinet Wt. Attr. to Structural Steel (lb <sub>m</sub> )	Unquantified Cabinet Mass Attr. to Struct. Steel Avg. Thickness (ft)	Unquantified Cabinet Mass Attr. to Struct. Steel Avg. S.A. (ft)
OPA01J	447.45	469.50	50%	234.75	0.020833	23.00
OPA02J	380.83	312.29	50%	156.15	0.020833	15.30
OPA04J	787.50	1293.69	50%	646.84	0.020833	63.36
OPA05J	422.71	443.70	50%	221.85	0.020833	21.73
IPA01J	875.42	2674.58	50%	1337.29	0.020833	131.00
IPA02J	875.42	2674.58	50%	1337.29	0.020833	131.00
IPA03J	683.07	2316.93	50%	1158.47	0.020833	113.48
IPA04J	683.07	2316.93	50%	1158.47	0.020833	113.48
IPA05J	875.42	2674.58	50%	1337.29	0.020833	131.00
IPA06J	866.20	2683.80	50%	1341.90	0.020833	131.45
IPA07J	673.85	2326.15	50%	1163.08	0.020833	113.93
IPA08J	866.20	2683.80	50%	1341.90	0.020833	131.45
IPA09J	947.98	1852.02	50%	926.01	0.020833	90.71
IPA10J	947.98	1852.02	50%	926.01	0.020833	90.71
IPA11J	431.00	1569.00	50%	784.50	0.020833	76.85
IPA12J	439.89	1560.11	50%	780.05	0.020833	76.41
IPA13J	473.48	566.21	50%	283.11	0.020833	27.73
IPA14J	482.37	557.32	50%	278.66	0.020833	27.30
IPA15J	431.60	434.81	50%	217.40	0.020833	21.30
IPA16J	431.60	434.81	50%	217.40	0.020833	21.30
IPA17J	431.60	568.40	50%	284.20	0.020833	27.84
IPA19J	1839.86	3833.31	50%	1916.66	0.020833	187.75
IPA20JA	657.51	1010.33	50%	505.16	0.020833	49.49
IPA20JB	666.40	1001.44	50%	500.72	0.020833	49.05
IPA20JC	657.51	1010.33	50%	505.16	0.020833	49.49
IPA21J	837.74	1414.93	50%	707.46	0.020833	69.30
IPA22J	1922.09	4277.91	50%	2138.96	0.020833	209.53
IPA23J	1880.20	3607.06	50%	1803.53	0.020833	176.67
IPA24J	431.60	434.81	50%	217.40	0.020833	21.30
IPA25J	431.60	434.81	50%	217.40	0.020833	21.30
IPA26J	422.71	443.70	50%	221.85	0.020833	21.73
IPA27J	422.71	1577.29	50%	788.64	0.020833	77.25
IPA28J	422.71	1577.29	50%	788.64	0.020833	77.25
IPA29J	583.90	802.35	50%	401.18	0.020833	39.30
IPA30J	1717.28	3567.82	50%	1783.91	0.020833	174.75
IPA31J	951.96	1690.58	50%	845.29	0.020833	82.80
IPA32J	951.96	1690.58	50%	845.29	0.020833	82.80
IPA33J	666.40	1001.44	50%	500.72	0.020833	49.05
IPA34J	666.40	1001.44	50%	500.72	0.020833	49.05
IPA35J	373.46	299.76	50%	149.88	0.020833	14.68
IPA36J	324.15	233.24	50%	116.62	0.020833	11.42
IPA37J	331.28	226.11	50%	113.06	0.020833	11.07
IPA39J	502.89	263.52	50%	131.76	0.020833	12.91
IPA40J	621.53	353.90	50%	176.95	0.020833	17.33
IPA41J	415.21	395.25	50%	197.62	0.020833	19.36
IPA42J	1118.65	2123.17	50%	1061.58	0.020833	103.99
IPA44J	391.64	331.52	50%	165.76	0.020833	16.24
IPA45J	435.83	445.02	50%	222.51	0.020833	21.80
IPA46J	435.83	445.02	50%	222.51	0.020833	21.80
IPA49J	506.47	259.94	50%	129.97	0.020833	12.73
IPA50J	850.00	1474.86	50%	737.43	0.020833	72.24
IPA51J	475.26	564.43	50%	282.22	0.020833	27.65
IPA52J	475.26	564.43	50%	282.22	0.020833	27.65
IPA54J	490.47	566.55	50%	283.28	0.020833	27.75
<b>TOTALS:</b>	<b>37333.11</b>			<b>35594.69</b>		<b>3486.83</b>

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Table B-6: Unit 2 AEER General Cabinet Characteristics

Cabinet No.	Row #	Width (ft)	Depth (ft)	Height (ft)	Sections per Cabinet (Qty.)	End Cabinet ("Y" or "N")	Gross Cabinet Wt. (lb <sub>m</sub> )	Gross Cabinet Vol. (ft <sup>3</sup> )	Heat Dissipation (Btu/hr)	Heat Dissipation per Foot of Cabinet (Btu/hr-ft)	Floor (Horz. Top Plate) S.A. (ft <sup>2</sup> )
2PA01J	3	6.71	2.50	7.55	1	N	3550	126.6			16.8
2PA02J	3	6.71	2.50	7.55	1	N	3550	126.6			16.8
2PA03J	3	4.81	2.50	7.55	1	N	3000	90.8			12.0
2PA04J	3	4.81	2.50	7.55	1	N	3000	90.8			12.0
2PA05J	4	6.71	2.50	7.55	1	N	3550	126.6			16.8
2PA06J	4	6.71	2.50	7.55	1	N	3550	126.6			16.8
2PA07J	4	4.81	2.50	7.55	1	Y	3000	90.8			12.0
2PA08J	4	6.71	2.50	7.55	1	Y	3550	126.6			16.8
2PA09J	2	7.50	2.50	7.28	1	N	2800	136.5	1706	227.5	18.8
2PA10J	5	7.50	2.50	7.28	1	N	2800	136.5	1706	227.5	18.8
2PA11J	2	2.50	2.50	7.28	1	Y	2000	45.5	1024	409.6	6.3
2PA12J	5	2.50	2.50	7.28	1	N	2000	45.5	1024	409.6	6.3
2PA13J	2	3.00	2.50	7.28	1	Y	1040	54.6			7.5
2PA14J	5	3.00	2.50	7.28	1	N	1040	54.6			7.5
2PA15J	2	2.50	2.50	7.28	1	N	866	45.5			6.3
2PA16J	5	2.50	2.50	7.28	1	N	866	45.5			6.3
2PA17J	5	2.50	2.50	7.28	1	N	1000	45.5	1365	546.0	6.3
2PA19J	7	16.37	2.50	7.28	1	N	5673	297.9			40.9
2PA20JA	4	4.81	2.50	7.28	1	Y	1668	87.6			12.0
2PA20JB	4	4.81	2.50	7.28	1	N	1668	87.6			12.0
2PA26JC	3	4.67	3.04	7.28	1	Y	1968	103.3			14.2
2PA21J	3	6.50	2.50	7.28	1	N	2253	118.3			16.3
2PA22J	6	16.02	2.79	7.50	1	Y	6200	335.4			44.7
2PA23J	1	15.83	2.50	7.28	1	Y	5487	288.2			39.6
2PA24J	2	2.50	2.50	7.28	1	N	866	45.5			6.3
2PA25J	5	2.50	2.50	7.28	1	Y	866	45.5			6.3
2PA26J	3	2.50	2.50	7.28	1	Y	866	45.5			6.3
2PA27J	2	2.50	2.50	7.28	1	Y	2000	45.5			6.3
2PA28J	5	2.50	2.50	7.28	1	Y	2000	45.5			6.3
2PA29J	1	4.00	2.50	7.28	1	N	1386	72.8			10.0
2PA30J	6	15.25	2.50	7.28	1	Y	5285	277.6			38.1
2PA31J	7	7.63	2.50	7.28	1	N	2643	138.8			19.1
2PA32J	6	7.63	2.50	7.28	1	N	2643	138.8			19.1
2PA33J	3	4.81	2.50	7.28	1	N	1668	87.6			12.0
2PA34J	5	4.81	2.50	7.28	1	N	1668	87.6			12.0
2PA35J	3	2.01	2.42	7.28	1	N	673	35.4			4.9
2PA36J	5	2.01	2.01	7.28	1	Y	557	29.3			4.0
2PA37J	5	2.01	2.01	7.28	1	N	557	29.3			4.0
2PA39J	0	5.50	1.01	7.28	1	Y	766	40.2			5.5
2PA40J	0	7.00	1.01	7.28	1	Y	975	51.2			7.0
2PA41J	7	2.34	2.50	7.28	1	N	810	42.6			5.8
2PA42J	7	9.35	2.50	7.28	1	Y	3242	170.2			23.4
2PA44J	1	2.01	2.60	7.28	1	N	723	38.0			5.2
2PA45J	2	2.54	2.50	7.28	1	N	881	46.3			6.4
2PA49J	0	5.50	1.01	7.28	1	N	766	40.2			5.5
2PA50J	2	6.67	3.04	7.28	1	Y	2811	147.6			20.3
2PA51J	7	2.50	3.00	7.28	1	Y	1040	54.6			7.5
2PA52J	1	2.50	3.00	7.28	1	Y	1040	54.6			7.5
2PA54J	5	2.54	3.00	7.28	1	N	1057	55.5			7.6
TOTALS:		261.58					103869.99	4699.22			639.70

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Table B-7: Unit 2 AEER Electrical Cabinet Shell Details

Cabinet No.	Gross Outer Shell S.A. (ft <sup>2</sup> )	Opening Reduction (%)	Net Outer Shell S.A. (ft <sup>2</sup> )	Net Inner Shell S.A. (ft <sup>2</sup> )	Shell Thickness (ft)	Net Outer Shell Wt. (lb <sub>m</sub> )	Net Inner Shell Wt. (lb <sub>m</sub> )	Total Shell Wt. (lb <sub>m</sub> )
2PA01J	118.07	10%	106.26	37.75	0.009967	518.94	184.36	703.30
2PA02J	118.07	10%	106.26	37.75	0.009967	518.94	184.36	703.30
2PA03J	84.70	10%	76.23	37.75	0.009967	372.28	184.36	556.64
2PA04J	84.70	10%	76.23	37.75	0.009967	372.28	184.36	556.64
2PA05J	118.07	10%	106.26	37.75	0.009967	518.94	184.36	703.30
2PA06J	118.07	10%	106.26	37.75	0.009967	518.94	184.36	703.30
2PA07J	103.58	10%	93.22	18.88	0.009967	455.24	92.18	547.42
2PA08J	136.94	10%	123.25	18.88	0.009967	601.90	92.18	694.08
2PA09J	127.95	10%	115.16	36.40	0.009967	562.38	177.77	740.14
2PA10J	127.95	10%	115.16	36.40	0.009967	562.38	177.77	740.14
2PA11J	60.85	10%	54.77	18.20	0.009967	267.45	88.88	356.34
2PA12J	42.65	10%	38.39	36.40	0.009967	187.46	177.77	365.23
2PA13J	69.38	10%	62.44	18.20	0.009967	304.95	88.88	393.83
2PA14J	51.18	10%	46.06	36.40	0.009967	224.95	177.77	402.72
2PA15J	42.65	10%	38.39	36.40	0.009967	187.46	177.77	365.23
2PA16J	42.65	10%	38.39	36.40	0.009967	187.46	177.77	365.23
2PA17J	42.65	10%	38.39	36.40	0.009967	187.46	177.77	365.23
2PA19J	279.27	10%	251.34	36.40	0.009967	1227.47	177.77	1405.23
2PA20JA	100.30	10%	90.27	18.20	0.009967	440.85	88.88	529.74
2PA20JB	82.10	10%	73.89	36.40	0.009967	360.86	177.77	538.63
2PA20JC	104.28	10%	93.86	22.14	0.009967	458.36	108.14	566.50
2PA21J	110.89	10%	99.80	36.40	0.009967	487.39	177.77	665.16
2PA22J	305.97	10%	275.38	20.94	0.009967	1344.85	102.25	1447.10
2PA23J	266.52	10%	259.49	18.20	0.009967	1267.24	88.88	1356.12
2PA24J	42.65	10%	38.39	36.40	0.009967	187.46	177.77	365.23
2PA25J	60.85	10%	54.77	18.20	0.009967	267.45	88.88	356.34
2PA26J	60.85	10%	54.77	18.20	0.009967	267.45	88.88	356.34
2PA27J	60.85	10%	54.77	18.20	0.009967	267.45	88.88	356.34
2PA28J	60.85	10%	54.77	18.20	0.009967	267.45	88.88	356.34
2PA29J	68.24	10%	61.42	36.40	0.009967	299.94	177.77	477.70
2PA30J	278.37	10%	250.53	18.20	0.009967	1223.50	88.88	1312.38
2PA31J	130.08	10%	117.07	36.40	0.009967	571.75	177.77	749.52
2PA32J	130.08	10%	117.07	36.40	0.009967	571.75	177.77	749.52
2PA33J	82.10	10%	73.89	36.40	0.009967	360.86	177.77	538.63
2PA34J	82.10	10%	73.89	36.40	0.009967	360.86	177.77	538.63
2PA35J	34.05	10%	30.65	35.26	0.009967	149.67	172.21	321.88
2PA36J	47.81	10%	43.03	14.60	0.009967	210.16	71.29	281.45
2PA37J	33.22	10%	29.90	29.20	0.009967	146.00	142.58	288.58
2PA38J	92.93	10%	83.63	7.32	0.009967	408.44	35.74	444.18
2PA40J	116.27	10%	104.65	7.32	0.009967	511.06	35.74	546.80
2PA41J	39.90	10%	35.91	36.40	0.009967	175.35	177.77	353.12
2PA42J	177.78	10%	160.00	18.20	0.009967	781.41	88.88	870.29
2PA44J	34.41	10%	30.97	37.88	0.009967	151.25	184.99	336.24
2PA45J	43.36	10%	39.02	36.40	0.009967	190.58	177.77	368.35
2PA49J	85.61	10%	77.05	14.64	0.009967	376.28	71.48	447.75
2PA50J	139.49	10%	125.54	22.14	0.009967	613.09	108.14	721.23
2PA51J	65.74	10%	59.17	21.84	0.009967	288.95	106.66	395.61
2PA52J	65.74	10%	59.17	21.84	0.009967	288.95	106.66	395.61
2PA54J	44.63	10%	40.17	43.68	0.009967	196.17	213.32	409.49
TOTALS:	4839.20		4355.28	1400.24		21269.72	6838.31	

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Table B-8: Unit 2 AEER Electrical Cabinet Mounting Base Details

Cabinet No.	57.76*4.0 @7.25# Ch. (Qty.)	80.5*4.0 @7.25# Ch. (Qty.)	30.0*4.0 @7.25# Ch. (Qty.)	26.56*4.0 @7.25# Ch. (Qty.)	3.5*3.5*.312 Gusset (Qty.)	90.0*4.0 @7.25# Ch. (Qty.)	26.0*4.0 @13.0# H-beam (Qty.)	Calc. Mounting Base Wt. (lb <sub>m</sub> )	Calc. Mounting Base S.A. (ft <sup>2</sup> )	Est. Mounting Base Wt. (lb <sub>m</sub> )	Est. Mounting Base S.A. (ft <sup>2</sup> )
2PA01J		2	2	2	12			172.12	14.67		
2PA02J		2	2	2	12			172.12	14.67		
2PA03J	2		2	1	8			126.43	10.78		
2PA04J	2		2	1	8			126.43	10.78		
2PA05J		2	2	2	12			172.12	14.67		
2PA06J		2	2	2	12			172.12	14.67		
2PA07J	2		2	1	8			126.43	10.78		
2PA08J		2	2	2	12			172.12	14.67		
2PA09J			2		12	2	2	207.84	16.90		
2PA10J			2		12	2	2	207.84	16.90		
2PA11J			4		4			74.67	6.37		
2PA12J			4		4			74.67	6.37		
2PA13J										79.65	6.72
2PA14J										79.65	6.72
2PA15J										66.38	5.60
2PA16J										66.38	5.60
2PA17J										66.38	5.60
2PA19J										434.63	36.66
2PA20JA										127.77	10.78
2PA20JB										127.77	10.78
2PA20JC										150.75	12.72
2PA21J										172.58	14.56
2PA22J										474.99	40.06
2PA23J										420.38	35.46
2PA24J										66.38	5.60
2PA25J										66.38	5.60
2PA26J										66.38	5.60
2PA27J										66.38	5.60
2PA28J										66.38	5.60
2PA29J										106.20	8.96
2PA30J										404.89	34.15
2PA31J										202.45	17.08
2PA32J										202.45	17.08
2PA33J										127.77	10.78
2PA34J										127.77	10.78
2PA35J										51.58	4.35
2PA36J										42.70	3.60
2PA37J										42.70	3.60
2PA39J										58.72	4.95
2PA40J										74.73	6.30
2PA41J										62.09	5.24
2PA42J										248.36	20.95
2PA44J										55.40	4.67
2PA45J										67.48	5.69
2PA49J										58.72	4.95
2PA50J										215.35	18.16
2PA51J										79.65	6.72
2PA52J										79.65	6.72
2PA54J										80.98	6.83
TOTALS:								1804.88	152.24	4988.83	420.80

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**Table B-9: Unit 2 AEER Electrical Cabinet Unquantified Heat Sink Estimation**

Cabinet No.	Total Cabinet Wt. Quantified (lb <sub>m</sub> )	Unquantified Cabinet Wt. (lb <sub>m</sub> )	Unquantified			
			Cabinet Wt. Attr. to Structural Steel (%)	Unquantified Cabinet Wt. Attr. to Structural Steel (lb <sub>m</sub> )	Unquantified Cabinet Mass Attr. to Struct. Steel Avg. Thickness (ft)	Unquantified Mass Attr. to Struct. Steel Avg. S.A. (ft)
2PA01J	875.42	2674.58	50%	1337.29	0.020833	131.00
2PA02J	875.42	2674.58	50%	1337.29	0.020833	131.00
2PA03J	683.07	2316.93	50%	1158.47	0.020833	113.48
2PA04J	683.07	2316.93	50%	1158.47	0.020833	113.48
2PA05J	875.42	2674.58	50%	1337.29	0.020833	131.00
2PA06J	875.42	2674.58	50%	1337.29	0.020833	131.00
2PA07J	673.85	2326.15	50%	1163.08	0.020833	113.93
2PA08J	866.20	2683.80	50%	1241.90	0.020833	131.45
2PA09J	947.98	1852.02	50%	926.01	0.020833	90.71
2PA10J	947.98	1852.02	50%	926.01	0.020833	90.71
2PA11J	431.00	1569.00	50%	784.50	0.020833	76.85
2PA12J	439.89	1560.11	50%	780.05	0.020833	76.41
2PA13J	473.48	566.21	50%	283.11	0.020833	27.73
2PA14J	482.37	557.32	50%	278.66	0.020833	27.30
2PA15J	431.60	434.81	50%	217.40	0.020833	21.30
2PA16J	431.60	434.81	50%	217.40	0.020833	21.30
2PA17J	431.60	568.40	50%	284.20	0.020833	27.84
2PA19J	1839.86	3833.31	50%	1916.66	0.020833	187.75
2PA20JA	657.51	1010.33	50%	505.16	0.020833	49.49
2PA20JB	666.40	1001.44	50%	500.72	0.020833	49.05
2PA20JC	717.25	1250.46	50%	625.23	0.020833	61.25
2PA21J	837.74	1404.93	50%	707.46	0.020833	69.30
2PA22J	1922.09	4277.91	50%	2138.96	0.020833	209.53
2PA23J	1776.50	3710.75	50%	1855.38	0.020833	181.75
2PA24J	431.60	434.81	50%	217.40	0.020833	21.30
2PA25J	422.71	443.70	50%	221.85	0.020833	21.73
2PA26J	422.71	443.70	50%	221.85	0.020833	21.73
2PA27J	422.71	1577.29	50%	788.64	0.020833	77.25
2PA28J	422.71	1577.29	50%	788.64	0.020833	77.25
2PA29J	583.90	802.35	50%	401.18	0.020833	22.30
2PA30J	1717.28	3567.82	50%	1783.91	0.020833	174.75
2PA31J	951.96	1690.58	50%	845.29	0.020833	82.80
2PA32J	951.96	1690.58	50%	845.29	0.020833	82.80
2PA33J	666.40	1001.44	50%	500.72	0.020833	49.05
2PA34J	666.40	1001.44	50%	500.72	0.020833	49.05
2PA35J	373.46	299.76	50%	149.88	0.020833	14.68
2PA36J	324.15	233.24	50%	116.62	0.020833	11.42
2PA37J	331.28	226.11	50%	113.06	0.020833	11.07
2PA39J	502.89	263.52	50%	131.76	0.020833	12.91
2PA40J	621.53	353.90	50%	176.95	0.020833	17.33
2PA41J	415.21	395.25	50%		0.020833	
2PA42J	1118.65	2123.17	50%	1061.58	0.020833	103.99
2PA44J	391.64	331.52	50%	165.76	0.020833	16.24
2PA45J	435.83	445.02	50%	222.51	0.020833	21.80
2PA49J	506.47	259.94	50%	129.97	0.020833	12.73
2PA50J	936.59	1874.43	50%	937.22	0.020833	91.81
2PA51J	475.26	564.43	50%	282.22	0.020833	27.65
2PA52J	475.26	564.43	50%	282.22	0.020833	27.65
2PA54J	490.47	566.55	50%	283.28	0.020833	27.75
<b>TOTALS:</b>	34901.74			34286.50		3358.68

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**Table B-10: Control Room Ventilated Cabinet General Characteristics**

Cabinet No.	L <sub>main</sub> (ft)	L <sub>display</sub> <sup>1</sup> (ft)	L <sub>front</sub> (ft)	Depth (ft)	Height	Total Cabinet Weight (lb <sub>m</sub> )	Gross Vol. (ft <sup>3</sup> )	Number of Diagonal Sections <sup>2</sup>	End Cabinet? ("Y" or "N")
1PM01J	16.75	16.75	16.75	5.98	8.21	6500	590.43	0	Y
1PM02J	15.27	13.85	12.83	5.98	8.21	5376	488.35	1	N
1PM03J	11.83	9.00	6.96	5.98	8.21	4500	317.24	2	N
1PM05J B1	11.83	9.00	6.96	5.98	8.21	3493	317.24	2	N
1PM05J B2	17.83	15.00	12.96	5.98	8.21	5821	528.74	2	N
1PM06J	21.44	20.02	19.00	5.98	8.21	7769	705.72	1	Y
2PM01J	16.75	16.75	16.75	5.98	8.21	6500	590.43	0	Y
2PM02J	15.27	13.85	12.83	5.98	8.21	5376	488.35	1	N
2PM03J	11.83	9.00	6.96	5.98	8.21	4500	317.24	2	N
2PM05J B1	11.83	9.00	6.96	5.98	8.21	3493	317.24	2	N
2PM05J B2	17.83	15.00	12.96	5.98	8.21	5821	528.74	2	N
2PM06J	21.44	20.02	19.00	5.98	8.21	7769	705.72	1	Y
TOTALS:	189.92		150.92	71.75	98.50	66917.91	5895.46		

Notes:

1. The parameter L<sub>display</sub> is the length of the primary vertical portion of the Main Control Board in which a majority of the displays are mounted. This length is given for each of the cabinets in Reference 5.4.1.
2. The number of diagonal sections indicates whether the ends of the cabinets are angled.

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Table B-11: Control Room Ventilated Cabinet Shell Surface Areas

Cabinet No.	Gross Front Plate S.A. (ft <sup>2</sup> )	Side Plate S.A. (ft <sup>2</sup> )	Gross Top Plate S.A. (ft <sup>2</sup> )	Rear Plate S.A. (ft <sup>2</sup> )	Louvered Access Panels (Qty.)	Louvered Access Panel S.A. (ft <sup>2</sup> )	Front Plate Instr. Red. (%)	Net Instr. S.A. (ft <sup>2</sup> )	Net Front & Side Plate S.A. (ft <sup>2</sup> )	Ducted Vents (Qty.)	Vent Open Area (ft <sup>2</sup> )	Top Access Cover S.A. (ft <sup>2</sup> )	Net Top Plate S.A. (ft <sup>2</sup> )
1PM01J	168.55	35.25	68.40	137.49	3	12.00	25%	39.14	152.66	1	0.7854	2.95	64.66
1PM02J	135.46	0.00	58.90	125.35	3	12.00	25%	30.87	92.60	2	1.5708	2.75	53.01
1PM03J	82.67	0.00	41.41	97.13	2	8.00	25%	18.67	56.00	1	0.7854	2.03	38.60
1PM05J B1	82.67	0.00	41.41	97.13	2	8.00	25%	18.67	56.00	1	0.7854	2.03	38.60
1PM05J B2	143.05	0.00	65.91	146.38	3	12.00	25%	32.76	98.28	2	1.5708	3.48	59.29
1PM06J	197.53	35.25	84.09	175.99	4	16.00	25%	45.38	171.40	2	1.5708	3.48	77.47
2PM01J	168.55	35.25	68.40	137.49	3	12.00	25%	39.14	152.66	1	0.7854	2.95	64.66
2PM02J	135.46	0.00	58.90	125.35	3	12.00	25%	30.87	92.60	2	1.5708	2.75	53.01
2PM03J	82.67	0.00	41.41	97.13	2	8.00	25%	18.67	56.00	1	0.7854	2.03	38.60
2PM05J B1	82.67	0.00	41.41	97.13	2	8.00	25%	18.67	56.00	1	0.7854	2.03	38.60
2PM05J B2	143.05	0.00	65.91	146.38	3	12.00	25%	32.76	98.28	2	1.5708	3.48	59.29
2PM06J	197.53	35.25	84.09	175.99	4	16.00	25%	45.38	171.40	2	1.5708	3.48	77.47
TOTALS:	1619.85	141.00	720.26	1558.94	34	136.00		370.96	1253.88	18	14.14	33.44	663.26

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**Table B-12: Control Room Ventilated Cabinet Thickness' and Weights**

Cabinet No.	Front/Side Plate Thickness (ft)	Top Plate Thickness (ft)	Rear Plate Thickness (ft)	Louvered Access Panel Thickness (ft)	Represent. Instr. Thickness (ft)	Top Access Cover Thickness (ft)	Front/Side Plate Weight (lb <sub>m</sub> )	Top Plate Weight (lb <sub>m</sub> )	Rear Plate Weight (lb <sub>m</sub> )	Louvered Access Panel Weight (lb <sub>m</sub> )	Rep. Instr. Weight (lb <sub>m</sub> )	Top Acces Cover Weight (lb <sub>m</sub> )	Total Shell Weight (lb <sub>m</sub> )
1PM01J	0.020833	0.011208	0.008717	0.008717	0.009967	0.009967	1558.40	355.12	587.24	51.25	191.13	14.41	2757.55
1PM02J	0.020833	0.011208	0.008717	0.008717	0.009967	0.009967	945.25	291.14	535.38	51.25	150.74	13.43	1987.19
1PM03J	0.020833	0.011208	0.008717	0.008717	0.009967	0.009967	571.69	211.98	414.87	34.17	91.17	9.91	1333.79
1PM04J	0.020833	0.011208	0.008717	0.008717	0.009967	0.009967	571.69	211.98	414.87	34.17	91.17	9.91	1333.79
1PM05J B1	0.020833	0.011208	0.008717	0.008717	0.009967	0.009967	1003.31	325.63	625.22	51.25	160.00	17.00	2182.41
1PM05J B2	0.020833	0.011208	0.008717	0.008717	0.009967	0.009967	1749.67	425.48	751.67	68.34	221.63	17.00	3233.79
1PM06J	0.020833	0.011208	0.008717	0.008717	0.009967	0.009967	1558.40	355.12	587.24	51.25	191.13	14.41	2757.55
2PM01J	0.020833	0.011208	0.008717	0.008717	0.009967	0.009967	945.25	291.14	535.38	51.25	150.74	13.43	1987.19
2PM02J	0.020833	0.011208	0.008717	0.008717	0.009967	0.009967	571.69	211.98	414.87	34.17	91.17	9.91	1333.79
2PM03J	0.020833	0.011208	0.008717	0.008717	0.009967	0.009967	571.69	211.98	414.87	34.17	91.17	9.91	1333.79
2PM04J	0.020833	0.011208	0.008717	0.008717	0.009967	0.009967	1003.31	325.63	625.22	51.25	160.00	17.00	2182.41
2PM05J B1	0.020833	0.011208	0.008717	0.008717	0.009967	0.009967	1749.67	425.48	751.67	68.34	221.63	17.00	3233.79
2PM05J B2	0.020833	0.011208	0.008717	0.008717	0.009967	0.009967	1558.40	355.12	587.24	51.25	191.13	14.41	2757.55
2PM06J	0.020833	0.011208	0.008717	0.008717	0.009967	0.009967	945.25	291.14	535.38	51.25	150.74	13.43	1987.19
TOTALS:							12800.04	3642.68	6658.49	580.88	1811.65	163.31	25657.05

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**Table B-13: Control Room Ventilated Cabinet Unquantified Structural Steel Estimation**

Cabinet No.	Fraction of Total Cabinet Mass Quantified (%)	Total Unquantified Cabinet Mass (lb <sub>m</sub> )	Unquantified Cabinet Mass Attr. to Struct Steel (%)	Unquantified Cabinet Mass Attr. to Struct Steel (lb <sub>m</sub> )	Representative Thickness of Unquantified Mass (ft)	Total S.A. of Unquantified Mass (ft <sup>2</sup> )
1PM01J	42%	3742.45	60%	2245.47	0.020833	219.96
1PM02J						
1PM03J	37%	3389.05	60%	2033.43	0.020833	199.19
1PM04J	30%	3166.21	60%	1899.73	0.020833	186.10
1PM05J B1	38%	2158.75	60%	1295.25	0.020833	126.88
1PM05J B2	37%	3638.48	60%	2183.09	0.020833	213.85
1PM06J	42%	4535.49	60%	2721.29	0.020833	266.58
2PM01J	42%	3742.45	60%	2245.47	0.020833	219.96
2PM02J						
2PM03J	37%	3389.05	60%	2033.43	0.020833	199.19
2PM04J	30%	3166.21	60%	1899.73	0.020833	186.10
2PM05J B1	38%	2158.75	60%	1295.25	0.020833	126.88
2PM05J B2	37%	3638.48	60%	2183.09	0.020833	213.85
2PM06J	42%	4535.49	60%	2721.29	0.020833	266.58
TOTALS:		41260.86		24756.51		2425.13

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Table B-14: Control Room Non-Ventilated Cabinet General Characteristics

Cabinet No.	Width (ft)	Depth (ft)	Height (ft)	Sections per Cabinet (Qty.)	Mounting* ("S", "M", "E")	Gross Cabinet Wt. (lb <sub>m</sub> )	Gross Cabinet Vol. (ft <sup>3</sup> )	Floor S.A. (ft <sup>2</sup> )	Vent Opening Area (ft <sup>2</sup> )	Top Access Cover S.A. (ft <sup>2</sup> )
0PM01J	11.67	2.50	7.58	1	M	3800	221.18	29.17	0.56	1.69
0PM02J	16.67	2.50	7.58	1	E	5500	315.97	41.67	0.97	2.66
0PM03J	7.00	2.50	7.58	1	E	2800	132.71	17.50	0.42	1.20
1PM07J	7.38	2.50	7.58	1	E	2402	139.82	18.44	0.38	1.32
1PM08J	7.38	2.50	7.58	1	M	2402	139.82	18.44	0.38	1.32
1PM09J	10.00	2.50	7.58	1	S	3257	189.58	25.00	0.51	1.79
1PM10J	10.00	2.50	7.58	1	E	3257	189.58	25.00	0.51	1.79
1PM11J	6.83	2.50	7.58	1	S	2400	129.55	17.08	0.28	1.09
1PM12J	10.00	2.50	8.21	1	E	3257	205.21	25.00	0.56	2.08
2PM07J	7.38	2.50	7.58	1	E	2402	139.82	18.44	0.38	1.32
2PM08J	7.38	2.50	7.58	1	M	2402	139.82	18.44	0.38	1.32
2PM09J	10.00	2.50	7.58	1	S	3257	189.58	25.00	0.51	1.79
2PM10J	10.00	2.50	7.58	1	E	3257	189.58	25.00	0.51	1.79
2PM11J	6.83	2.50	7.58	1	S	2400	129.55	17.08	0.28	1.09
2PM12J	10.00	2.50	8.21	1	E	3257	205.21	25.00	0.56	2.08
TOTALS:	138.50					46051.43	2656.98	346.25	7.19	24.33

\* S = Single Cabinet, M = Middle cabinet in a row (bounded on both sides), E = End cabinet

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**Table B-15: Control Room Non-Ventilated Cabinet Shell Surface Area and Thickness Details**

Cabinet No.	Front Plate S.A. (ft <sup>2</sup> )	External Side Plate S.A. (ft <sup>2</sup> )	Internal Side Plate S.A. (ft <sup>2</sup> )	Top Plate S.A. (ft <sup>2</sup> )	Rear Plate S.A. (ft <sup>2</sup> )	Front Plate Thickness (ft)	External Side Plate Thickness (ft)	Internal Side Plate Thickness (ft)	Top Plate Thickness (ft)	Rear Plate Thickness (ft)
0PM01J	88.47	0.00	37.92	27.48	87.92	0.020833	0.020833	0.020833	0.011208	0.008717
0PM02J	126.39	18.96	18.96	39.01	125.42	0.020833	0.020833	0.020833	0.011208	0.008717
0PM03J	53.08	18.96	18.96	16.30	52.67	0.020833	0.020833	0.020833	0.011208	0.008717
1PM07J	55.93	18.96	18.96	17.12	55.55	0.020833	0.020833	0.020833	0.011208	0.008717
1PM08J	55.93	0.00	37.92	17.12	55.55	0.020833	0.020833	0.020833	0.011208	0.008717
1PM09J	75.83	37.92	0.00	23.21	75.32	0.020833	0.020833	0.020833	0.011208	0.008717
1PM10J	75.83	18.96	18.96	23.21	75.32	0.020833	0.020833	0.020833	0.011208	0.008717
1PM11J	51.82	37.92	0.00	15.99	51.54	0.020833	0.020833	0.020833	0.011208	0.008717
1PM12J	82.08	20.52	20.52	22.92	81.53	0.020833	0.020833	0.020833	0.011208	0.008717
2PM07J	55.93	18.96	18.96	17.12	55.55	0.020833	0.020833	0.020833	0.011208	0.008717
2PM08J	55.93	0.00	37.92	17.12	55.55	0.020833	0.020833	0.020833	0.011208	0.008717
2PM09J	75.83	37.92	0.00	23.21	75.32	0.020833	0.020833	0.020833	0.011208	0.008717
2PM10J	75.83	18.96	18.96	23.21	75.32	0.020833	0.020833	0.020833	0.011208	0.008717
2PM11J	51.82	37.92	0.00	15.99	51.54	0.020833	0.020833	0.020833	0.011208	0.008717
2PM12J	82.08	20.52	20.52	22.92	81.53	0.020833	0.020833	0.020833	0.011208	0.008717
TOTALS:	1062.79	306.46	268.54	321.92	1055.60					

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**Table B-16: Control Room Non-Ventilated Cabinet Mass Details**

Cabinet No.	Front Plate Mass (lb <sub>m</sub> )	External Side Plate Mass (lb <sub>m</sub> )	Internal Side Plate Mass (lb <sub>m</sub> )	Top Plate Mass (lb <sub>m</sub> )	Rear Plate Mass (lb <sub>m</sub> )	Total Cabinet Mass Quantified (lb <sub>m</sub> )	Fraction of Total Cabinet Mass Quantified (%)	Total Unquantified Cabinet Mass (lb <sub>m</sub> )	Unquantified Cabinet Mass Attr. to Struct Steel (%)	Unquantified Cabinet Mass Attr. to Struct Steel (lb <sub>m</sub> )	Representative Thickness of Unquantified Mass (ft)	Total S.A. of Unquantified Mass (ft <sup>2</sup> )
0PM01J	903.15	0.00	387.07	150.90	375.51	1816.63	47.81%	1983.37	60%	1190.02	0.020833	116.57
0PM02J	1290.22	193.53	193.53	214.23	535.68	2427.19	44.13%	3072.81	60%	1843.69	0.020833	180.61
0PM03J	541.89	193.53	193.53	89.52	224.95	1243.43	44.41%	1556.57	60%	933.94	0.020833	91.49
1PM07J	570.92	193.53	193.53	94.01	237.25	1289.25	53.67%	1112.89	60%	667.73	0.020833	65.41
1PM08J	570.92	3.00	387.07	94.01	237.25	1289.25	53.67%	1112.89	60%	667.73	0.020833	65.41
1PM09J	774.13	387.07	0.00	127.47	321.70	1610.37	49.44%	1646.77	60%	988.06	0.020833	96.79
1PM10J	774.13	193.53	193.53	127.47	321.70	1610.37	49.44%	1646.77	60%	988.06	0.020833	96.79
1PM11J	528.99	387.07	0.00	87.84	220.14	1224.04	51.00%	1175.96	60%	705.58	0.020833	69.12
1PM12J	837.93	209.48	209.48	125.88	348.22	1731.00	53.14%	1526.14	60%	915.69	0.020833	89.70
2PM07J	570.92	193.53	193.53	94.01	237.25	1289.25	53.67%	1112.89	60%	667.73	0.020833	65.41
2PM08J	570.92	0.00	387.07	94.01	237.25	1289.25	53.67%	1112.89	60%	667.73	0.020833	65.41
2PM09J	774.13	387.07	0.00	127.47	321.70	1610.37	49.44%	1646.77	60%	988.06	0.020833	96.79
2PM10J	774.13	193.53	193.53	127.47	321.70	1610.37	49.44%	1646.77	60%	988.06	0.020833	96.79
2PM11J	528.99	387.07	0.00	87.84	220.14	1224.04	51.00%	1175.96	60%	705.58	0.020833	69.12
2PM12J	837.93	209.48	209.48	125.88	348.22	1731.00	53.14%	1526.14	60%	915.69	0.020833	89.70
TOTALS:	10849.33	3128.43	2741.36	1768.03	4508.66	22995.81		23055.62		13833.37		1355.11

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## Attachment C

### Heat Transfer Coefficient Auxiliary Calculations

#### Attachment C Contents:

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**Table C-1: Determination of Water Vapor Emissivity**

**Unit 1 AEER**

Initial Temperature:	77 °F	(Design Input 4.2)
Initial Pressure:	14.7 psia	(Atmospheric)
Initial Relative Humidity:	40%	(Assumption 3.5)
Saturation Pressure:	0.4592 psia	(ASME Steam Tables)
$P_{wv}$ :	0.1837 psia =	0.01250 bar
$P_{air}$ :	14.5163 psia =	0.98771 bar
$V_{AEER1}$ :	29534 ft <sup>3</sup>	(Attachment A, Length*Width*Height)
$A_{AEER1}$ :	7306 ft <sup>2</sup>	(Attachment A, 2*L*W+2*L*H+2*W*H)
V/A:	4.04 ft	
Mean Beam Length Reduction:	20%	
Mean Beam Length, L:	14.55 ft	(= 3.6*V/A, Reference 5.10, pg. 788)
Reduced Mean Beam Length, $L_{red}$ :	11.64 ft	(=L*(1-Mean Beam Length Reduction))
$P_{wv}L_{red}$ :	0.15 ft-bar	
$\epsilon_w$ :	0.15	(Approximate, Reference 5.11, Figure 4-15)

**Control Room**

Initial Temperature:	77 °F	(Design Input 4.2)
Initial Pressure:	14.7 psia	(Atmospheric)
Initial Relative Humidity:	40%	(Assumption 3.5)
Saturation Pressure:	0.4592 psia	(ASME Steam Tables)
$P_{wv}$ :	0.1837 psia =	0.01250 bar
$P_{air}$ :	14.5163 psia =	0.98771 bar
$V_{CR}$ :	69800 ft <sup>3</sup>	(Attachment A, Length*Width*Height)
$A_{CR}$ :	15650 ft <sup>2</sup>	(Attachment A, 2*L*W+2*L*H+2*W*H)
V/A:	4.46 ft	
Mean Beam Length Reduction:	20%	
Mean Beam Length, L:	16.06 ft	(= 3.6*V/A, Reference 5.10, pg. 788)
Reduced Mean Beam Length, $L_{red}$ :	12.84 ft	(=L*(1-Mean Beam Length Reduction))
$P_{wv}L_{red}$ :	0.16 ft-bar	
$\epsilon_w$ :	0.155	(Approximate, Reference 5.11, Figure 4-15)

Value of  $\epsilon_w$  used for all rooms in the model: 0.15

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**Table C-2: Calculation of the Combined Heat Transfer Coefficient For Cabinet  
Internal Structural Steel**

Cabinet Air Temperature:	95 °F	
Structural Steel Temperature:	94 °F	
$h_{\text{horiz}}:$	0.22 Btu/hr-°F-ft <sup>2</sup>	$=0.22(T_{\text{cab}} - T_{\text{steel}})^{0.33}$ (Ref. 5.11)
$h_{\text{vert}}:$	0.19 Btu/hr-°F-ft <sup>2</sup>	$=0.19(T_{\text{cab}} - T_{\text{steel}})^{0.33}$ (Ref. 5.11)
$h_{\text{rad}}:$	0.53 Btu/hr-°F-ft <sup>2</sup>	$=\epsilon\sigma(T_{\text{cab}} + T_s)(T_{\text{cab}}^2 + T_s^2)$ [T in °R]
Minimum Combined Rad/NC HTC:	0.72 Btu/hr-°F-ft <sup>2</sup>	
Conservative Value Used in Model:	0.7 Btu/hr-°F-ft <sup>2</sup>	

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### Discussion of the Natural Convection Heat Transfer Coefficients:

The purpose of this discussion is to evaluate the applicability of the turbulent natural convection heat transfer coefficients utilized to model heat transfer at the surfaces of the electrical cabinets. Natural convection heat transfer coefficients between vertical plates and air are obtained from Reference 5.11 and they are given in Equations (C.1) and (C.2) for turbulent and laminar conditions respectively.

$$h_{\text{vert,t}} = 0.19(\Delta T)^{1/3} \quad (\text{C.1})$$

$$h_{\text{vert,l}} = 0.29(\Delta T / x)^{1/4} \quad (\text{C.2})$$

Similarly, the natural convection heat transfer coefficient relations for a horizontal plate in air that is heated and facing up or cooled and facing down are also obtained from Reference 5.11 and they are shown in Equations (C.3) and (C.4) for turbulent and laminar conditions respectively.

$$h_{\text{horz,t}} = 0.22(\Delta T)^{1/3} \quad (\text{C.3})$$

$$h_{\text{horz,l}} = 0.27(\Delta T / x)^{1/4} \quad (\text{C.4})$$

In Equations (C.2) and (C.4), the parameter  $x$  is the length of the plate measured in feet.

The transition to turbulence in natural convection flows is indicated by the Rayleigh number which is the product of the Grashof and Prandtl numbers as shown in Equation (C.5).

$$Ra = Gr \cdot Pr \quad (\text{C.5})$$

The Grashof and Prandtl numbers are given in Equations (C.6) and (C.7) respectively.

$$Gr = \frac{g\beta\Delta T x^3}{\nu^2} \quad (\text{C.6})$$

$$Pr = \frac{c_p \mu}{k} \quad (\text{C.7})$$

The various parameters used in Equations (C.1) through (C.7) are defined as follows:

### Discussion of the Natural Convection Heat Transfer Coefficients: (Continued)

$c_p$	Specific heat of air at constant pressure (Btu/lb <sub>m</sub> -°F)
$g$	Gravitational acceleration ( $= 4.17 \cdot 10^6$ ft/hr <sup>2</sup> )
$k$	Thermal conductivity of air (Btu/hr-ft-°F)
$\Delta T$	Temperature difference between the room air and the heat structure surface (°F)
$\beta$	Volumetric thermal expansion coefficient (°F <sup>-1</sup> )
$\mu$	Dynamic viscosity of air (lb <sub>m</sub> /ft-hr)
$\rho$	Density of air (lb <sub>m</sub> /ft <sup>3</sup> )
$\nu$	Kinematic viscosity of air (ft <sup>2</sup> /hr)

Turbulent conditions exist for Rayleigh numbers larger than approximately  $2 \cdot 10^7$  and  $1 \cdot 10^9$  for horizontal and vertical plates respectively (Ref. 5.11). In the current electrical cabinet analysis, turbulent values of the heat transfer coefficients are used for both vertical and horizontal surfaces under all temperature differences. Since it is conservative to minimize the heat transfer coefficients, the valid use of turbulent heat transfer coefficients is governed by two constraints: the turbulent values must either be smaller in magnitude than the laminar values or turbulent conditions must exist. To examine the validity of the current cabinet model, the values of the vertical and horizontal heat transfer coefficients are calculated for a range of characteristic lengths and temperature differences in Table C-3.

Utilizing the values listed in Table C-3, it is shown that for lengths of approximately less than one foot and Rayleigh numbers less than  $1 \cdot 10^7$ , the turbulent natural convection coefficients are less than the laminar values. As the Rayleigh number approaches the transition value, the turbulent coefficient is slightly larger, however, the differences between the turbulent and laminar values are small. Furthermore, the horizontal surfaces of the electrical cabinets (i.e., the top plates) generally have a characteristic length of greater than two feet. Based on the data for a characteristic length of two feet, turbulent conditions exist beyond a temperature difference of approximately 1°F, therefore, the use of the turbulent heat transfer coefficients on the cabinet horizontal surfaces is acceptable over a wide range of temperature differences and characteristic lengths.

#### **Discussion of the Natural Convection Heat Transfer Coefficients: (Continued)**

For the vertical plate, the values of the turbulent heat transfer coefficient are less than the laminar values for temperature differences of less than 15 °F and lengths less than approximately 2 feet. These conditions are typical on the front side of the main control board in the control room, therefore, the turbulent heat transfer coefficient is an acceptable estimation for those surfaces. For the other vertical surfaces of the electrical cabinets, the characteristic lengths are all greater than seven feet, therefore, turbulent conditions will exist for temperature differences of approximately 1 ° F or larger. Therefore, the application of the turbulent natural convection heat transfer coefficient on the vertical surfaces of the electrical cabinets is an appropriate estimation.

**Table C-3: Natural Convection Heat Transfer Coefficient Evaluations**

$T_1$ : 95 (°F)  
 Pressure: 14.7 (psia)  
 Length, x: 0.5 (ft)

$T_2$ (°F)	$\Delta T$ (°F)	$\rho_{avg}$ (lb <sub>m</sub> /ft <sup>3</sup> )	$\mu_{avg}$ (lb <sub>m</sub> /ft-h)	$C_{p,avg}$ (Btu/lb <sub>m</sub> -°F)	$k_{avg}$ (Btu/h-ft-°F)	$\beta_{avg}$ (°R <sup>-1</sup> )	Pr	$Gr_H$	Ra	$h_{horiz,1}$ (Btu/hr-°F-ft <sup>2</sup> )	$h_{horiz,2}$ (Btu/hr-°F-ft <sup>2</sup> )	$h_{vert,1}$ (Btu/hr-°F-ft <sup>2</sup> )	$h_{vert,2}$ (Btu/hr-°F-ft <sup>2</sup> )
96	1	0.0715	0.0456	0.2406	0.0156	0.0018	0.7	2.30E+05	1.63E+05	0.220	0.321	0.190	0.345
100	5	0.0712	0.0458	0.2406	0.0156	0.0018	0.7	1.13E+06	8.00E+05	0.376	0.480	0.325	0.516
110	15	0.0706	0.0461	0.2406	0.0157	0.0018	0.7	3.27E+06	2.30E+06	0.543	0.632	0.469	0.679
120	25	0.0700	0.0464	0.2407	0.0158	0.0018	0.7	5.23E+06	3.68E+06	0.643	0.718	0.556	0.771
130	35	0.0694	0.0467	0.2407	0.0160	0.0017	0.7	7.03E+06	4.95E+06	0.720	0.781	0.622	0.839
140	45	0.0688	0.0470	0.2407	0.0161	0.0017	0.7	8.69E+06	6.12E+06	0.783	0.832	0.676	0.893
150	55	0.0682	0.0473	0.2407	0.0162	0.0017	0.7	1.02E+07	7.18E+06	0.837	0.874	0.723	0.939
160	65	0.0676	0.0477	0.2408	0.0163	0.0017	0.7	1.16E+07	8.16E+06	0.885	0.912	0.764	0.979
170	75	0.0670	0.0480	0.2408	0.0164	0.0017	0.7	1.29E+07	9.05E+06	0.928	0.945	0.801	1.015
180	85	0.0665	0.0483	0.2408	0.0166	0.0017	0.7	1.41E+07	9.87E+06	0.967	0.975	0.835	1.047

$T_1$ : 95 (°F)  
 Pressure: 14.7 (psia)  
 Length, x: 1 (ft)

$T_2$ (°F)	$\Delta T$ (°F)	$\rho_{avg}$ (lb <sub>m</sub> /ft <sup>3</sup> )	$\mu_{avg}$ (lb <sub>m</sub> /ft-h)	$C_{p,avg}$ (Btu/lb <sub>m</sub> -°F)	$k_{avg}$ (Btu/h-ft-°F)	$\beta_{avg}$ (°R <sup>-1</sup> )	Pr	$Gr_H$	Ra	$h_{horiz,1}$ (Btu/hr-°F-ft <sup>2</sup> )	$h_{horiz,2}$ (Btu/hr-°F-ft <sup>2</sup> )	$h_{vert,1}$ (Btu/hr-°F-ft <sup>2</sup> )	$h_{vert,2}$ (Btu/hr-°F-ft <sup>2</sup> )
96	1	0.0715	0.0456	0.2406	0.0156	0.0018	0.7	1.84E+06	1.30E+06	0.220	0.270	0.190	0.290
100	5	0.0712	0.0458	0.2406	0.0156	0.0018	0.7	9.07E+06	6.40E+06	0.376	0.404	0.325	0.434
110	15	0.0706	0.0461	0.2406	0.0157	0.0018	0.7	2.61E+07	1.84E+07	0.543	0.531	0.469	0.571
120	25	0.0700	0.0464	0.2407	0.0158	0.0018	0.7	4.18E+07	2.95E+07	0.643	0.604	0.556	0.648
130	35	0.0694	0.0467	0.2407	0.0160	0.0017	0.7	5.63E+07	3.96E+07	0.720	0.657	0.622	0.705
140	45	0.0688	0.0470	0.2407	0.0161	0.0017	0.7	6.95E+07	4.89E+07	0.783	0.699	0.676	0.751
150	55	0.0682	0.0473	0.2407	0.0162	0.0017	0.7	8.17E+07	5.75E+07	0.837	0.735	0.723	0.790
160	65	0.0676	0.0477	0.2408	0.0163	0.0017	0.7	9.29E+07	6.53E+07	0.885	0.767	0.764	0.823
170	75	0.0670	0.0480	0.2408	0.0164	0.0017	0.7	1.03E+08	7.24E+07	0.928	0.795	0.801	0.853
180	85	0.0665	0.0483	0.2408	0.0166	0.0017	0.7	1.12E+08	7.90E+07	0.967	0.820	0.835	0.881

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Table C-3 (Continued): Natural Convection Heat Transfer Coefficient Evaluations

$T_1$ : 95 (°F)  
 Pressure: 14.7 (psia)  
 Length, x: 2 (ft)

$T_2$ (°F)	$\Delta T$ (°F)	$\rho_{avg}$ (lb <sub>m</sub> /ft <sup>3</sup> )	$\mu_{avg}$ (lb <sub>m</sub> /ft-h)	$c_{p,avg}$ (Btu/lb <sub>m</sub> -°F)	$k_{avg}$ (Btu/h-ft-°F)	$\beta_{avg}$ (°R <sup>-1</sup> )	Pr	$Gr_H$	Ra	$h_{horiz,t}$ (Btu/hr-°F-ft <sup>2</sup> )	$h_{horiz,l}$ (Btu/hr-°F-ft <sup>2</sup> )	$h_{vert,t}$ (Btu/hr-°F-ft <sup>2</sup> )	$h_{vert,l}$ (Btu/hr-°F-ft <sup>2</sup> )
96	1	0.0715	0.0456	0.2406	0.0156	0.0018	0.7	1.47E+07	1.04E+07	0.220	0.227	0.190	0.244
100	5	0.0712	0.0458	0.2406	0.0156	0.0018	0.7	7.25E+07	5.12E+07	0.376	0.340	0.325	0.365
110	15	0.0706	0.0461	0.2406	0.0157	0.0018	0.7	2.09E+08	1.47E+08	0.543	0.447	0.469	0.480
120	25	0.0700	0.0464	0.2407	0.0158	0.0018	0.7	3.35E+08	2.36E+08	0.643	0.508	0.556	0.545
130	35	0.0694	0.0467	0.2407	0.0160	0.0017	0.7	4.50E+08	3.17E+08	0.720	0.552	0.622	0.593
140	45	0.0688	0.0470	0.2407	0.0161	0.0017	0.7	5.56E+08	3.91E+08	0.783	0.588	0.676	0.632
150	55	0.0682	0.0473	0.2407	0.0162	0.0017	0.7	6.54E+08	4.60E+08	0.837	0.618	0.723	0.664
160	65	0.0676	0.0477	0.2408	0.0163	0.0017	0.7	7.43E+08	5.22E+08	0.885	0.645	0.764	0.692
170	75	0.0670	0.0480	0.2408	0.0164	0.0017	0.7	8.25E+08	5.79E+08	0.928	0.668	0.801	0.718
180	85	0.0665	0.0483	0.2408	0.0166	0.0017	0.7	8.99E+08	6.32E+08	0.967	0.689	0.835	0.740

$T_1$ : 95 (°F)  
 Pressure: 14.7 (psia)  
 Length, x: 7 (ft)

$T_2$ (°F)	$\Delta T$ (°F)	$\rho_{avg}$ (lb <sub>m</sub> /ft <sup>3</sup> )	$\mu_{avg}$ (lb <sub>m</sub> /ft-h)	$c_{p,avg}$ (Btu/lb <sub>m</sub> -°F)	$k_{avg}$ (Btu/h-ft-°F)	$\beta_{avg}$ (°R <sup>-1</sup> )	Pr	$Gr_H$	Ra	$h_{horiz,t}$ (Btu/hr-°F-ft <sup>2</sup> )	$h_{horiz,l}$ (Btu/hr-°F-ft <sup>2</sup> )	$h_{vert,t}$ (Btu/hr-°F-ft <sup>2</sup> )	$h_{vert,l}$ (Btu/hr-°F-ft <sup>2</sup> )
96	1	0.0715	0.0456	0.2406	0.0156	0.0018	0.7	6.32E+08	4.46E+08	0.220	0.166	0.190	0.178
100	5	0.0712	0.0458	0.2406	0.0156	0.0018	0.7	3.11E+09	2.19E+09	0.376	0.248	0.325	0.267
110	15	0.0706	0.0461	0.2406	0.0157	0.0018	0.7	8.96E+09	6.32E+09	0.543	0.327	0.469	0.351
120	25	0.0700	0.0464	0.2407	0.0153	0.0018	0.7	1.43E+10	1.01E+10	0.643	0.371	0.556	0.399
130	35	0.0694	0.0467	0.2407	0.0160	0.0017	0.7	1.93E+10	1.36E+10	0.720	0.404	0.622	0.434
140	45	0.0688	0.0470	0.2407	0.0161	0.0017	0.7	2.38E+10	1.68E+10	0.783	0.430	0.676	0.462
150	55	0.0682	0.0473	0.2407	0.0162	0.0017	0.7	2.80E+10	1.97E+10	0.837	0.452	0.723	0.486
160	65	0.0676	0.0477	0.2408	0.0163	0.0017	0.7	3.18E+10	2.24E+10	0.885	0.471	0.764	0.506
170	75	0.0670	0.0480	0.2408	0.0164	0.0017	0.7	3.54E+10	2.48E+10	0.928	0.488	0.801	0.525
180	85	0.0665	0.0483	0.2408	0.0166	0.0017	0.7	3.86E+10	2.71E+10	0.967	0.504	0.835	0.541

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Table C-4: Formulas Used to Generate Table C-3

	A	B	C	D	E	F	G	H	I	J
1										
2										
3	T <sub>1</sub> :		95	(°F)						
4	Pressure:		14.7	(psia)						
5	Length, x:		0.5	(ft)						
6										
7	T <sub>2</sub>	ΔT	ρ <sub>avg</sub>	μ <sub>avg</sub>	C <sub>p,avg</sub>	k <sub>avg</sub>	β <sub>avg</sub>	Pr	Gr <sub>H</sub>	Ra
8	(°F)	(°F)	(lb <sub>m</sub> /ft <sup>3</sup> )	(lb <sub>m</sub> /ft-h)	(Btu/lb <sub>m</sub> -°F)	(Btu/h-ft-°F)	(°R <sup>-1</sup> )			
9	96	=ABS(A9-\$C\$3)	0.0714858	0.0456319	0.240584444	0.01555808444	0.00180125	=(E9*D9)/F9	=(g()*G9*(A9-\$C\$3)*\$C\$5^3)/((D9/C9)^2)	=H9*I9
10	100	=ABS(A10-\$C\$3)	0.0712292	0.0457585	0.240595555	0.01560559555	0.00179478	=(E10*D10)/F10	=(g()*G10*(A10-\$C\$3)*\$C\$5^3)/((D10/C10)^2)	=H10*I10
11	110	=ABS(A11-\$C\$3)	0.0705957	0.0460750	0.240623333	0.01572437333	0.00177882	=(E11*D11)/F11	=(g()*G11*(A11-\$C\$3)*\$C\$5^3)/((D11/C11)^2)	=H11*I11
12	120	=ABS(A12-\$C\$3)	0.0699734	0.0463914	0.240651111	0.01584315111	0.00176313	=(E12*D12)/F12	=(g()*G12*(A12-\$C\$3)*\$C\$5^3)/((D12/C12)^2)	=H12*I12
13	130	=ABS(A13-\$C\$3)	0.0693619	0.0467079	0.240678888	0.01596192888	0.00174773	=(E13*D13)/F13	=(g()*G13*(A13-\$C\$3)*\$C\$5^3)/((D13/C13)^2)	=H13*I13
14	140	=ABS(A14-\$C\$3)	0.0687610	0.0470243	0.240706666	0.01608070666	0.00173259	=(E14*D14)/F14	=(g()*G14*(A14-\$C\$3)*\$C\$5^3)/((D14/C14)^2)	=H14*I14
15	150	=ABS(A15-\$C\$3)	0.0681705	0.0473407	0.240734444	0.01619948444	0.00171771	=(E15*D15)/F15	=(g()*G15*(A15-\$C\$3)*\$C\$5^3)/((D15/C15)^2)	=H15*I15
16	160	=ABS(A16-\$C\$3)	0.0675900	0.0476572	0.240762222	0.01631826222	0.00170308	=(E16*D16)/F16	=(g()*G16*(A16-\$C\$3)*\$C\$5^3)/((D16/C16)^2)	=H16*I16
17	170	=ABS(A17-\$C\$3)	0.0670193	0.0479736	0.24079	0.01643704	0.00168870	=(E17*D17)/F17	=(g()*G17*(A17-\$C\$3)*\$C\$5^3)/((D17/C17)^2)	=H17*I17
18	180	=ABS(A18-\$C\$3)	0.0664581	0.0482901	0.240817777	0.01655581777	0.00167456	=(E18*D18)/F18	=(g()*G18*(A18-\$C\$3)*\$C\$5^3)/((D18/C18)^2)	=H18*I18

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Table C-4: Formulas Used to Generate Table C-3

	K	L	M	N
1				
2				
3				
4				
5				
6				
7	$h_{\text{horiz},i}$	$h_{\text{horiz},i}$	$h_{\text{vert},i}$	$h_{\text{vert},i}$
8	(Btu/hr-°F-ft <sup>2</sup> )	(Btu/hr-°F-ft <sup>2</sup> )	(Btu/hr-°F-ft <sup>2</sup> )	(Btu/hr-°F-ft <sup>2</sup> )
9	$=0.22*(A9-\$C\$3)^{(1/3)}$	$=0.27*(\text{ABS}(A9-\$C\$3)/\$C\$5)^{0.25}$	$=0.19*(A9-\$C\$3)^{(1/3)}$	$=0.29*((A9-\$C\$3)/\$C\$5)^{0.25}$
10	$=0.22*(A10-\$C\$3)^{(1/3)}$	$=0.27*(\text{ABS}(A10-\$C\$3)/\$C\$5)^{0.25}$	$=0.19*(A10-\$C\$3)^{(1/3)}$	$=0.29*((A10-\$C\$3)/\$C\$5)^{0.25}$
11	$=0.22*(A11-\$C\$3)^{(1/3)}$	$=0.27*(\text{ABS}(A11-\$C\$3)/\$C\$5)^{0.25}$	$=0.19*(A11-\$C\$3)^{(1/3)}$	$=0.29*((A11-\$C\$3)/\$C\$5)^{0.25}$
12	$=0.22*(A12-\$C\$3)^{(1/3)}$	$=0.27*(\text{ABS}(A12-\$C\$3)/\$C\$5)^{0.25}$	$=0.19*(A12-\$C\$3)^{(1/3)}$	$=0.29*((A12-\$C\$3)/\$C\$5)^{0.25}$
13	$=0.22*(A13-\$C\$3)^{(1/3)}$	$=0.27*(\text{ABS}(A13-\$C\$3)/\$C\$5)^{0.25}$	$=0.19*(A13-\$C\$3)^{(1/3)}$	$=0.29*((A13-\$C\$3)/\$C\$5)^{0.25}$
14	$=0.22*(A14-\$C\$3)^{(1/3)}$	$=0.27*(\text{ABS}(A14-\$C\$3)/\$C\$5)^{0.25}$	$=0.19*(A14-\$C\$3)^{(1/3)}$	$=0.29*((A14-\$C\$3)/\$C\$5)^{0.25}$
15	$=0.22*(A15-\$C\$3)^{(1/3)}$	$=0.27*(\text{ABS}(A15-\$C\$3)/\$C\$5)^{0.25}$	$=0.19*(A15-\$C\$3)^{(1/3)}$	$=0.29*((A15-\$C\$3)/\$C\$5)^{0.25}$
16	$=0.22*(A16-\$C\$3)^{(1/3)}$	$=0.27*(\text{ABS}(A16-\$C\$3)/\$C\$5)^{0.25}$	$=0.19*(A16-\$C\$3)^{(1/3)}$	$=0.29*((A16-\$C\$3)/\$C\$5)^{0.25}$
17	$=0.22*(A17-\$C\$3)^{(1/3)}$	$=0.27*(\text{ABS}(A17-\$C\$3)/\$C\$5)^{0.25}$	$=0.19*(A17-\$C\$3)^{(1/3)}$	$=0.29*((A17-\$C\$3)/\$C\$5)^{0.25}$
18	$=0.22*(A18-\$C\$3)^{(1/3)}$	$=0.27*(\text{ABS}(A18-\$C\$3)/\$C\$5)^{0.25}$	$=0.19*(A18-\$C\$3)^{(1/3)}$	$=0.29*((A18-\$C\$3)/\$C\$5)^{0.25}$

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## Attachment D

### Electrical Cabinet Ventilation Heat Transfer Coefficient Calculations

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**Table D-1: Unit 1 AEER Cabinet Ventilation Heat Transfer Coefficient Evaluation**

**Cabinet Geometry**

Net Cabinet Air Volume:	3955 (ft <sup>3</sup> )
Ventilation Opening Area:	67 (ft <sup>2</sup> )
Net Vertical Outer Shell S.A.:	3804.52 (ft <sup>2</sup> )
Net Horizontal Outer Shell S.A.:	605.93 (ft <sup>2</sup> )
Shell Thickness:	0.009967 (ft)

**Neutral Pressure Level Data**

Discharge Coefficient:	0.5
$\Delta h_{NPL}$ :	3.32 (ft)

**Steady-State Heat Balance**

**Vertical Surface**

Ambient Side Sur. Temperature, $T_2$ :	87.8931 (°F)
Cabinet Side Sur. Temperature, $T_1$ :	87.8954 (°F)
$R_i$ (Eq. 14):	7.57E-04 (°F-hr/Btu)
$q_i$ (Eq. 13):	23768.14 (Btu/hr)
$q_i$ (Eq. 16):	23768.14 (Btu/hr)
$q_i$ (Eq. 16) - $q_i$ (Eq. 13):	-4.40E-10 (Btu/hr)

**Horizontal Surface**

Ambient Side Sur. Temperature:	87.7263 (°F)
Cabinet Side Sur. Temperature:	87.7288 (°F)
$R_i$ (Eq. 14):	4.35E-03 (°F-hr/Btu)
$q_i$ (Eq. 13):	4139.86 (Btu/hr)
$q_i$ (Eq. 16):	4139.86 (Btu/hr)
$q_i$ (Eq. 16) - $q_i$ (Eq. 13):	-9.82E-11 (Btu/hr)
$q_o$ (Eq. 12):	27908.00 (Btu/hr)

**Temperatures, Heat Loads, and Ambient Conditions**

Total Room Heat Load:	160541 (Btu/hr)
Percent Attributed to Cabinets:	80%
Total Cabinet Heat Load:	128432.8 (Btu/hr)
Total Ambient Heat Load:	32108.2 (Btu/hr)
Ambient Temperature:	77 (°F)
Ambient Pressure:	14.7 (psia)
Ambient Air Density:	0.0740 (lb <sub>m</sub> /ft <sup>3</sup> )
Desired Cabinet Air Temperature:	95 (°F)
Cabinet Air Density:	0.0716 (lb <sub>m</sub> /ft <sup>3</sup> )

**Ventilation Heat Transfer**

$q_{vent}$ (Eq. 11):	100524.80 (Btu/hr)
$h_{vent}$ (Eq. 18):	82.95 (Btu/hr-°F-ft <sup>2</sup> )
$h_{vent}$ (Eq. 23):	82.95 (Btu/hr-°F-ft <sup>2</sup> )
$h_{vent}$ (Eq. 23) - $h_{vent}$ (Eq. 18):	-7.67E-13 (Btu/hr-°F-ft <sup>2</sup> )

**Comparison Data**

$Q_{cab}$ (Eq. 21):	5319.16 (cfm)
$Q_{room}$ (Drawing M-96, Sheet 3):	10400 (cfm)
$Q_{cab}/Q_{room}$ :	0.51
$q_{vent}/q_{cab}$ :	0.78

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**Table D-2: Unit 1 AEER Cabinet Ventilation Heat Transfer Coefficient as a Function of  $\Delta T$**

$T_{cab}$ (°F)	$\Delta T$ (°F)	$\rho_{cab}$ (lb <sub>m</sub> /ft <sup>3</sup> )	$\rho_{avg}$ (lb <sub>m</sub> /ft <sup>3</sup> )	$\Delta \rho$ (lb <sub>m</sub> /ft <sup>3</sup> )	$c_{p,avg}$ (Btu/lb <sub>m</sub> -°F)	$h_{vent}$ (Btu/h-ft <sup>2</sup> -°F)	$Q$ (ft <sup>3</sup> /hr)
80	3	0.0735	0.0737	0.000411	0.2405	34.79	132091
85	8	0.0729	0.0734	0.001086	0.2405	56.30	214711
90	13	0.0722	0.0731	0.001749	0.2405	71.13	272456
95	18	0.0716	0.0728	0.002400	0.2405	82.95	319149
100	23	0.0709	0.0724	0.003039	0.2405	92.94	359148
105	28	0.0703	0.0721	0.003667	0.2406	101.66	394509
110	33	0.0697	0.0718	0.004284	0.2406	109.41	426403
115	38	0.0691	0.0715	0.004890	0.2406	116.41	455573
120	43	0.0685	0.0712	0.005486	0.2406	122.79	482524
125	48	0.0679	0.0709	0.006071	0.2406	128.65	507622
130	53	0.0673	0.0706	0.006647	0.2406	134.07	531139
135	58	0.0667	0.0703	0.007213	0.2406	139.11	553288
140	63	0.0662	0.0701	0.007769	0.2407	143.82	574234
145	68	0.0656	0.0698	0.008316	0.2407	148.22	594115
150	73	0.0651	0.0695	0.008855	0.2407	152.36	613040

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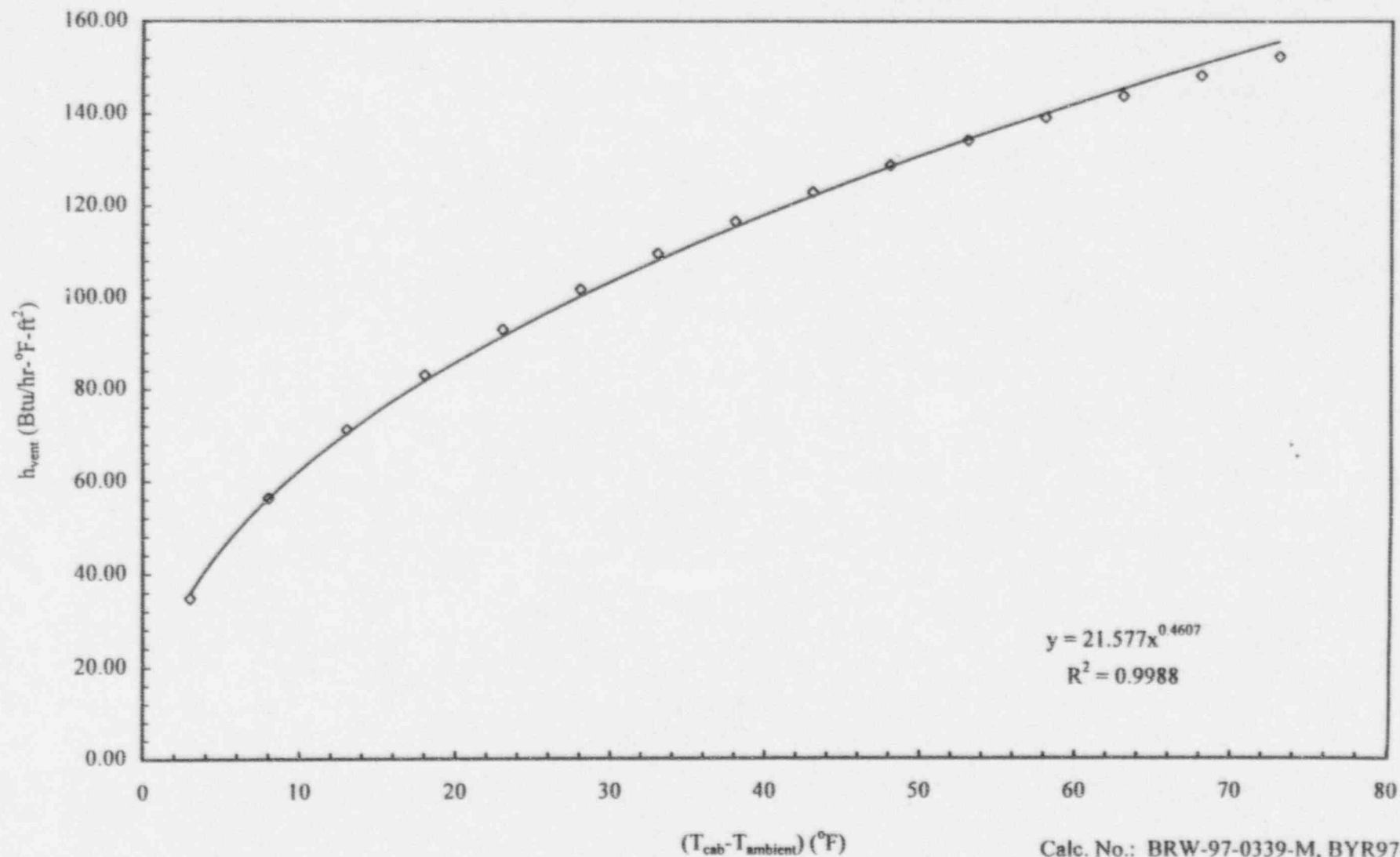
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**Figure D-1: Unit 1 AEER Cabinet Ventilation Heat Transfer Coefficient as a Function of the Temperature Difference Between the Cabinet and Ambient Air**



**Table D-3: Unit 2 AEER Cabinet Ventilation Heat Transfer Coefficient Evaluation**

**Cabinet Geometry**

Net Cabinet Air Volume:	3759 (ft <sup>3</sup> )
Ventilation Opening Area:	64 (ft <sup>2</sup> )
Net Vertical Outer Shell S.A.:	3779.55 (ft <sup>2</sup> )
Net Horizontal Outer Shell S.A.:	575.73 (ft <sup>2</sup> )
Shell Thickness:	0.009967 (ft)

**Neutral Pressure Level Data**

Discharge Coefficient:	0.5
$\Delta h_{NPL}$ :	2.42 (ft)

**Steady-State Heat Balance**

**Vertical Surface**

Ambient Side Sur. Temperature, $T_2$ :	87.8931 (°F)
Cabinet Side Sur. Temperature, $T_1$ :	87.8954 (°F)
$R_i$ (Eq. 14):	7.62E-04 (°F-hr/Btu)
$q_i$ (Eq. 13):	23612.13 (Btu/hr)
$q_i$ (Eq. 16):	23612.13 (Btu/hr)
$q_i$ (Eq. 16) - $q_i$ (Eq. 13):	-4.66E-10 (Btu/hr)

**Horizontal Surface**

Ambient Side Sur. Temperature:	87.7263 (°F)
Cabinet Side Sur. Temperature:	87.7288 (°F)
$R_i$ (Eq. 14):	4.58E-03 (°F-hr/Btu)
$q_i$ (Eq. 13):	3933.49 (Btu/hr)
$q_i$ (Eq. 16):	3933.49 (Btu/hr)
$q_i$ (Eq. 16) - $q_i$ (Eq. 13):	-9.41E-11 (Btu/hr)
$q_o$ (Eq. 12):	27545.62 (Btu/hr)

**Temperatures, Heat Loads, and Ambient Conditions**

Total Room Heat Load:	136411 (Btu/hr)
Percent Attributed to Cabinets:	80%
Total Cabinet Heat Load:	109128.8 (Btu/hr)
Total Ambient Heat Load:	27282.2 (Btu/hr)
Ambient Temperature:	77 (°F)
Ambient Pressure:	14.7 (psia)
Ambient Air Density:	0.0740 (lb <sub>m</sub> /ft <sup>3</sup> )
Desired Cabinet Air Temperature:	95 (°F)
Cabinet Air Density:	0.0716 (lb <sub>m</sub> /ft <sup>3</sup> )

**Ventilation Heat Transfer Data**

$q_{vent}$ (Eq. 11):	81583.18 (Btu/hr)
$h_{vent}$ (Eq. 18):	70.85 (Btu/hr-°F-ft <sup>2</sup> )
$h_{vent}$ (Eq. 23):	70.85 (Btu/hr-°F-ft <sup>2</sup> )
$h_{vent}$ (Eq. 23) - $h_{vent}$ (Eq. 18):	3.109E-05 (Btu/hr-°F-ft <sup>2</sup> )

**Comparison Data**

$Q_{cab}$ (Eq. 21):	4316.88 (cfm)
$Q_{room}$ (Drawing M-96, Sheet 4):	10100 (cfm)
$Q_{cab}/Q_{room}$ :	0.43
$q_{vent}/q_{cab}$ :	0.75

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**Table D-4: Unit 2 AEER Cabinet Ventilation Heat Transfer Coefficient as a Function of  $\Delta T$**

$T_{cab}$ (°F)	$\Delta T$ (°F)	$\rho_{cab}$ (lb <sub>m</sub> /ft <sup>3</sup> )	$\rho_{avg}$ (lb <sub>m</sub> /ft <sup>3</sup> )	$\Delta\rho$ (lb <sub>m</sub> /ft <sup>3</sup> )	$c_{p,avg}$ (Btu/lb <sub>m</sub> -°F)	$h_{vent}$ (Btu/h-ft <sup>2</sup> -°F)	$Q$ (ft <sup>3</sup> /hr)
80	3	0.0735	0.0737	0.000411	0.2405	29.72	107201
85	8	0.0729	0.0734	0.001086	0.2405	48.09	174253
90	13	0.0722	0.0731	0.001749	0.2405	60.75	221118
95	18	0.0716	0.0728	0.002400	0.2405	70.85	259013
100	23	0.0709	0.0724	0.003039	0.2405	79.39	291475
105	28	0.0703	0.0721	0.003667	0.2406	86.83	320173
110	33	0.0697	0.0718	0.004284	0.2406	93.45	346057
115	38	0.0691	0.0715	0.004890	0.2406	99.43	369730
120	43	0.0685	0.0712	0.005486	0.2406	104.88	391603
125	48	0.0679	0.0709	0.006071	0.2406	109.89	411972
130	53	0.0673	0.0706	0.006647	0.2406	114.52	431058
135	58	0.0667	0.0703	0.007213	0.2406	118.82	449033
140	63	0.0662	0.0701	0.007769	0.2407	122.84	466033
145	68	0.0656	0.0698	0.008316	0.2407	126.61	482168
150	73	0.0651	0.0695	0.008855	0.2407	130.14	497527

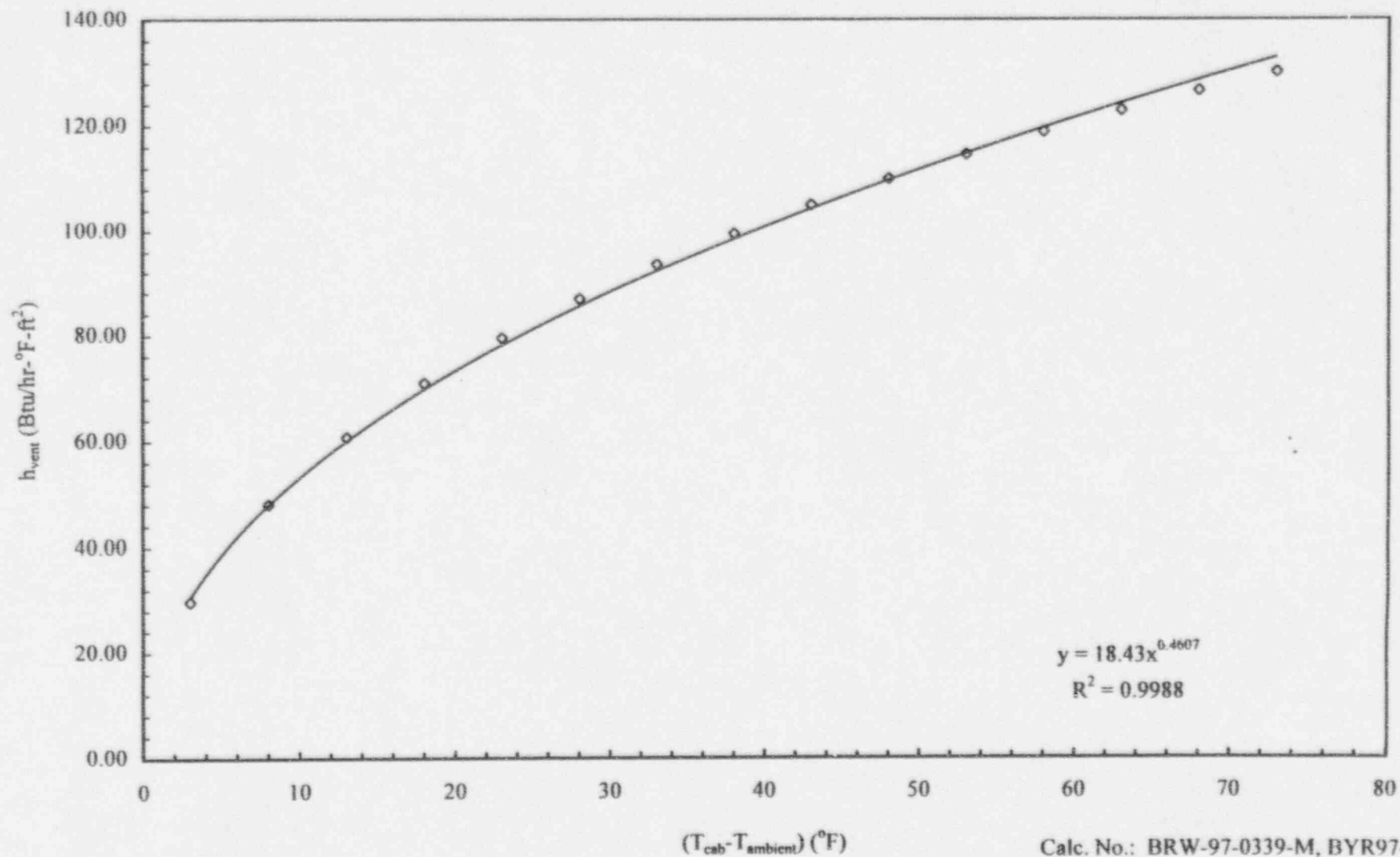
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Figure D-2: Unit 2 AEER Cabinet Ventilation Heat Transfer Coefficient as a Function of the Temperature Difference Between the Cabinet and Ambient Air



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**Table D-5: Control Room Cabinet Ventilation Heat Transfer Coefficient Evaluation**

<b>Cabinet Geometry</b>		<b>Temperatures, Heat Loads, and Ambient Conditions</b>	
Net Cabinet Air Volume:	4716 (ft <sup>3</sup> )	Total Room Heat Load:	224848 (Btu/hr)
Ventilation Opening Area:	14 (ft <sup>2</sup> )	Percent Attributed to Cabinets:	50%
Net 1/4" Front Plate S.A.:	1253.88 (ft <sup>2</sup> )	Total Cabinet Heat Load:	112424 (Btu/hr)
1/4" Front Plate Thickness:	0.020833 (ft)	Total Ambient Heat Load:	112424 (Btu/hr)
Rear Door and Access Panel S.A.:	1558.94 (ft <sup>2</sup> )	Ambient Temperature:	77 (°F)
Rear Door and Access Panel Thickness:	0.008717 (ft)	Ambient Pressure:	14.7 (psia)
Louvered Access Plate S.A.:	136.00 (ft <sup>2</sup> )	Ambient Air Density:	0.073950146 (lb <sub>m</sub> /ft <sup>3</sup> )
Louvered Access Plate Thickness:	0.008717 (ft)	Desired Cabinet Air Temperature:	95 (°F)
Instr. (Representative) S.A.:	370.96 (ft <sup>2</sup> )	Cabinet Air Density:	0.071550336 (lb <sub>m</sub> /ft <sup>3</sup> )
Instr. (Representative) Thickness:	0.009967 (ft)		
Top Plate S.A.:	663.26 (ft <sup>2</sup> )	<b>Ventilation Heat Transfer Data</b>	
Top Plate Thickness:	0.011208 (ft)	$q_{vent}$ (Eq. 11):	86925.39 (Btu/hr)
Top Access Cover S.A.:	33.44 (ft <sup>2</sup> )	$h_{vent}$ (Eq. 18):	341.60 (Btu/hr-°F-ft <sup>2</sup> )
Top Access Cover Thickness:	0.009967 (ft)	$h_{vent}$ (Eq. 23):	341.60 (Btu/hr-°F-ft <sup>2</sup> )
Total Area of Ventilation Openings:	14.14 (ft <sup>2</sup> )	$h_{vent}$ (Eq. 23) - $h_{vent}$ (Eq. 18):	-2.2037E-09 (Btu/hr-°F-ft <sup>2</sup> )
Unquantified Mass S.A.:	2425.13 (ft <sup>2</sup> )	<b>Comparison Data</b>	
Unquantified Mass Rep. Thickness:	0.020833 (ft)	$Q_{cab}$ (Eq. 21):	4599.56 (cfm)
<b>Neutral Pressure Level Data</b>		$Q_{room}$ (Drawing M-96, Sheets 3 & 4):	21000 (cfm)
Discharge Coefficient:	0.5	$Q_{cab}/Q_{room}$ :	0.22
$\Delta h_{NPL}$ :	56.32 (ft)	$q_{vent}/q_{cab}$ :	0.77
<b>Shell Transmission Resistances:</b>		<b>Total Shell Heat Transfer Rate, <math>q_s</math> (Eq. 12):</b>	
<b>1/4" Front Plate</b>		<b>Louvered Access Plates:</b>	
Amb. Side Sur. Temperature, $T_2$ :	87.8916 (°F)	Amb. Side Sur. Temperature, $T_2$ :	87.8933 (°F)
Cab. Side Sur. Temperature, $T_1$ :	87.8964 (°F)	Cab. Side Sur. Temperature, $T_1$ :	87.8953 (°F)
$R_i$ (Eq. 14):	2.30E-03 (°F-hr/Btu)	$R_i$ (Eq. 14):	2.12E-02 (°F-hr/Btu)
$q_i$ (Eq. 13):	7832.11 (Btu/hr)	$q_i$ (Eq. 13):	849.65 (Btu/hr)
$q_i$ (Eq. 16):	7832.11 (Btu/hr)	$q_i$ (Eq. 16):	849.65 (Btu/hr)
$q_i$ (Eq. 16) - $q_i$ (Eq. 13):	-1.46E-10 (Btu/hr)	$q_i$ (Eq. 16) - $q_i$ (Eq. 13):	-1.59E-11 (Btu/hr)
<b>Rear Panels &amp; Doors</b>		<b>Instrumentation (Representative):</b>	
Amb. Side Sur. Temperature, $T_2$ :	87.8933 (°F)	Amb. Side Sur. Temperature, $T_2$ :	87.8931 (°F)
Cab. Side Sur. Temperature, $T_1$ :	87.8953 (°F)	Cab. Side Sur. Temperature, $T_1$ :	87.8954 (°F)
$R_i$ (Eq. 14):	1.85E-03 (°F-hr/Btu)	$R_i$ (Eq. 14):	7.77E-03 (°F-hr/Btu)
$q_i$ (Eq. 13):	9739.42 (Btu/hr)	$q_i$ (Eq. 13):	2317.52 (Btu/hr)
$q_i$ (Eq. 16):	9739.42 (Btu/hr)	$q_i$ (Eq. 16):	2317.52 (Btu/hr)
$q_i$ (Eq. 16) - $q_i$ (Eq. 13):	-1.96E-10 (Btu/hr)	$q_i$ (Eq. 16) - $q_i$ (Eq. 13):	-4.55E-11 (Btu/hr)
		<b>Top Plate:</b>	
		Amb. Side Sur. Temperature, $T_2$ :	87.7261 (°F)
		Cab. Side Sur. Temperature, $T_1$ :	87.7289 (°F)
		$R_i$ (Eq. 14):	3.97E-03 (°F-hr/Btu)
		$q_i$ (Eq. 13):	4531.43 (Btu/hr)
		$q_i$ (Eq. 16):	4531.43 (Btu/hr)
		$q_i$ (Eq. 16) - $q_i$ (Eq. 13):	-6.08E-09 (Btu/hr)
		<b>Top Access Covers:</b>	
		Amb. Side Sur. Temperature, $T_2$ :	87.7263 (°F)
		Cab. Side Sur. Temperature, $T_1$ :	87.7288 (°F)
		$R_i$ (Eq. 14):	7.88E-02 (°F-hr/Btu)
		$q_i$ (Eq. 13):	228.47 (Btu/hr)
		$q_i$ (Eq. 16):	228.47 (Btu/hr)
		$q_i$ (Eq. 16) - $q_i$ (Eq. 13):	-5.49E-12 (Btu/hr)

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Table D-6: Control Room Cabinet Ventilation Heat Transfer Coefficient as a Function of  $\Delta T$

$T_{cab}$ (°F)	$\Delta T$ (°F)	$\rho_{cab}$ (lb <sub>m</sub> /ft <sup>3</sup> )	$\rho_{avg}$ (lb <sub>m</sub> /ft <sup>3</sup> )	$\Delta\rho$ (lb <sub>m</sub> /ft <sup>3</sup> )	$C_{p,avg}$ (Btu/lb <sub>m</sub> -°F)	$h_{vent}$ (Btu/h-ft <sup>2</sup> -°F)	$Q$ (W)
80	3	0.0735	0.0737	0.000411	0.2405	143.29	14221
85	8	0.0729	0.0734	0.001086	0.2405	231.86	185664
90	13	0.0722	0.0731	0.001749	0.2405	292.90	235597
95	18	0.0716	0.0728	0.002400	0.2405	341.60	275974
100	23	0.0709	0.0724	0.003039	0.2405	382.74	310561
105	28	0.0703	0.0721	0.003667	0.2406	418.63	341138
110	33	0.0697	0.0718	0.004284	0.2406	450.56	368718
115	38	0.0691	0.0715	0.004890	0.2406	479.38	393941
120	43	0.0685	0.0712	0.005486	0.2406	505.65	417246
125	48	0.0679	0.0709	0.006071	0.2406	529.80	438949
130	53	0.0673	0.0706	0.006647	0.2406	552.12	459285
135	58	0.0667	0.0703	0.007213	0.2406	572.88	478437
140	63	0.0662	0.0701	0.007769	0.2407	592.25	496550
145	68	0.0656	0.0698	0.008316	0.2407	610.39	513740
150	73	0.0651	0.0695	0.008855	0.2407	627.45	530106

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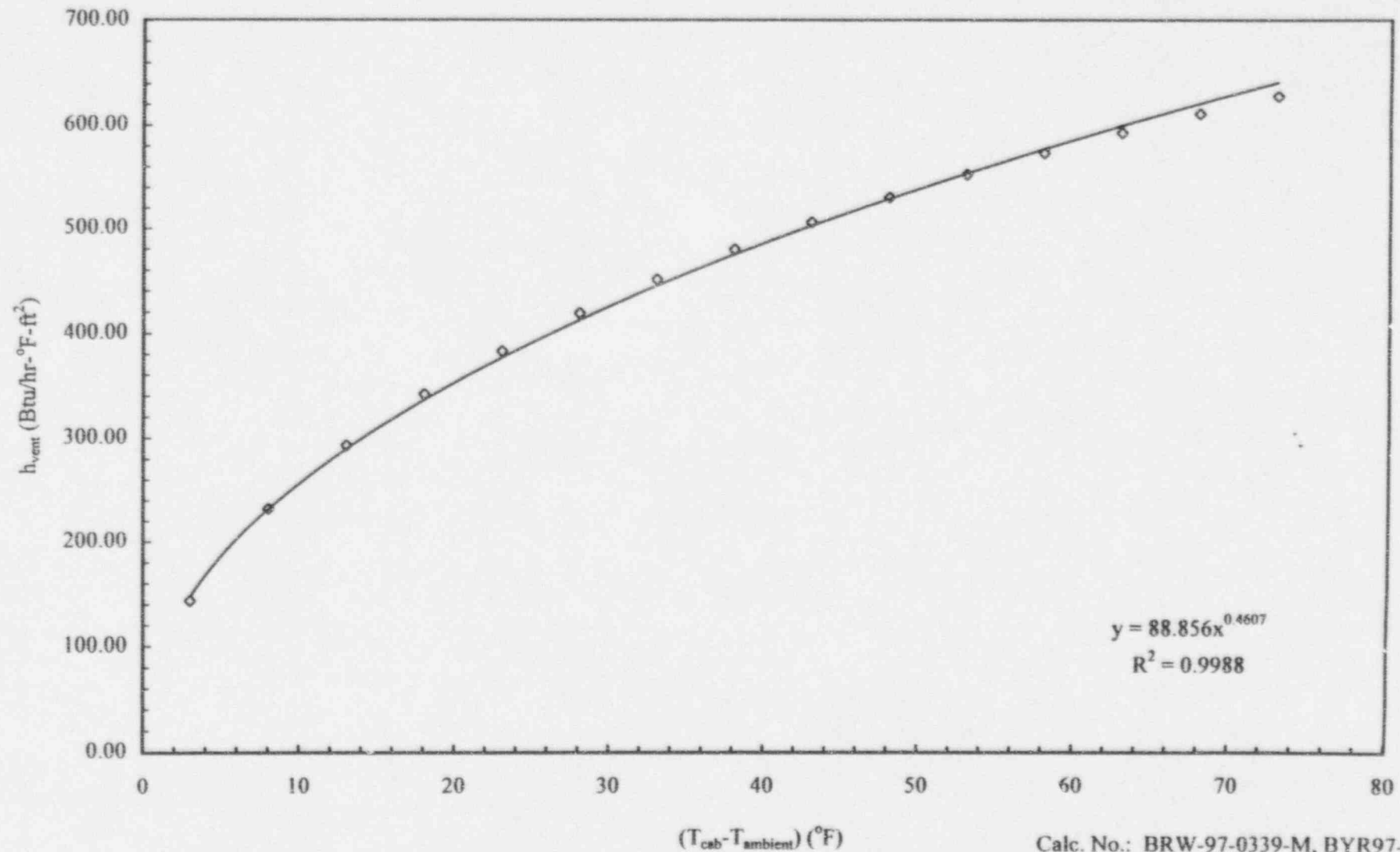
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Figure D-3: Control Room Cabinet Ventilation Heat Transfer Coefficient as a Function of the Temperature Difference Between the Cabinet and Ambient Air



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Table D-7: Formulas Used to Generate Tables D-1 and D-3

	A	B	C	D
1				
2				
3	Cabinet Geometry			
4				
5	Net Cabinet Air Volume:	3955		(ft <sup>3</sup> )
6	Ventilation Opening Area:	67		(ft <sup>2</sup> )
7	Net Vertical Outer Shell S.A.:	3804.522		(ft <sup>2</sup> )
8	Net Horizontal Outer Shell S.A.:	605.932971191406		(ft <sup>2</sup> )
9	Shell Thickness:	0.00996666666666667		(ft)
10	Neutral Pressure Level Data			
11	Discharge Coefficient:	0.5		
12	$\Delta h_{NPL}$ :	3.32108498869153		(ft)
13				
14	Steady-State Heat Balance			
15	Vertical Surface			
16	Ambient Side Sur. Temperature, $T_2$ :	87.8930862278686		(°F)
17	Cabinet Side Sur. Temperature, $T_1$ :	$=C16+C20*(C9/(ksteel()*C7))$		(°F)
18	$R_i$ (Eq. 14):	$=(1/C7)*((1/(hr(C16,I9)+hvert(C16,I9)))+(C9/ksteel()))+(1/(hrsurr(C17,I12)+hvert(C17,I12))))$		(°F-hr/Btu)
19	$q_i$ (Eq. 13):	$=(I12-I9)/C18$		(Btu/hr)
20	$q_i$ (Eq. 16):	$=(hr(C16,I9)+hvert(C16,I9))*C7*(C16-I9)$		(Btu/hr)
21	$q_i$ (Eq. 16) - $q_i$ (Eq. 13):	$=C20-C19$		(Btu/hr)
22	Horizontal Surface			
23	Ambient Side Sur. Temperature:	87.7262796534273		(°F)
24	Cabinet Side Sur. Temperature:	$=C23+C27*(C9/(ksteel()*C8))$		(°F)
25	$R_i$ (Eq. 14):	$=(1/C8)*((1/(hr(C23,I9)+hhorz(C23,I9)))+(C9/ksteel()))+(1/(hrsurr(C24,I12)+hhorz(C24,I12))))$		(°F-hr/Btu)
26	$q_i$ (Eq. 13):	$=(I12-I9)/C25$		(Btu/hr)
27	$q_i$ (Eq. 16):	$=(hr(C23,I9)+hhorz(C23,I9))*C8*(C23-I9)$		(Btu/hr)
28	$q_i$ (Eq. 16) - $q_i$ (Eq. 13):	$=C27-C26$		(Btu/hr)
29				
30	$q_o$ (Eq. 12):	$=C27+C20$		(Btu/hr)

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Table D-7: Formulas Used to Generate Tables D-1 and D-3

	E	F	I	J
1				
2				
3		Temperatures, Heat Loads, and Ambient Conditions		
4				
5		Total Room Heat Load:	160541	(Btu/hr)
6		Percent Attributed to Cabinets:	0.8	
7		Total Cabinet Heat Load:	=I6*I5	(Btu/hr)
8		Total Ambient Heat Load:	=I5-I7	(Btu/hr)
9		Ambient Temperature:	77	(°F)
10		Ambient Pressure:	14.7	(psia)
11		Ambient Air Density:	=rhoair(I9,I10)	(lb <sub>m</sub> /ft <sup>3</sup> )
12		Desired Cabinet Air Temperature:	95	(°F)
13		Cabinet Air Density:	=rhoair(I12,I10)	(lb <sub>m</sub> /ft <sup>3</sup> )
14				
15		Ventilation Heat Transfer		
16		q <sub>vent</sub> (Eq. 11):	=I7-C30	(Btu/hr)
17		h <sub>vent</sub> (Eq. 18):	=I16/(C6*(I12-I9))	(Btu/hr-°F-ft <sup>2</sup> )
18		h <sub>vent</sub> (Eq. 23):	=QNPL(C11,C6,C12,I12,I9)*((I13+I11)/2)*cpair((I12+I9)/2)/C6	(Btu/hr-°F-ft <sup>2</sup> )
19		h <sub>vent</sub> (Eq. 23) - h <sub>vent</sub> (Eq. 18):	=I18-I17	(Btu/hr-°F-ft <sup>2</sup> )
20				
21		Comparison Data		
22		Q <sub>cab</sub> (Eq. 21):	=QNPL(C11,C6,C12,I12,I9)/60	(cfm)
23		Q <sub>room</sub> (Drawing M-96, Sheet 3):	10400	(cfm)
24		Q <sub>cab</sub> /Q <sub>room</sub> :	=I22/I23	
25		q <sub>vent</sub> /q <sub>cab</sub> :	=I16/I7	
26				
27				
28				
29				
30				

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Table D-8: Formulas Used to Generate Tables D-2 and D-4

	A	B	C	D	E	F	G	H
31								
32								
33	$T_{cab}$	$\Delta T$	$\rho_{cab}$	$\rho_{avg}$	$\Delta \rho$	$C_{p,avg}$	$h_{vent}$	Q
34	(°F)	(°F)	(lb <sub>m</sub> /ft <sup>3</sup> )	(lb <sub>m</sub> /ft <sup>3</sup> )	(lb <sub>m</sub> /ft <sup>3</sup> )	(Btu/lb <sub>m</sub> ·°F)	(Btu/h·ft <sup>2</sup> ·°F)	(ft <sup>3</sup> /hr)
35	80	=ABS(A35-\$I\$9)	=rhoair(A35,\$I\$10)	=((\$I\$11+C35)/2)	=ABS(C35-\$I\$11)	=cpair(((A35+\$I\$9)/2))	=(H35*D35*F35)/\$C\$6	=QNPL(\$C\$11,\$C\$6,\$C\$12,A35,\$I\$9)
36	=A35+5	=ABS(A36-\$I\$9)	=rhoair(A36,\$I\$10)	=((\$I\$11+C36)/2)	=ABS(C36-\$I\$11)	=cpair(((A36+\$I\$9)/2))	=(H36*D36*F36)/\$C\$6	=QNPL(\$C\$11,\$C\$6,\$C\$12,A36,\$I\$9)
37	=A36+5	=ABS(A37-\$I\$9)	=rhoair(A37,\$I\$10)	=((\$I\$11+C37)/2)	=ABS(C37-\$I\$11)	=cpair(((A37+\$I\$9)/2))	=(H37*D37*F37)/\$C\$6	=QNPL(\$C\$11,\$C\$6,\$C\$12,A37,\$I\$9)
38	=A37+5	=ABS(A38-\$I\$9)	=rhoair(A38,\$I\$10)	=((\$I\$11+C38)/2)	=ABS(C38-\$I\$11)	=cpair(((A38+\$I\$9)/2))	=(H38*D38*F38)/\$C\$6	=QNPL(\$C\$11,\$C\$6,\$C\$12,A38,\$I\$9)
39	=A38+5	=ABS(A39-\$I\$9)	=rhoair(A39,\$I\$10)	=((\$I\$11+C39)/2)	=ABS(C39-\$I\$11)	=cpair(((A39+\$I\$9)/2))	=(H39*D39*F39)/\$C\$6	=QNPL(\$C\$11,\$C\$6,\$C\$12,A39,\$I\$9)
40	=A39+5	=ABS(A40-\$I\$9)	=rhoair(A40,\$I\$10)	=((\$I\$11+C40)/2)	=ABS(C40-\$I\$11)	=cpair(((A40+\$I\$9)/2))	=(H40*D40*F40)/\$C\$6	=QNPL(\$C\$11,\$C\$6,\$C\$12,A40,\$I\$9)
41	=A40+5	=ABS(A41-\$I\$9)	=rhoair(A41,\$I\$10)	=((\$I\$11+C41)/2)	=ABS(C41-\$I\$11)	=cpair(((A41+\$I\$9)/2))	=(H41*D41*F41)/\$C\$6	=QNPL(\$C\$11,\$C\$6,\$C\$12,A41,\$I\$9)
42	=A41+5	=ABS(A42-\$I\$9)	=rhoair(A42,\$I\$10)	=((\$I\$11+C42)/2)	=ABS(C42-\$I\$11)	=cpair(((A42+\$I\$9)/2))	=(H42*D42*F42)/\$C\$6	=QNPL(\$C\$11,\$C\$6,\$C\$12,A42,\$I\$9)
43	=A42+5	=ABS(A43-\$I\$9)	=rhoair(A43,\$I\$10)	=((\$I\$11+C43)/2)	=ABS(C43-\$I\$11)	=cpair(((A43+\$I\$9)/2))	=(H43*D43*F43)/\$C\$6	=QNPL(\$C\$11,\$C\$6,\$C\$12,A43,\$I\$9)
44	=A43+5	=ABS(A44-\$I\$9)	=rhoair(A44,\$I\$10)	=((\$I\$11+C44)/2)	=ABS(C44-\$I\$11)	=cpair(((A44+\$I\$9)/2))	=(H44*D44*F44)/\$C\$6	=QNPL(\$C\$11,\$C\$6,\$C\$12,A44,\$I\$9)
45	=A44+5	=ABS(A45-\$I\$9)	=rhoair(A45,\$I\$10)	=((\$I\$11+C45)/2)	=ABS(C45-\$I\$11)	=cpair(((A45+\$I\$9)/2))	=(H45*D45*F45)/\$C\$6	=QNPL(\$C\$11,\$C\$6,\$C\$12,A45,\$I\$9)
46	=A45+5	=ABS(A46-\$I\$9)	=rhoair(A46,\$I\$10)	=((\$I\$11+C46)/2)	=ABS(C46-\$I\$11)	=cpair(((A46+\$I\$9)/2))	=(H46*D46*F46)/\$C\$6	=QNPL(\$C\$11,\$C\$6,\$C\$12,A46,\$I\$9)
47	=A46+5	=ABS(A47-\$I\$9)	=rhoair(A47,\$I\$10)	=((\$I\$11+C47)/2)	=ABS(C47-\$I\$11)	=cpair(((A47+\$I\$9)/2))	=(H47*D47*F47)/\$C\$6	=QNPL(\$C\$11,\$C\$6,\$C\$12,A47,\$I\$9)
48	=A47+5	=ABS(A48-\$I\$9)	=rhoair(A48,\$I\$10)	=((\$I\$11+C48)/2)	=ABS(C48-\$I\$11)	=cpair(((A48+\$I\$9)/2))	=(H48*D48*F48)/\$C\$6	=QNPL(\$C\$11,\$C\$6,\$C\$12,A48,\$I\$9)
49	=A48+5	=ABS(A49-\$I\$9)	=rhoair(A49,\$I\$10)	=((\$I\$11+C49)/2)	=ABS(C49-\$I\$11)	=cpair(((A49+\$I\$9)/2))	=(H49*D49*F49)/\$C\$6	=QNPL(\$C\$11,\$C\$6,\$C\$12,A49,\$I\$9)

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Table D-9: Formulas Used to Generate Table D-5

	A	B	C	D	E
1	Cabinet Geometry				
2	Net Cabinet Air Volume:	4716		(ft <sup>3</sup> )	
3	Ventilation Opening Area:	14.1371669411541		(ft <sup>2</sup> )	
4	Net 1/4" Front Plate S.A.:	1253.88152992916		(ft <sup>2</sup> )	
5	1/4" Front Plate Thickness:	0.0208333333333333		(ft)	
6	Rear Door and Access Panel S.A.:	1558.94034722222		(ft <sup>2</sup> )	
7	Rear Door and Access Panel Thickness:	0.00871666666666667		(ft)	
8	Louvered Access Plate S.A.:	136		(ft <sup>2</sup> )	
9	Louvered Access Plate Thickness:	0.00871666666666667		(ft)	
10	Instr. (Representative) S.A.:	370.961354662396		(ft <sup>2</sup> )	
11	Instr. (Representative) Thickness:	0.00996666666666667		(ft)	
12	Top Plate S.A.:	663.260040457614		(ft <sup>2</sup> )	
13	Top Plate Thickness:	0.0112083333333333		(ft)	
14	Top Access Cover S.A.:	33.44		(ft <sup>2</sup> )	
15	Top Access Cover Thickness:	0.00996666666666667		(ft)	
16	Total Area of Ventilation Openings:	14.1371669411541		(ft <sup>2</sup> )	
17	Unquantified Mass S.A.:	2425.12787373203		(ft <sup>2</sup> )	
18	Unquantified Mass Rep. Thickness:	0.0208333333333333		(ft)	
19	Neutral Pressure Level Data				
20	Discharge Coefficient:	0.5			
21	$\Delta h_{NPL}$ :	56.3204633653787		(ft)	
22					
23	Shell Transmission Resistances:				
24					
25	1/4" Front Plate				
26	Amb. Side Sur. Temperature, T <sub>2</sub> :	87.8916282324232		(°F)	
27	Cab. Side Sur. Temperature, T <sub>1</sub> :	=C26+C30*(C5/(ksteel()*C4))		(°F)	
28	R <sub>i</sub> (Eq. 14):	=(1/C4)*((1/(hr(C26,J6)+hvert(C26,J6)))+(C5/ksteel()))+(1/(hrs(C27,J9)+hvert(C27,J9))))		(°F-hr/Btu)	
29	q <sub>i</sub> (Eq. 13):	=(J9-J6)/C28		(Btu/hr)	
30	q <sub>i</sub> (Eq. 16):	=(hr(C26,J6)+hvert(C26,J6))*C4*(C26-J6)		(Btu/hr)	
31	q <sub>i</sub> (Eq. 16) - q <sub>i</sub> (Eq. 13):	=C30-C29		(Btu/hr)	
32					
33	Rear Panels & Doors				
34	Amb. Side Sur. Temperature, T <sub>2</sub> :	87.8932539727344		(°F)	
35	Cab. Side Sur. Temperature, T <sub>1</sub> :	=C34+C38*(C7/(ksteel()*C6))		(°F)	
36	R <sub>i</sub> (Eq. 14):	=(1/C6)*((1/(hr(C34,J6)+hvert(C34,J6)))+(C7/ksteel()))+(1/(hrs(C35,J9)+hvert(C35,J9))))		(°F-hr/Btu)	
37	q <sub>i</sub> (Eq. 13):	=(J9-J6)/C36		(Btu/hr)	
38	q <sub>i</sub> (Eq. 16):	=(hr(C34,J6)+hvert(C34,J6))*C6*(C34-J6)		(Btu/hr)	
39	q <sub>i</sub> (Eq. 16) - q <sub>i</sub> (Eq. 13):	=C38-C37		(Btu/hr)	

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Table D-9: Formulas Used to Generate Table D-5

	F	G	H	I
1	Temperatures, Heat Loads, and Ambient Cond			
2	Total Room Heat Load:			
3	Percent Attributed to Cabinets:			
4	Total Cabinet Heat Load:			
5	Total Ambient Heat Load:			
6	Ambient Temperature:			
7	Ambient Pressure:			
8	Ambient Air Density:			
9	Desired Cabinet Air Temperature:			
10	Cabinet Air Density:			
11				
12	Ventilation Heat Transfer Data			
13	$q_{vent}$ (Eq. 11):			
14	$h_{vent}$ (Eq. 18):			
15	$h_{vent}$ (Eq. 23):			
16	$h_{vent}$ (Eq. 23) - $h_{vent}$ (Eq. 18):			
17	Comparison Data			
18	$Q_{cab}$ (Eq. 21):			
19	$Q_{room}$ (Drawing M-96, Sheets 3 & 4):			
20	$Q_{cab}/Q_{room}$ :			
21	$q_{vent}/q_{cab}$ :			
22				
23				
24				
25	Louvered Access Plates:			
26	Amb. Side Sur. Temperature, $T_2$ :	87.8932539727344		(°F)
27	Cab. Side Sur. Temperature, $T_1$ :	$=H26+H30*(C9/(ksteel()*C8))$		(°F)
28	$R_1$ (Eq. 14):	$=(1/C8)*((1/(hr(H26,J6)+hvert(H26,J6)))+(C9/ksteel()))+(1/(hrs(H27,J9)+hvert(H27,J9))))$		(°F-hr/Btu)
29	$q_1$ (Eq. 13):	$=(J9-J6)/H28$		(Btu/hr)
30	$q_1$ (Eq. 16):	$=(hr(H26,J6)+hvert(H26,J6))*C8*(H26-J6)$		(Btu/hr)
31	$q_1$ (Eq. 16) - $q_1$ (Eq. 13):	$=H30-H29$		(Btu/hr)
32				
33	Instrumentation (Representative):			
34	Amb. Side Sur. Temperature, $T_2$ :	87.8930862278686		(°F)
35	Cab. Side Sur. Temperature, $T_1$ :	$=H34+H38*(C11/(ksteel()*C10))$		(°F)
36	$R_1$ (Eq. 14):	$=(1/C10)*((1/(hr(H34,J6)+hvert(H34,J6)))+(C11/ksteel()))+(1/(hrs(H35,J9)+hvert(H35,J9))))$		(°F-hr/Btu)
37	$q_1$ (Eq. 13):	$=(J9-J6)/H36$		(Btu/hr)
38	$q_1$ (Eq. 16):	$=(hr(H34,J6)+hvert(H34,J6))*C10*(H34-J6)$		(Btu/hr)
39	$q_1$ (Eq. 16) - $q_1$ (Eq. 13):	$=H38-H37$		(Btu/hr)

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Table D-9: Formulas Used to Generate Table D-5

	J	K	L	M
1				
2	224848	(Btu/hr)		
3	0.5			
4	=J3*J2	(Btu/hr)		
5	=J2-J4	(Btu/hr)		
6	77	(°F)		
7	14.7	(psia)		
8	=rhoair(J6,J7)	(lb <sub>m</sub> /ft <sup>3</sup> )		
9	95	(°F)		
10	=rhoair(J9,J7)	(lb <sub>m</sub> /ft <sup>3</sup> )		
11				
12				
13	=J4-J23	(Btu/hr)		
14	=J13/(C3*(J9-J6))	(Btu/hr-°F-ft <sup>2</sup> )		
15	=QNPL(C20,C3,C21,J9,J6)*((J10+J8)/2)*cpair((J9+J6)/2)/C3	(Btu/hr-°F-ft <sup>2</sup> )		
16	=J15-J14	(Btu/hr-°F-ft <sup>2</sup> )		
17				
18	=QNPL(C20,C3,C21,J9,J6)/60	(cfm)		
19	21000	(cfm)		
20	=J18/J19			
21	=J13/J4			
22				
23	=SUM(C29,C37,H29,H37,L29,L37)	(Btu/hr)		
24				
25	Top Plate:			
26	Amb. Side Sur. Temperature, T <sub>2</sub> :		87.7261000094629	(°F)
27	Cab. Side Sur. Temperature, T <sub>1</sub> :		=L26+L30*(C13/(ksteel()*C12))	(°F)
28	R <sub>i</sub> (Eq. 14):		=(1/C12)*((1/(hr(L26,J6)+hhorz(L26,J6)))+(C13/ksteel()))+(1/(hrs(L27,J9)+hhorz(L27,J9)))	(°F-hr/Btu)
29	q <sub>i</sub> (Eq. 13):		=(J9-J6)/L28	(Btu/hr)
30	q <sub>i</sub> (Eq. 16):		=(hr(L26,J6)+hhorz(L26,J6))*C12*(L26-J6)	(Btu/hr)
31	q <sub>i</sub> (Eq. 16) - q <sub>i</sub> (Eq. 13):		=L30-L29	(Btu/hr)
32				
33	Top Access Covers:			
34	Amb. Side Sur. Temperature, T <sub>2</sub> :		87.7262796534273	(°F)
35	Cab. Side Sur. Temperature, T <sub>1</sub> :		=L34+L38*(C15/(ksteel()*C14))	(°F)
36	R <sub>i</sub> (Eq. 14):		=(1/C14)*((1/(hr(L34,J6)+hhorz(L34,J6)))+(C15/ksteel()))+(1/(hrs(L35,J9)+hhorz(L35,J9)))	(°F-hr/Btu)
37	q <sub>i</sub> (Eq. 13):		=(J9-J6)/L36	(Btu/hr)
38	q <sub>i</sub> (Eq. 16):		=(hr(L34,J6)+hhorz(L34,J6))*C14*(L34-J6)	(Btu/hr)
39	q <sub>i</sub> (Eq. 16) - q <sub>i</sub> (Eq. 13):		=L38-L37	(Btu/hr)

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Table D-10: Formulas Used to Generate Table D-6

	A	B	C	D	E	F	G	H
40								
41								
42								
43								
44	$T_{cab}$	$\Delta T$	$\rho_{cab}$	$\rho_{avg}$	$\Delta \rho$	$c_{p,avg}$	$h_{ven}$	$Q$
45	(°F)	(°F)	(lb <sub>m</sub> /ft <sup>3</sup> )	(lb <sub>m</sub> /ft <sup>3</sup> )	(lb <sub>m</sub> /ft <sup>3</sup> )	(Btu/lb <sub>m</sub> -°F)	(Btu/h-ft <sup>2</sup> -°F)	(ft <sup>3</sup> /hr)
46	80	=ABS(A46-\$J\$6)	=rhoair(A46,\$J\$7)	=(J\$8+C46)/2	=ABS(C46-\$J\$8)	=cpair(((A46+\$J\$6)/2))	=(H46*D46*F46)/\$C\$3	=QNPL(\$C\$20,\$C\$3,\$C\$21,A46,\$J\$6)
47	=A46+5	=ABS(A47-\$J\$6)	=rhoair(A47,\$J\$7)	=(J\$8+C47)/2	=ABS(C47-\$J\$8)	=cpair(((A47+\$J\$6)/2))	=(H47*D47*F47)/\$C\$3	=QNPL(\$C\$20,\$C\$3,\$C\$21,A47,\$J\$6)
48	=A47+5	=ABS(A48-\$J\$6)	=rhoair(A48,\$J\$7)	=(J\$8+C48)/2	=ABS(C48-\$J\$8)	=cpair(((A48+\$J\$6)/2))	=(H48*D48*F48)/\$C\$3	=QNPL(\$C\$20,\$C\$3,\$C\$21,A48,\$J\$6)
49	=A48+5	=ABS(A49-\$J\$6)	=rhoair(A49,\$J\$7)	=(J\$8+C49)/2	=ABS(C49-\$J\$8)	=cpair(((A49+\$J\$6)/2))	=(H49*D49*F49)/\$C\$3	=QNPL(\$C\$20,\$C\$3,\$C\$21,A49,\$J\$6)
50	=A49+5	=ABS(A50-\$J\$6)	=rhoair(A50,\$J\$7)	=(J\$8+C50)/2	=ABS(C50-\$J\$8)	=cpair(((A50+\$J\$6)/2))	=(H50*D50*F50)/\$C\$3	=QNPL(\$C\$20,\$C\$3,\$C\$21,A50,\$J\$6)
51	=A50+5	=ABS(A51-\$J\$6)	=rhoair(A51,\$J\$7)	=(J\$8+C51)/2	=ABS(C51-\$J\$8)	=cpair(((A51+\$J\$6)/2))	=(H51*D51*F51)/\$C\$3	=QNPL(\$C\$20,\$C\$3,\$C\$21,A51,\$J\$6)
52	=A51+5	=ABS(A52-\$J\$6)	=rhoair(A52,\$J\$7)	=(J\$8+C52)/2	=ABS(C52-\$J\$8)	=cpair(((A52+\$J\$6)/2))	=(H52*D52*F52)/\$C\$3	=QNPL(\$C\$20,\$C\$3,\$C\$21,A52,\$J\$6)
53	=A52+5	=ABS(A53-\$J\$6)	=rhoair(A53,\$J\$7)	=(J\$8+C53)/2	=ABS(C53-\$J\$8)	=cpair(((A53+\$J\$6)/2))	=(H53*D53*F53)/\$C\$3	=QNPL(\$C\$20,\$C\$3,\$C\$21,A53,\$J\$6)
54	=A53+5	=ABS(A54-\$J\$6)	=rhoair(A54,\$J\$7)	=(J\$8+C54)/2	=ABS(C54-\$J\$8)	=cpair(((A54+\$J\$6)/2))	=(H54*D54*F54)/\$C\$3	=QNPL(\$C\$20,\$C\$3,\$C\$21,A54,\$J\$6)
55	=A54+5	=ABS(A55-\$J\$6)	=rhoair(A55,\$J\$7)	=(J\$8+C55)/2	=ABS(C55-\$J\$8)	=cpair(((A55+\$J\$6)/2))	=(H55*D55*F55)/\$C\$3	=QNPL(\$C\$20,\$C\$3,\$C\$21,A55,\$J\$6)
56	=A55+5	=ABS(A56-\$J\$6)	=rhoair(A56,\$J\$7)	=(J\$8+C56)/2	=ABS(C56-\$J\$8)	=cpair(((A56+\$J\$6)/2))	=(H56*D56*F56)/\$C\$3	=QNPL(\$C\$20,\$C\$3,\$C\$21,A56,\$J\$6)
57	=A56+5	=ABS(A57-\$J\$6)	=rhoair(A57,\$J\$7)	=(J\$8+C57)/2	=ABS(C57-\$J\$8)	=cpair(((A57+\$J\$6)/2))	=(H57*D57*F57)/\$C\$3	=QNPL(\$C\$20,\$C\$3,\$C\$21,A57,\$J\$6)
58	=A57+5	=ABS(A58-\$J\$6)	=rhoair(A58,\$J\$7)	=(J\$8+C58)/2	=ABS(C58-\$J\$8)	=cpair(((A58+\$J\$6)/2))	=(H58*D58*F58)/\$C\$3	=QNPL(\$C\$20,\$C\$3,\$C\$21,A58,\$J\$6)
59	=A58+5	=ABS(A59-\$J\$6)	=rhoair(A59,\$J\$7)	=(J\$8+C59)/2	=ABS(C59-\$J\$8)	=cpair(((A59+\$J\$6)/2))	=(H59*D59*F59)/\$C\$3	=QNPL(\$C\$20,\$C\$3,\$C\$21,A59,\$J\$6)
60	=A59+5	=ABS(A60-\$J\$6)	=rhoair(A60,\$J\$7)	=(J\$8+C60)/2	=ABS(C60-\$J\$8)	=cpair(((A60+\$J\$6)/2))	=(H60*D60*F60)/\$C\$3	=QNPL(\$C\$20,\$C\$3,\$C\$21,A60,\$J\$6)

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Table D-11: Heat Transfer Coefficients and the NPL Flow Equation Used in Tables D-1 Through D-10

```

Function hr(Ts, Tinf) ' Eq. (4), Water Vapor to Surface Radiation
    Tsabs = Ts + 459.67
    Tinfabs = Tinf + 459.67
    hr = ((1 + 0.9) / 2) * (0.15) * sb() * (Tsabs + Tinfabs) * (Tsabs ^ 2 + Tinfabs
^ 2)
End Function

Function hvert(Ts, Tinf) ' Eq. (1), Turb. Natural Convection on a Vertical Plate
    hvert = 0.19 * (Abs(Ts - Tinf) ^ 0.33)
End Function

Function hhorz(Ts, Tinf) ' Eq. (2), Turb. Natural Convection on a Horizontal Plate
    hhorz = 0.22 * (Abs(Ts - Tinf) ^ 0.33)
End Function

Function hrsur(Ts, Tinf) ' Eq. (10), Surface to Surface Radiation with the Cabinet
    Tcab = Ts + 459.67
    Tamb = Tinf + 459.67
    hrsur = 0.9 * 0.5 * sb() * (Tcab + Tamb) * (Tcab ^ 2 + Tamb ^ 2)
End Function

Function QNPL(K, A, H, T1, T2) ' Eq. (21), Volumetric Flow Rate
    Tcab = T1 + 459.67
    Tamb = T2 + 459.67
    DNPL = H
    QNPL = K * A * (2 * g()) * DNPL * ((Tcab - Tamb) / Tcab) ^ 0.5
End Function

```

Table D-12: Air Property Correlations and Constant Data Used in Tables D-1 Through D-10

```
Function cndair(T)
  cndair = (T - 80.3) / (170.3 - 80.3) * (0.017335 - 0.015197) + 0.015197
End Function
```

```
Function cpair(T)
  cpair = (T - 80.3) / (170.3 - 80.3) * (0.241 - 0.2405) + 0.2405
End Function
```

```
Function rhoair(T, P)
  Rair = 0.3704
  Tabs = T + 459.67
  rhoair = P / (Rair * Tabs)
End Function
```

```
Function g() 'Acceleration due to gravity
  g = 41700000 ' ft/hr^2
End Function
```

```
Function rhosteel() ' Density of Steel
  rhosteel = 490 ' lbm/ft^3
End Function
```

```
Function sb() 'Stefan-Boltzman Constant
  sb = 0.000000001714 ' Btu/hr-ft^2-deg R^4
End Function
```

```
Function ksteel()
  ksteel = 27 ' Btu/h-ft-deg F
End Function
```

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## Attachment E

### Heat Structure Initial Temperature Distribution Data

#### Attachment E Summary:

The various combinations of heat structure configurations and initial boundary temperatures are summarized in Table E-1 on page E-2. The node numbers of each of the adiabatic heat structures in the current transient model that are bounded by two different temperatures are then summarized in Table E-2 according to the corresponding scenarios outlined in Table E-1. A KITTY6 thermal model is constructed to determine the initial temperatures of the heat structures, and the input and output file are given beginning on Page E-8. The resulting temperature vectors of each scenario from the KITTY6 model are given in Table E-3. Finally, the initial temperature vector for the Control Room / AEER transient model is presented in Table E-4. The adiabatic node temperatures that are modified in the vector in Table E-4 are highlighted by a heavy, black border.

**Table E-1: Adiabatic Heat Structure Configurations**

Type	Material / Construction	Thickness (ft)	Orientation	T <sub>1</sub> (°F)	T <sub>2</sub> (°F)	Number of Increments	
						Full Wall	Adiabatic Wall
1	Concrete	3	Vertical	77	104	36	18
2	Med. Density Masonry	0.96875	Vertical	77	104	12	6
3	High Density Masonry	0.96875	Vertical	77	95	12	6
4	Concrete	1	Horizontal	77	108	12	6
5	Concrete	3	Vertical	90	104	36	18
6	Concrete	1	Vertical	90	104	12	6
7	Concrete	1	Vertical	90	77	24	12
8	High Density Masonry	0.96875	Vertical	90	95	12	6
9	Hollow Steel Door w/ 16 ga. Face Sheets	0.14583	Vertical	77	104	N/A	N/A

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**Table E-2: Type Identification for the Control Room/AEER Adiabatic Walls**

Wall Type	Surface Nodes	Internal Nodes
1	92 - 93	640 - 656
1	114 - 115	667 - 683
2	94 - 95	None
2	112 - 113	None
3	120 - 121	754 - 758
4	180 - 181	830 - 834
4	182 - 183	835 - 839
4	186 - 187	843 - 847
4	190 - 191	851 - 855
5	307 - 308	931 - 947
5	343 - 344	1159 - 1175
6	309 - 310	948 - 952
6	341 - 342	1154 - 1158
7	323 - 324	1049 - 1053
7	335 - 336	1121 - 1125
8	349 - 350	1251 - 1255
9	231 & 233	232
9	243 & 245	244

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**Table E-3: Temperature Vectors for the Adiabatic Wall Types**

Wall Type	Temperatures (°F)									
1	84.3520	84.6990	85.0460	85.3930	85.7400	86.0870	86.4340	86.7810	87.1280	87.4750
	87.8220	88.1690	88.5160	88.8629	89.2099	89.5569	89.9039	90.2509	90.5979	
2	84.2784	85.3316	86.3848	87.4380	88.4911	89.5443	90.5975			
3	82.6784	83.2404	83.8023	84.3643	84.9262	85.4882	86.0501			
4	88.5482	89.2272	89.9062	90.5852	91.2641	91.9431	92.6221			
5	94.0025	94.1708	94.3391	94.5074	94.6757	94.8440	95.0123	95.1806	95.3489	95.5172
	95.6855	95.8538	96.0221	96.1904	96.3587	96.5270	96.6953	96.8636	97.0319	
6	95.5344	95.7844	96.0345	96.2845	96.5346	96.7846	97.0347			
7	84.8806	84.6555	84.4303	84.2051	83.9799	83.7548	83.5296			
8	91.7026	91.8364	91.9702	92.1040	92.2378	92.3716	92.5054			
9	81.5541	90.5775	99.6008							

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**Table E-4: Control Room/AEER Transient Model Initial Temperature Vector**  
(Adiabatic Walls Are Outlined by the Heavy Black Border)

	1	2	3	4	5	6	7	8	9	10
0	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
1	77.0000	105.1000	105.1000	77.0000	77.0000	77.0000	105.1000	105.1000	104.0000	104.0000
2	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	104.0000	104.0000	105.1000	105.1000
3	95.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
4	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	90.0000	90.0000
5	90.0000	90.0000	77.0000	77.0000	162.0000	77.0000	77.0000	77.0000	77.0000	77.0000
6	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
7	77.0000	77.0000	77.0000	77.0000	77.0000	83.3230	98.9705	83.3230	98.9705	77.0000
8	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	84.6228	97.6871	84.6228
9	97.6871	84.3520	90.5979	84.2784	85.3316	77.0000	77.0000	77.0000	77.0000	77.0000
10	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
11	77.0000	84.2784	85.3316	84.3520	90.5979	84.6228	97.6871	84.6228	97.6871	82.6784
12	86.0501	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
13	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
14	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
15	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
16	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
17	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	88.5482
18	92.6221	88.5482	92.6221	77.0000	77.0000	88.5482	92.6221	77.0000	77.0000	88.5482
19	92.6221	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
20	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
21	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
22	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
23	81.5541	90.5775	99.6008	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
24	77.0000	77.0000	81.5541	90.5775	99.6008	77.0000	77.0000	77.0000	77.0000	77.0000
25	95.0000	87.9000	87.9000	87.7000	87.7000	95.0000	95.0000	95.0000	95.0000	95.0000
26	95.0000	77.0000	77.0000	95.0000	87.9000	87.9000	87.7000	87.7000	95.0000	95.0000
27	95.0000	95.0000	95.0000	95.0000	77.0000	77.0000	95.0000	87.9000	87.9000	87.9000
28	87.9000	87.9000	87.9000	87.9000	87.9000	87.7000	87.7000	87.7000	87.7000	90.0000
29	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	95.0000	95.0000	77.0000	77.0000
30	90.0000	90.0000	84.6228	97.6871	84.6228	97.6871	94.0025	97.0319	95.5344	97.0347
31	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	83.8814	97.3093	90.0000	90.0000
32	83.3230	98.9705	84.8806	83.5296	90.0000	90.0000	83.8814	97.3093	90.0000	90.0000
33	90.0000	90.0000	90.0000	90.0000	84.8806	83.5296	83.3230	98.9705	90.0000	90.0000
34	95.5344	97.0347	94.0025	97.0319	84.6228	97.6871	84.6228	97.6871	91.7026	92.5054
35	90.0000	90.0000	134.0675	156.1188	134.0675	156.1188	98.9134	102.7583	98.9134	102.7583
36	134.0675	156.1188	98.9134	102.7583	98.9134	102.7583	134.0675	156.1188	90.0000	90.0000
37	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000
38	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000
39	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000
40	90.0000	90.0000	122.0000	122.0000	104.0000	77.0000	77.0000	77.0000	77.0000	77.0000
41	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
42	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
43	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
44	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
45	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
46	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
47	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
48	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000

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**Table E-4: Control Room/AEER Transient Model Initial Temperature Vector**  
(Adiabatic Walls Are Outlined by the Heavy Black Border)

	1	2	3	4	5	6	7	8	9	10
49	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
50	77.0000	77.0000	77.0000	83.9750	84.6270	85.2789	85.9309	86.5829	87.2349	87.8869
51	85.5388	89.1908	89.8428	90.4948	91.1468	91.7988	92.4507	93.1027	93.7547	94.4067
52	95.0587	95.7106	96.3626	97.0146	97.6666	98.3186	83.9750	84.6270	85.2789	85.9309
53	86.5829	87.2349	87.8869	88.5388	89.1908	89.8428	90.4948	91.1468	91.7988	92.4507
54	93.1027	93.7547	94.4067	95.0587	95.7106	96.3626	97.0146	97.6666	98.3186	77.0000
55	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
56	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	84.9857
57	85.3486	85.7115	86.0744	86.4373	86.8002	87.1631	87.5260	87.8889	88.2518	88.6147
58	88.9776	89.3405	89.7034	90.0663	90.4292	90.7921	91.1550	91.5179	91.8808	92.2437
59	92.6066	92.9695	93.3324	93.6952	94.0581	94.4210	94.7839	95.1468	95.5097	95.8726
60	96.2355	96.5984	96.9613	97.3242	84.9857	85.3486	85.7115	86.0744	86.4373	86.8002
61	87.1631	87.5260	87.8889	88.2518	88.6147	88.9776	89.3405	89.7034	90.0663	90.4292
62	90.7921	91.1550	91.5179	91.8808	92.2437	92.6066	92.9695	93.3324	93.6952	94.0581
63	94.4210	94.7839	95.1468	95.5097	95.8726	96.2355	96.5984	96.9613	97.3242	84.6990
64	85.0460	85.3930	85.7400	86.0870	86.4340	86.7810	87.1280	87.4750	87.8220	88.1690
65	88.5160	88.8629	89.2099	89.5569	89.9039	90.2509	77.0000	77.0000	77.0000	77.0000
66	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	84.6990	85.0460	85.3930	85.7400
67	86.0870	86.4340	86.7810	87.1280	87.4750	87.8220	88.1690	88.5160	88.8629	89.2099
68	89.5569	89.9039	90.2509	84.9857	85.3486	85.7115	86.0744	86.4373	86.8002	87.1631
69	87.5260	87.8889	88.2518	88.6147	88.9776	89.3405	89.7034	90.0663	90.4292	90.7921
70	91.1550	91.5179	91.8808	92.2437	92.6066	92.9695	93.3324	93.6952	94.0581	94.4210
71	94.7839	95.1468	95.5097	95.8726	96.2355	96.5984	96.9613	97.3242	84.9857	85.3486
72	85.7115	86.0744	86.4373	86.8002	87.1631	87.5260	87.8889	88.2518	88.6147	88.9776
73	89.3405	89.7034	90.0663	90.4292	90.7921	91.1550	91.5179	91.8808	92.2437	92.6066
74	92.9695	93.3324	93.6952	94.0581	94.4210	94.7839	95.1468	95.5097	95.8726	96.2355
75	96.5984	96.9613	97.3242	83.2404	83.8023	84.3643	84.9262	85.4882	77.0000	77.0000
76	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
77	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
78	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
79	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
80	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
81	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000
82	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	77.0000	89.2272
83	89.9062	90.5852	91.2641	91.9431	89.2272	89.9062	90.5852	91.2641	91.9431	77.0000
84	77.0000	77.0000	89.2272	89.9062	90.5852	91.2641	91.9431	77.0000	77.0000	77.0000
85	89.2272	89.9062	90.5852	91.2641	91.9431	90.0000	90.0000	90.0000	90.0000	90.0000
86	84.9857	85.3486	85.7115	86.0744	86.4373	86.8002	87.1631	87.5260	87.8889	88.2518
87	88.6147	88.9776	89.3405	89.7034	90.0663	90.4292	90.7921	91.1550	91.5179	91.8808
88	92.2437	92.6066	92.9695	93.3324	93.6952	94.0581	94.4210	94.7839	95.1468	95.5097
89	95.8726	96.2355	96.5984	96.9613	97.3242	84.9857	85.3486	85.7115	86.0744	86.4373
90	86.8002	87.1631	87.5260	87.8889	88.2518	88.6147	88.9776	89.3405	89.7034	90.0663
91	90.4292	90.7921	91.1550	91.5179	91.8808	92.2437	92.6066	92.9695	93.3324	93.6952
92	94.0581	94.4210	94.7839	95.1468	95.5097	95.8726	96.2355	96.5984	96.9613	97.3242
93	94.1708	94.3391	94.5074	94.6757	94.8440	95.0123	95.1806	95.3489	95.5172	95.6855
94	95.8538	96.0221	96.1904	96.3587	96.5270	96.6953	96.8636	95.7844	95.0345	96.2845
95	96.5346	96.7846	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000
96	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000
97	90.0000	90.0000	90.0000	84.2011	84.5208	84.8405	85.1602	85.4799	85.7996	86.1193

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**Table E-4: Control Room/AEER Transient Model Initial Temperature Vector**  
(Adiabatic Walls Are Outlined by the Heavy Black Border)

	1	2	3	4	5	6	7	8	9	10
98	86.4391	86.7588	87.0785	87.2982	87.7179	88.0376	88.3573	88.6770	88.9968	89.3165
99	89.6362	89.9559	90.2756	90.5953	90.9150	91.2347	91.5545	91.8742	92.1939	92.5136
100	92.8333	93.1530	93.4727	93.7924	94.1122	94.4319	94.7516	95.0713	95.3910	95.7107
101	96.0304	96.3501	96.6699	96.9896	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000
102	90.0000	90.0000	90.0000	90.0000	90.0000	83.9750	84.6270	85.2789	85.9309	86.5829
103	87.2349	87.8869	88.5388	89.1908	89.8428	90.4948	91.1468	91.7988	92.4507	93.1027
104	93.7547	94.4067	95.0587	95.7106	96.3626	97.0146	97.6666	98.3186	84.6555	84.4303
105	84.2051	83.9799	83.7548	90.0000	90.0000	90.0000	90.0000	90.0000	84.2011	84.5208
106	84.8405	85.1602	85.4799	85.7996	86.1193	86.4391	86.7588	87.0785	87.3982	87.7179
107	88.0376	88.3573	88.6770	88.9968	89.3165	89.6362	89.9559	90.2756	90.5953	90.9150
108	91.2347	91.5545	91.8742	92.1939	92.5136	92.8333	93.1530	93.4727	93.7924	94.1122
109	94.4319	94.7516	95.0713	95.3910	95.7107	96.0304	96.3501	96.6699	96.9896	90.0000
110	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000
111	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000
112	84.6555	84.4303	84.2051	83.9799	83.7548	83.9750	84.6270	85.2789	85.9309	86.5829
113	87.2349	87.8869	88.5388	89.1908	89.8428	90.4948	91.1468	91.7988	92.4507	93.1027
114	93.7547	94.4067	95.0587	95.7106	96.3626	97.0146	97.6666	98.3186	90.0000	90.0000
115	90.0000	90.0000	90.0000	95.7844	96.0345	96.2845	96.5346	96.7846	94.1708	94.3391
116	94.5074	94.6757	94.8440	95.0123	95.1806	95.3489	95.5172	95.6855	95.8538	96.0221
117	96.1904	96.3587	96.5270	96.6953	96.8636	84.9857	85.3486	85.7115	86.0744	86.4373
118	86.8002	87.1631	87.5260	87.8889	88.2518	88.6147	88.9776	89.3405	89.7034	90.0663
119	90.4292	90.7921	91.1550	91.5179	91.8808	92.2437	92.6066	92.9695	93.3324	93.6952
120	94.0581	94.4210	94.7839	95.1468	95.5097	95.8726	96.2355	96.5984	96.9613	97.3242
121	84.9857	85.3486	85.7115	86.0744	86.4373	86.8002	87.1631	87.5260	87.8889	88.2518
122	88.6147	88.9776	89.3405	89.7034	90.0663	90.4292	90.7921	91.1550	91.5179	91.8808
123	92.2437	92.6066	92.9695	93.3324	93.6952	94.0581	94.4210	94.7839	95.1468	95.5097
124	95.8726	96.2355	96.5984	96.9613	97.3242	90.0000	90.0000	90.0000	90.0000	90.0000
125	91.8364	91.9702	92.1040	92.2378	92.3716	134.9863	135.9051	136.8239	137.7427	138.6615
126	139.5803	140.4991	141.4179	142.3368	143.2556	144.1744	145.0932	146.0120	146.9308	147.8496
127	148.7684	149.6872	150.6060	151.5248	152.4436	153.3624	154.2812	155.2000	134.9863	135.9051
128	136.8239	137.7427	138.6615	139.5803	140.4991	141.4179	142.3368	143.2556	144.1744	145.0932
129	146.0120	146.9308	147.8496	148.7684	149.6872	150.6060	151.5248	152.4436	153.3624	154.2812
130	155.2000	99.2338	99.5542	99.8746	100.1950	100.5154	100.8358	101.1562	101.4766	101.7970
131	102.1174	102.4378	99.2338	99.5542	99.8746	100.1950	100.5154	100.8358	101.1562	101.4766
132	101.7970	102.1174	102.4378	134.9863	135.9051	136.8239	137.7427	138.6615	139.5803	140.4991
133	141.4179	142.3368	143.2556	144.1744	145.0932	146.0120	146.9308	147.8496	148.7684	149.6872
134	150.6060	151.5248	152.4436	153.3624	154.2812	155.2000	99.2338	99.5542	99.8746	100.1950
135	100.5154	100.8358	101.1562	101.4766	101.7970	102.1174	102.4378	99.2338	99.5542	99.8746
136	100.1950	100.5154	100.8358	101.1562	101.4766	101.7970	102.1174	102.4378	134.9863	135.9051
137	136.8239	137.7427	138.6615	139.5803	140.4991	141.4179	142.3368	143.2556	144.1744	145.0932
138	146.0120	146.9308	147.8496	148.7684	149.6872	150.6060	151.5248	152.4436	153.3624	154.2812
139	155.2000									

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Braidwood Control Rm. and ASER Adiabatic Wall Model

26	46	10	21	0	0	0	0	0	9	144	0	0
/NV	NP	NR	NP	MG	NW	XMAX	KCH	IVIP	NSSS	PCF	NQB	NMB
1	0.								/ 4 Print Out Times			
2	77.	0	1						/ 5-1 Room at 77 deg F			
2	90.	0	1						/ 5-2 Room at 90 deg F			
2	95.	0	1						/ 5-3 Room at 95 deg F			
2	104.	0	1						/ 5-4 Room at 104 deg F			
2	105.1	0	1						/ 5-5 Room at 105.1 deg F			
2	108.	0	1						/ 5-6 Room at 108 deg F			
2	122.	0	1						/ 5-7 Room at 122 deg F			
6	0	0	0	9					/ 5-8 3 ft conc wall betw. 77 & 104			
7									/ 5-9			
6	0	0	0	17					/ 5-10 11.625 in med density masonry wall betw 77 & 104			
7									/ 5-11			
6	0	0	0	5					/ 5-12 11.625 in high density masonry wall betw 77 & 95			
7									/ 5-13			
6	0	0	0	9					/ 5-14 1 ft conc slab between 77 and 108			
7									/ 5-15			
6	0	0	0	9					/ 5-16 3 ft conc wall betw. 90 & 104			
7									/ 5-17			
6	0	0	0	9					/ 5-18 1 ft conc wall betw. 90 & 104			
7									/ 5-19			
6	0	0	0	9					/ 5-20 1 ft conc wall betw. 90 & 77			
7									/ 5-21			
6	0	0	0	5					/ 5-22 11.625 in high density masonry wall betw 90 & 95			
7									/ 5-23			
1	.00492	77.	0.	0	0	13			/ 5-24 Hlw Door, Face Sheet Adj. to 77 deg F			
1	.136	77.	0.	0	0	1			/ 5-25 Air Space in Door			
1	.00492	77.	0.	0	0	13			/ 5-26 Hlw Door, Face Sheet Adj. to 104 deg F			
2	1	8	2	1.					/ 6-1 WV To Sur. Rad. Betw. 1 & 8			
2	1	8	1	1.					/ 6-2 NC Betw. 1 & 8			
8	8	9	36	1.	3.0				/ 6-3 Cnd. Betw. 8 & 9			
2	9	4	1	1.					/ 6-4 NC Betw. 9 & 4			
2	9	4	2	1.					/ 6-5 WV To Sur. Rad. Betw. 9 & 4			
2	1	10	2	1.					/ 6-6 WV To Sur. Rad. Betw. 1 & 10			
2	1	10	1	1.					/ 6-7 NC Betw. 1 & 10			
8	10	11	12	1.	.96875				/ 6-8 Cnd. Betw. 10 & 11			
2	11	4	1	1.					/ 6-9 NC Betw. 11 & 4			
2	11	4	2	1.					/ 6-10 WV To Sur. Rad. Betw. 11 & 4			
2	1	12	2	1.					/ 6-11 WV To Sur. Rad. Betw. 1 & 12			
2	1	12	1	1.					/ 6-12 NC Betw. 1 & 12			
8	12	13	12	1.	.96875				/ 6-13 Cnd. Betw. 12 & 13			
2	13	3	1	1.					/ 6-14 NC Betw. 13 & 3			
2	13	3	2	1.					/ 6-15 WV To Sur. Rad. Betw. 13 & 3			
2	1	14	2	1.					/ 6-16 WV To Sur. Rad. Betw. 1 & 14			
2	1	14	5	1.					/ 6-17 NC Betw. 1 & 14			
8	14	15	12	1.	1.0				/ 6-18 Cnd. Betw. 14 & 15			
2	15	6	7	1.					/ 6-19 NC Betw. 15 & 6			
2	15	6	2	1.					/ 6-20 WV To Sur. Rad. Betw. 15 & 6			
2	2	16	2	1.					/ 6-21 WV To Sur. Rad. Betw. 2 & 16			
2	2	16	1	1.					/ 6-22 NC Betw. 2 & 16			
8	16	17	36	1.	3.0				/ 6-23 Cnd. Betw. 16 & 17			
2	17	4	1	1.					/ 6-24 NC Betw. 17 & 4			
2	17	4	2	1.					/ 6-25 WV To Sur. Rad. Betw. 17 & 4			
2	2	18	2	1.					/ 6-26 WV To Sur. Rad. Betw. 2 & 18			
2	2	18	1	1.					/ 6-27 NC Betw. 2 & 18			
8	18	19	12	1.	1.0				/ 6-28 Cnd. Betw. 18 & 19			
2	19	4	1	1.					/ 6-29 NC Betw. 19 & 4			
2	19	4	2	1.					/ 6-30 WV To Sur. Rad. Betw. 19 & 4			
2	2	20	2	1.					/ 6-31 WV To Sur. Rad. Betw. 2 & 20			
2	2	20	1	1.					/ 6-32 NC Betw. 2 & 20			
8	20	21	12	1.	1.0				/ 6-33 Cnd. Betw. 20 & 21			
2	21	1	1	1.					/ 6-34 NC Betw. 21 & 1			
2	21	1	2	1.					/ 6-35 WV To Sur. Rad. Betw. 21 & 1			
2	2	22	2	1.					/ 6-36 WV To Sur. Rad. Betw. 2 & 22			
2	2	22	1	1.					/ 6-37 NC Betw. 2 & 22			
8	22	23	12	1.	.96875				/ 6-38 Cnd. Betw. 22 & 23			
2	23	3	1	1.					/ 6-39 NC Betw. 23 & 3			
2	23	3	2	1.					/ 6-40 WV To Sur. Rad. Betw. 23 & 3			
2	1	24	2	1.					/ 6-41 WV To Sur Rad Betw 1 & 24			
2	1	24	1	1.					/ 6-42 NC Betw 1 & 24			
1	24	25	1.	0.	.068				/ 6-43 Cnd Betw 24 & 25			
1	25	26	1.	.068	0.				/ 6-44 Cnd Betw 25 & 26			
2	26	4	2	1.					/ 6-45 WV To Sur Rad Betw 26 & 4			
2	26	4	1	1.					/ 6-46 NC Betw 26 & 4			
3	0	0	0	0					/ 7A-1 MC Vertical Plate, Turbulent			
0.19	0.33								/ 7B-1			
4	21	0	0	0					/ 7A-2 WV To Sur Rad (Sur Em. Given in SF 2.1			
0.15									/ 7B-2 WV Emissivity & Absorbtivity			

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3 0 1 4 0
0.22 0.33
1 0 0 0 0
0.001
3 0 -1 6 0
0.22 0.33
1 0 0 0 0
0.001
3 0 -1 8 0
0.22 0.33
1 0 0 0 0
0.001
3 0 1 10 0
0.22 0.33
1 0 0 0 0
0.001
1 70. .071
1 70. .17
1 70. .016
1 70. .24
1 70. 125.
1 70. .16
1 70. .4
1 70. .18
1 70. 145.
1 70. .156
1 70. .92
1 70. .156
1 70. 490.
1 70. .12
1 70. 27.
1 70. .12
1 70. 100.
1 70. .2
1 70. .29
1 70. .2
1 0. 0.95

/ 7A-3 NC OR Cnd to a Ceiling
/ 7B-3
/ 7A-4 Cnd to a Ceiling
/ 7B-4 Resistance for Cnd
/ 7A-5 NC OR Cnd to a Floor
/ 7B-5
/ 7A-6 Cnd to a Floor
/ 7B-6 Resistance for Cnd
/ 7A-7 NC OR Cnd to a Ceiling
/ 7B-7
/ 7A-8 Cnd to a Ceiling
/ 7B-8 Resistance for Cnd
/ 7A-9 NC OR Cnd to a Floor
/ 7B-9
/ 7A-10 Cnd to a Floor
/ 7B-10 Resistance for Cnd
/ 8-1 Density, Air
/ 8-2 Cv,
/ 8-3 k,
/ 8-4 Cp,
/ 8-5 Density, High Density Masonry
/ 8-6 Cv,
/ 8-7 k,
/ 8-8 Cp,
/ 8-9 Density, Concrete
/ 8-10 Cv,
/ 8-11 k,
/ 8-12 Cp,
/ 8-13 Density, Steel
/ 8-14 Cv,
/ 8-15 k,
/ 8-16 Cp,
/ 8-17 Density, Med. Density Masonry
/ 8-18 Cv,
/ 8-19 k,
/ 8-20 Cv,
/ 8-21 (1+EPSILON_S) OVER 2 (Concrete Wall)

$NAME1 IPONV=-1, IPOMC=-1, IPOPCV=-1, IPOOLT=-1, IPOYMP=-1, IPOCHK=-1,
IPOCFM=-1, IPOPT7=-1, IPOFI=-1, IPOVI=-1, KACHN=1.E-10, NSTPMK=50000,
IFOP=-1, MFOP=5, IPOPA=-1, IPOM=-1
/ 9 NAMELIST

77. 90. 95. 104. 105.1 106. 122. 200*77.
/ 10 Wall Temperature Vector

1 8 9 4 / 11-1
1 10 11 4 / 11-2
1 12 13 3 / 11-3
1 14 15 6 / 11-4
2 16 17 4 / 11-5
2 18 19 4 / 11-6
2 20 21 1 / 11-7
2 22 23 3 / 11-8
1 24 25 26 4 / 11-9

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Listing of Input Data for Case 1 from File cr-ss.inp

## 1. Title:

Braidwood Control Rm. and ABER Adiabatic Wall Model

## 2. Problem Counters and Options:

Number of Nodes, NV: . . . . .	26	Number of Paths, NP: . . . . .	46
Number of Heat Transfer Functions (HTF), NH: . . . . .	10	Number of Simple Functions (SF), NF: . . . . .	21
Number of Non-condensable Gas (NCG) Species, NG: . . . . .	0	Presence of Water Option (0=no, 1=yes), NW: . . . . .	0
Choking Flow Option (0=off, 1=on), KChoke: . . . . .	0	Record Type 6a Input Option (0=no, 1=yes), IVIP: . . . . .	0
Calculation End Time (hr), XMax: . . . . .	0.0000000	Number of Node Series for Initial Steady State, NSSS: . . . . .	9
Pressure Conversion Factor, PCF: . . . . .	144.0000		
Number of Internal Heat Gains, NIG: . . . . .	0	Number of Mass Blowdowns, NMB: . . . . .	0

Units for all pressures unless otherwise noted: as specified by PCF psf/units

## 3. Since NG = 0, there are NO Perfect Gas Species present in the model

## 4. Times for 1 Printouts (hr):

0.000000

## 5. Input data for MV = 26 Volume Nodes (IVT = node type):

Node 1:	IVT 2 BI	TFB	77.00000	IV1 F(X)	0	IV2 F(T)	1	5-1 Room at 77 deg F
Node 2:	IVT 2 BI	TFB	90.00000	IV1 F(X)	0	IV2 F(T)	1	5-2 Room at 90 deg F
Node 3:	IVT 2 BI	TFB	95.00000	IV1 F(X)	0	IV2 F(T)	1	5-3 Room at 95 deg F
Node 4:	IVT 2 BI	TFB	104.0000	IV1 F(X)	0	IV2 F(T)	1	5-4 Room at 104 deg F
Node 5:	IVT 2 BI	TFB	105.1000	IV1 F(X)	0	IV2 F(T)	1	5-5 Room at 105.1 deg F
Node 6:	IVT 2 BI	TFB	108.0000	IV1 F(X)	0	IV2 F(T)	1	5-6 Room at 108 deg F
Node 7:	IVT 2 BI	TFB	122.0000	IV1 F(X)	0	IV2 F(T)	1	5-7 Room at 122 deg F
Node 8:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T) 9 5-8 3 ft conc wall betw. 77 & 104
Node 9:	IVT 7 WH		5-9					
Node 10:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T) 17 5-10 11.625 in med density masonry wall betw 77 & 104
Node 11:	IVT 7 WH		5-11					
Node 12:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T) 5 5-12 11.625 in high density masonry wall betw 77 & 95
Node 13:	IVT 7 WH		5-13					
Node 14:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T) 9 5-14 1 ft conc slab between 77 and 108
Node 15:	IVT 7 WH		5-15					
Node 16:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T) 9 5-16 3 ft conc wall betw. 90 & 104
Node 17:	IVT 7 WH		5-17					
Node 18:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T) 9 5-18 1 ft conc wall betw. 90 & 104
Node 19:	IVT 7 WH		5-19					
Node 20:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T) 9 5-20 1 ft conc wall betw. 90 & 77
Node 21:	IVT 7 WH		5-21					
Node 22:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T) 5 5-22 11.625 in high density masonry wall betw 90 & 95
Node 23:	IVT 7 WH		5-23					
Node 24:	IVT 1 AI	V 0.4920000E-02	TP 77.00000	GB 0.0000000		IV1=F(X)	0	IV2=F(T) 0 IV3=F(T) 13
	5-24 Hlw Door, Face Sheet Adj. to 77 deg F							
Node 25:	IVT 1 AI	V 0.1360000	TP 77.00000	GB 0.0000000		IV1=F(X)	0	IV2=F(T) 0 IV3=F(T) 1
	5-25 Air Space in Door							

Node 26: IVT 1 A1 V 0.4920000E-02 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-26 Hlw Door, Face Sheet Adj. to 104 deg F

6. Input data for NP = 46 Paths (IPT = path type, IT = tail node, IH = head node):

Path 1:	IPT 2 CR IT 1 IH 8	IP1=MTF 2 A 1.000000	Fp 1.000000	6-1 WV To Sur. Rad. Betw. 1 & 8
Path 2:	IPT 2 CR IT 1 IH 8	IP1=MTF 1 A 1.000000	Fp 1.000000	6-2 hC Betw. 1 & 8
Path 3:	IPT 8 WP IT 8 IH 9	IP1=ND 36 A 1.000000	DT 3.000000	6-3 Cnd. Betw. 8 & 9
Path 4:	IPT 2 CR IT 9 IH 4	IP1=MTF 1 A 1.000000	Fp 1.000000	6-4 NC Betw. 9 & 4
Path 5:	IPT 2 CR IT 9 IH 4	IP1=MTF 2 A 1.000000	Fp 1.000000	6-5 WV To Sur. Rad. Betw. 9 & 4
Path 6:	IPT 2 CR IT 1 IH 10	IP1=MTF 2 A 1.000000	Fp 1.000000	6-6 WV To Sur. Rad. Betw. 1 & 10
Path 7:	IPT 2 CR IT 1 IH 10	IP1=MTF 1 A 1.000000	Fp 1.000000	6-7 NC Betw. 1 & 10
Path 8:	IPT 8 WP IT 10 IH 11	IP1=ND 12 A 1.000000	DT 0.9687500	6-8 Cnd. Betw. 10 & 11
Path 9:	IPT 2 CR IT 11 IH 4	IP1=MTF 1 A 1.000000	Fp 1.000000	6-9 NC Betw. 11 & 4
Path 10:	IPT 2 CR IT 11 IH 4	IP1=MTF 2 A 1.000000	Fp 1.000000	6-10 WV To Sur. Rad. Betw. 11 & 4
Path 11:	IPT 2 CR IT 1 IH 12	IP1=MTF 2 A 1.000000	Fp 1.000000	6-11 WV To Sur. Rad. Betw. 1 & 12
Path 12:	IPT 2 CR IT 1 IH 12	IP1=MTF 1 A 1.000000	Fp 1.000000	6-12 NC Betw. 1 & 12
Path 13:	IPT 8 WP IT 12 IH 13	IP1=ND 12 A 1.000000	DT 0.9687500	6-13 Cnd. Betw. 12 & 13
Path 14:	IPT 2 CR IT 13 IH 3	IP1=MTF 1 A 1.000000	Fp 1.000000	6-14 NC Betw. 13 & 3
Path 15:	IPT 2 CR IT 13 IH 3	IP1=MTF 2 A 1.000000	Fp 1.000000	6-15 WV To Sur. Rad. Betw. 13 & 3
Path 16:	IPT 2 CR IT 1 IH 14	IP1=MTF 2 A 1.000000	Fp 1.000000	6-16 WV To Sur. Rad. Betw. 1 & 14
Path 17:	IPT 2 CR IT 1 IH 14	IP1=MTF 5 A 1.000000	Fp 1.000000	6-17 NC Betw. 1 & 14
Path 18:	IPT 8 WP IT 14 IH 15	IP1=ND 12 A 1.000000	DT 1.000000	6-18 Cnd. Betw. 14 & 15
Path 19:	IPT 2 CR IT 15 IH 6	IP1=MTF 7 A 1.000000	Fp 1.000000	6-19 NC Betw. 15 & 6
Path 20:	IPT 2 CR IT 15 IH 6	IP1=MTF 2 A 1.000000	Fp 1.000000	6-20 WV To Sur. Rad. Betw. 15 & 6
Path 21:	IPT 2 CR IT 2 IH 16	IP1=MTF 2 A 1.000000	Fp 1.000000	6-21 WV To Sur. Rad. Betw. 2 & 16
Path 22:	IPT 2 CR IT 2 IH 16	IP1=MTF 1 A 1.000000	Fp 1.000000	6-22 NC Betw. 2 & 16
Path 23:	IPT 8 WP IT 16 IH 17	IP1=ND 36 A 1.000000	DT 3.000000	6-23 Cnd. Betw. 16 & 17
Path 24:	IPT 2 CR IT 17 IH 4	IP1=MTF 1 A 1.000000	Fp 1.000000	6-24 NC Betw. 17 & 4
Path 25:	IPT 2 CR IT 17 IH 4	IP1=MTF 2 A 1.000000	Fp 1.000000	6-25 WV To Sur. Rad. Betw. 17 & 4
Path 26:	IPT 2 CR IT 2 IH 18	IP1=MTF 2 A 1.000000	Fp 1.000000	6-26 WV To Sur. Rad. Betw. 2 & 18
Path 27:	IPT 2 CR IT 2 IH 18	IP1=MTF 1 A 1.000000	Fp 1.000000	6-27 NC Betw. 2 & 18

Path 28:	IPT 8 WP	IT 18	IN 19	IP1=ND	12 A	1.000000	DT 1.000000		6-28 Cnd. Betw. 18 & 19
Path 29:	IPT 2 CR	IT 19	IN 4	IP1=HTF	1 A	1.000000	Fp 1.000000		6-29 NC Betw. 19 & 4
Path 30:	IPT 2 CR	IT 19	IN 4	IP1=HTF	2 A	1.000000	Fp 1.000000		6-30 WV To Sur. Rad. Betw. 19 & 4
Path 31:	IPT 2 CR	IT 2	IN 20	IP1=HTF	2 A	1.000000	Fp 1.000000		6-31 WV To Sur. Rad. Betw. 2 & 20
Path 32:	IPT 2 CR	IT 2	IN 20	IP1=HTF	1 A	1.000000	Fp 1.000000		6-32 NC Betw. 2 & 20
Path 33:	IPT 8 WP	IT 20	IN 21	IP1=ND	12 A	1.000000	DT 1.000000		6-33 Cnd. Betw. 20 & 21
Path 34:	IPT 2 CR	IT 21	IN 1	IP1=HTF	1 A	1.000000	Fp 1.000000		6-34 NC Betw. 21 & 1
Path 35:	IPT 2 CR	IT 21	IN 1	IP1=HTF	2 A	1.000000	Fp 1.000000		6-35 WV To Sur. Rad. Betw. 21 & 1
Path 36:	IPT 2 CR	IT 2	IN 22	IP1=HTF	2 A	1.000000	Fp 1.000000		6-36 WV To Sur. Rad. Betw. 2 & 22
Path 37:	IPT 2 CR	IT 2	IN 22	IP1=HTF	1 A	1.000000	Fp 1.000000		6-37 NC Betw. 2 & 22
Path 38:	IPT 8 WP	IT 22	IN 23	IP1=ND	12 A	1.000000	DT 0.9687500		6-38 Cnd. Betw. 22 & 23
Path 39:	IPT 2 CR	IT 23	IN 3	IP1=HTF	1 A	1.000000	Fp 1.000000		6-39 NC Betw. 23 & 3
Path 40:	IPT 2 CR	IT 23	IN 3	IP1=HTF	2 A	1.000000	Fp 1.000000		6-40 WV To Sur. Rad. Betw. 23 & 3
Path 41:	IPT 2 CR	IT 1	IN 24	IP1=HTF	2 A	1.000000	Fp 1.000000		6-41 WV To Sur Rad Betw 1 & 24
Path 42:	IPT 2 CR	IT 1	IN 24	IP1=HTF	1 A	1.000000	Fp 1.000000		6-42 NC Betw 1 & 24
Path 43:	IPT 1 CR	IT 24	IN 25	A	1.000000		DT 0.0000000	DN 0.6800000E-01	6-43 Cnd Betw 24 & 25
Path 44:	IPT 1 CR	IT 25	IN 26	A	1.000000		DT 0.6800000E-01	DN 0.0000000	6-44 Cnd Betw 25 & 26
Path 45:	IPT 2 CR	IT 26	IN 4	IP1=HTF	2 A	1.000000	Fp 1.000000		6-45 WV To Sur Rad Betw 26 & 4
Path 46:	IPT 2 CR	IT 26	IN 4	IP1=HTF	1 A	1.000000	Fp 1.000000		6-46 NC Betw 26 & 4

6a. Input Array Controls: IVIP = 0; there are no input arrays.



## 7. Input data for MH = 10 Heat Transfer Functions (HTF):

HTF 1: INT 3 Natural Convection: 7A-1 NC Vertical Plate, Turbulent 7B-1

7a. IH1, X-function 0 IH2, Direction control 0 IH3, Alternate HTF 0 IH4, T-function 0

7b. C1, Constant factor 0.1900000 C2, Exponent 0.3300000

HTF 2: INT 4 General Radiation: 7A-2 MV To Sur Rad (Sur Em. Given in SF 21) 7B-2 MV Emissivity &amp; Absorptivity

7a. IH1, X-function 21 IH2, Direction control 0 IH3, Alternate HTF 0 IH4, T-function 0

7b. C1, Constant factor 0.1500000

HTF 3: INT 3 Natural Convection: 7A-3 NC OR Cnd to a Ceiling 7B-3

7a. IH1, X-function 0 IH2, Direction control 1 IH3, Alternate HTF 4 IH4, T-function 0

7b. C1, Constant factor 0.2200000 C2, Exponent 0.3300000

HTF 4: INT 1 Specified Time (X) and/or Temperature (T) function: 7A-4 Cnd to a Ceiling 7B-4 Resistance for Cnd

7a. IH1, X-function 0 IH2, Direction control 0 IH3, Alternate HTF 0 IH4, T-function 0

7b. C1, Constant factor 1.0000000E-03

HTF 5: INT 3 Natural Convection: 7A-5 NC OR Cnd to a Floor 7B-5

7a. IH1, X-function 0 IH2, Direction control -1 IH3, Alternate HTF 6 IH4, T-function 0

7b. C1, Constant factor 0.2200000 C2, Exponent 0.3300000

HTF 6: INT 1 Specified Time (X) and/or Temperature (T) function: 7A-6 Cnd to a Floor 7B-6 Resistance for Cnd

7a. IH1, X-function 0 IH2, Direction control 0 IH3, Alternate HTF 0 IH4, T-function 0

7b. C1, Constant factor 1.0000000E-03

HTF 7: INT 3 Natural Convection: 7A-7 NC OR Cnd to a Ceiling 7B-7

7a. IH1, X-function 0 IH2, Direction control -1 IH3, Alternate HTF 8 IH4, T-function 0

7b. C1, Constant factor 0.2200000 C2, Exponent 0.3300000

HTF 8: INT 1 Specified Time (X) and/or Temperature (T) function: 7A-8 Cnd to a Ceiling 7B-8 Resistance for Cnd

7a. IH1, X-function 0 IH2, Direction control 0 IH3, Alternate HTF 0 IH4, T-function 0

7b. C1, Constant factor 1.0000000E-03

HTF 9: INT 3 Natural Convection: 7A-9 NC OR Cnd to a Floor 7B-9

7a. IH1, X-function 0 IH2, Direction control 1 IH3, Alternate HTF 10 IH4, T-function 0

7b. C1, Constant factor 0.2200000 C2, Exponent 0.3300000

MTF 10: INT 1 Specified Time (X) and/or Temperature (T) function: 7A-10 Cnd to a Floor 7B-10 Resistance for Cnd

7a. IN1, X-function 0 IN2, Direction control 0 IN3, Alternate MTF 0 IN4, T-function 0

7b. C1, Constant factor 1.0000000E-03

For any Constant Factor or Dimension C1 = 0, see respective Path data for value Fp.

7.1 There are NO Internal Heat Gains (type 7.1) in the model.

7.2 There are NO Mass Blowdowns (type 7.2) in the model.

## 8. Input data for NF = 21 Simple Functions (SF):

SF No. 1	T (eF)	70.0000
1 pts.	Rho (lb/cf)	7.100000E-02
SF No. 2	T (eF)	70.0000
1 pts.	Cv (B/lbf)	0.170000
SF No. 3	T (eF)	70.0000
1 pts.	k (B/h-lbf)	1.600000E-02
SF No. 4	T (eF)	70.0000
1 pts.	FHT	0.240000
SF No. 5	T (eF)	70.0000
1 pts.	Rho (lb/cf)	125.000
SF No. 6	T (eF)	70.0000
1 pts.	FHT	0.160000
SF No. 7	T (eF)	70.0000
1 pts.	k (B/h-lbf)	0.400000
SF No. 8	T (eF)	70.0000
1 pts.	FHT	0.160000
SF No. 9	T (eF)	70.0000
1 pts.	Rho (lb/cf)	145.000
SF No. 10	T (eF)	70.0000
1 pts.	FHT	0.156000
SF No. 11	T (eF)	70.0000
1 pts.	k (B/h-lbf)	0.920000
SF No. 12	T (eF)	70.0000
1 pts.	Cp (B/lbf)	0.156000
SF No. 13	T (eF)	70.0000
1 pts.	Rho (lb/cf)	490.000
SF No. 14	T (eF)	70.0000
1 pts.	Cv (B/lbf)	0.120000
SF No. 15	T (eF)	70.0000
1 pts.	k (B/h-lbf)	27.0000
SF No. 16	T (eF)	70.0000
1 pts.	Cp (B/lbf)	0.120000
SF No. 17	T (eF)	70.0000
1 pts.	Rho (lb/cf)	100.000
SF No. 18	T (eF)	70.0000
1 pts.	Cv (B/lbf)	0.200000

SF No. 19 T (sf) 70.0000  
1 pts. K (B/h-sf) 0.290000

SF No. 20 T (sf) 70.0000  
1 pts. Cp (B/lbsf) 0.200000

SF No. 21 X (hrs) 0.000000  
1 pts. PRX 0.950000

## 9. Namelist NAME1 Input (\*) or Default Values: 9 NAMELIST

```

IPOF * -1 IPO 0 IPOCFM * -1 IPOCHK * -1 IPODN 1 IPODND 1 IPOPCV * -1 IPOHP 1
IPOF 1 IPOPA * -1 IPOPI * -1 IPOPT7 * -1 IPOGLT * -1 IPOQP 1 IPOV 1 IPOVI * -1
IPON * -1 IPONC * -1 IPONV * -1 IPOYMF * -1 IPOY * -1 IPOY * 5 MKNQIT 100 MxSSIt 30 MMAXKR 15
NSTPMX * 50000 NSTPOP 1 IPTV 0 IPPA 0 IPWCIN 0 IPW 0 IPWV 0 IPWV 0 IPWV 0
IPQILTY 0 IPYMF 0 IFYMPW 0 IPPM 0 IPQP 0 IPSCPM 0 IPWCIF 0 IP 1
IPPA 1 IPWCIN 1 IPDN 1 IPWV 1 IPFCV 1 IPQLTY 1 IPYMF 1 1 1
IPW 1 IPQP 1 IPSCPM 1 IPWCIF 1 IPACPM 1 IPAN 0 IPAP 0

```

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BMTW 18.01600 CLATH 14.69600 CGRAV 0.4169800E-09 CGSCH 1345.430 CMGMT 778.2600
CTHUX 0.1000000E-01 CTRTF 459.6700 DMBIAS 2.000000 EMI 0.3000000E-06 ELO 0.3000000E-07
FACVDE 1.010000 FIMC 1.260000 GNCIFAC 0.300000 GRAT 1.000000 PAC 100000.0
KLBMIN 0.1000000E-24 SHDMIN 0.2500000E-02 Sigma 0.1713000E-08 SSTol 0.1000000E-05 THIAS 560.0000
TRD 1.000000 UMBIAS 100.0000 UGOMIN 0.5000000 VPGOMH 100.0000 WBIAS 1000000.
KACD 0.1000000E-01 KACMN * 0.1000000E-09 XTOL 0.1000000E-09 YMPMIN 0.1000000E-19

```

```

For Wall 1, Path 3, IPT 8, Added Nodes 27 thru 61, Added Paths 47 thru 81
For Wall 2, Path 8, IPT 8, Added Nodes 62 thru 72, Added Paths 82 thru 92
For Wall 3, Path 13, IPT 8, Added Nodes 73 thru 83, Added Paths 93 thru 103
For Wall 4, Path 18, IPT 8, Added Nodes 84 thru 94, Added Paths 104 thru 114
For Wall 5, Path 23, IPT 8, Added Nodes 95 thru 129, Added Paths 115 thru 149
For Wall 6, Path 28, IPT 8, Added Nodes 130 thru 140, Added Paths 150 thru 160
For Wall 7, Path 33, IPT 8, Added Nodes 141 thru 151, Added Paths 161 thru 171
For Wall 8, Path 38, IPT 8, Added Nodes 152 thru 162, Added Paths 172 thru 182

```

## 10. With Walls present, the T-Vector (TF(I), I=1,MV) is:

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77.00000 90.00000 95.00000 104.0000 105.1000 108.0000 122.0000 77.00000 77.00000 77.00000
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WARNING: TFB\*F(X) has precedence over TF for boundary node 5

11. Node Series for Steady State Initialization, 9 series with input and estimated temperatures and paths.  
 Negative path numbers indicate backward paths. Asterisks (\*) indicate parallel paths or boundary node temperatures.

Series 1, 39 Nodes:	1	8	27	28	29	30	31	32	33	34	35	36	37
	38	39	40	41	42	43	44	45	46	47	48	49	50
	51	52	53	54	55	56	57	58	59	60	61	62	63
Input Temps:	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00
	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00
	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	104.00
Estim Temps:	77.00	77.71	78.42	79.13	79.84	80.55	81.26	81.97	82.68	83.39	84.11	84.82	85.53
	86.24	86.95	87.66	88.37	89.08	89.79	90.50	91.21	91.92	92.63	93.34	94.05	94.76
	95.47	96.18	96.89	97.61	98.32	99.03	99.74	100.45	101.16	101.87	102.58	103.29	104.00
40 Paths:	1*	2*	3	47	48	49	50	51	52	53	54	55	56
	61	62	63	64	65	66	67	68	69	70	71	72	73
	78	79	80	81	4*	5*							
Series 2, 15 Nodes:	1	10	42	63	64	65	66	67	68	69	70	71	72
	11	4											
Input Temps:	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00
	77.00	104.00											
Estim Temps:	77.00	78.93	80.86	82.79	84.71	86.64	88.57	90.50	92.43	94.36	96.29	98.21	100.14
	102.07	104.00											
16 Paths:	6*	7*	8	82	83	84	85	86	87	88	89	90	91
Series 3, 15 Nodes:	1	12	73	74	75	76	77	78	79	80	81	82	83
	13	3											
Input Temps:	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00
	77.00	95.00											
Estim Temps:	77.00	78.29	79.57	80.86	82.14	83.43	84.71	86.00	87.29	88.57	89.86	91.14	92.43
	93.71	95.00											
16 Paths:	11*	12*	13	93	94	95	96	97	98	99	100	101	102
Series 4, 15 Nodes:	1	14	84	85	86	87	88	89	90	91	92	93	94
	15	6											
Input Temps:	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00
	77.00	108.00											
Estim Temps:	77.00	79.21	81.43	83.64	85.86	88.07	90.29	92.50	94.71	96.93	99.14	101.36	103.57
	105.79	108.00											
16 Paths:	16*	17*	18	104	105	106	107	108	109	110	111	112	113

Series 5, 39 Nodes:	2	16	95	96	97	98	99	100	101	102	103	104	105
	106	107	108	109	110	111	112	113	114	115	116	117	118
	119	120	121	122	123	124	125	126	127	128	129	130	131
Input Temps:	90.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00
	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00
	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	104.00
Estim Temps:	90.00	90.37	90.74	91.11	91.47	91.84	92.21	92.58	92.95	93.32	93.68	94.05	94.42
	94.79	95.16	95.53	95.89	96.26	96.63	97.00	97.37	97.74	98.11	98.47	98.84	99.21
	99.58	99.95	100.32	100.68	101.05	101.42	101.79	102.16	102.53	102.89	103.26	103.63	104.00
40 Paths:	21*	22*	23	115	116	117	118	119	120	121	122	123	124
	125	126	127	128	129	130	131	132	133	134	135	136	137
	138	139	140	141	142	143	144	145	146	147	148	149	150
Series 6, 15 Nodes:	2	18	130	131	132	133	134	135	136	137	138	139	140
	19	4											
Input Temps:	90.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00
	77.00	104.00											
Estim Temps:	90.00	91.00	92.00	93.00	94.00	95.00	96.00	97.00	98.00	99.00	100.00	101.00	102.00
	103.00	104.00											
16 Paths:	26*	27*	28	150	151	152	153	154	155	156	157	158	159
Series 7, 15 Nodes:	2	20	141	142	143	144	145	146	147	148	149	150	151
	21	1											
Input Temps:	90.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00
	77.00	77.00											
Estim Temps:	90.00	89.07	88.14	87.21	86.29	85.36	84.43	83.50	82.57	81.64	80.71	79.79	78.86
	77.93	77.00											
16 Paths:	31*	32*	33	161	162	163	164	165	166	167	168	169	170
Series 8, 15 Nodes:	2	22	152	153	154	155	156	157	158	159	160	161	162
	23	3											
Input Temps:	90.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00
	77.00	95.00											
Estim Temps:	90.00	90.16	90.71	91.07	91.43	91.79	92.14	92.50	92.86	93.21	93.57	93.93	94.29
	94.64	95.00											
16 Paths:	36*	37*	38	172	173	174	175	176	177	178	179	180	181



Series 9, 5 Nodes: 1 24 25 26 4  
Input Temps: 77.00 77.00 77.00 77.00 104.00  
Exit Temp: 77.00 83.75 90.50 97.25 104.00  
6 Paths: 41\* 42\* 43 44 45\* 46\*

After Steady State Initialization and 10 iterations, the node temperature vector (TF) is:

77.00000	90.00000	95.00000	104.0000	105.1000	108.0000	122.0000	84.35203	96.64379	84.27838
96.91667	82.67840	89.42188	88.54822	96.69596	94.00250	100.0613	95.53439	98.53495	84.88052
82.17854	91.70258	93.30818	81.55412	90.57746	99.60080	84.69903	85.04602	85.39301	85.74000
86.08700	86.43395	86.78098	87.12798	87.47497	87.82196	88.16896	88.51595	88.86294	89.20994
89.55693	89.90392	90.25092	90.59791	90.94490	91.29190	91.63889	91.98588	92.33287	92.67987
93.02686	93.37385	93.72085	94.06784	94.41483	94.76183	95.10882	95.45581	95.80281	96.14980
96.49479	85.33157	86.38476	87.43795	88.49114	89.54433	90.59752	91.65071	92.70391	93.75710
94.81029	95.86348	83.24036	83.80232	84.36427	84.92623	85.48819	86.05014	86.61210	87.17405
87.73601	88.29797	88.85992	89.22720	89.90618	90.58515	91.26413	91.94311	92.62209	93.30107
93.98005	94.65902	95.33800	96.01698	96.17080	96.33910	96.50740	96.67570	96.84400	95.01230
95.18060	95.34890	95.51719	95.68549	95.85379	96.02209	96.19039	96.35869	96.52699	96.69529
96.86359	97.03189	97.20019	97.36849	97.53679	97.70509	97.87338	98.04168	98.20998	98.37828
98.54658	98.71488	98.88318	99.05148	99.21978	99.38808	99.55638	99.72468	99.89298	95.78444
96.03448	96.28453	96.53458	96.78462	97.03467	97.28472	97.53476	97.78481	98.03486	98.28490
84.65545	84.43028	84.20510	83.97993	83.75476	83.52958	83.30441	83.07924	82.85406	82.62889
82.40371	91.83638	91.97018	92.10398	92.23778	92.37158	92.50538	92.63918	92.77298	92.90678
93.04058	93.17438								

12. Initial "Solution Vector" (ZA(J), J=1,NE), NE = 155

(UI) energy, incompressible, (Mn) MCG n moles, (MW) water mass, (UC) energy, compressible, (WP) path mass flow

(UI) 512.7408	(UI) 524.5143	(UI) 439.1250	(UI) 449.3278	(UI) 437.8333	(UI) 443.2773	(UI) 516.6957
(UI) 524.3750	(UI) 521.8344	(UI) 527.5468	(UI) 523.2802	(UI) 526.1082	(UI) 513.2390	(UI) 510.6923
(UI) 445.1185	(UI) 446.4147	(UI) 156.5740	(UI) 0.9032423	(UI) 161.7948	(UI) 1026.136	(UI) 1026.790
(UI) 1027.444	(UI) 1028.098	(UI) 1028.752	(UI) 1029.406	(UI) 1030.060	(UI) 1030.714	(UI) 1031.368
(UI) 1032.022	(UI) 1032.677	(UI) 1033.331	(UI) 1033.985	(UI) 1034.639	(UI) 1035.293	(UI) 1035.947
(UI) 1036.601	(UI) 1037.255	(UI) 1037.909	(UI) 1038.563	(UI) 1039.217	(UI) 1039.871	(UI) 1040.525
(UI) 1041.180	(UI) 1041.834	(UI) 1042.488	(UI) 1043.142	(UI) 1043.796	(UI) 1044.450	(UI) 1045.104
(UI) 1045.758	(UI) 1046.412	(UI) 1047.066	(UI) 1047.720	(UI) 1048.374	(UI) 879.9505	(UI) 881.6509
(UI) 883.3514	(UI) 885.0518	(UI) 886.7523	(UI) 888.4528	(UI) 890.1532	(UI) 891.8537	(UI) 893.5542
(UI) 895.2546	(UI) 896.9551	(UI) 898.6556	(UI) 899.3561	(UI) 899.0566	(UI) 899.7571	(UI) 900.4576
(UI) 881.1306	(UI) 882.0179	(UI) 882.9253	(UI) 883.8326	(UI) 884.7399	(UI) 885.6472	(UI) 886.5545
(UI) 1035.951	(UI) 1037.231	(UI) 1038.511	(UI) 1039.791	(UI) 1041.071	(UI) 1042.351	(UI) 1043.630
(UI) 1044.910	(UI) 1046.190	(UI) 1047.470	(UI) 1048.750	(UI) 1049.030	(UI) 1049.310	(UI) 1049.590
(UI) 1045.259	(UI) 1045.576	(UI) 1045.893	(UI) 1046.211	(UI) 1046.528	(UI) 1046.845	(UI) 1047.162
(UI) 1047.480	(UI) 1047.797	(UI) 1048.114	(UI) 1048.431	(UI) 1048.749	(UI) 1049.066	(UI) 1049.383
(UI) 1049.700	(UI) 1050.018	(UI) 1050.335	(UI) 1050.652	(UI) 1050.969	(UI) 1051.287	(UI) 1051.604
(UI) 1051.921	(UI) 1052.238	(UI) 1052.556	(UI) 1052.873	(UI) 1053.190	(UI) 1053.507	(UI) 1053.825
(UI) 1054.142	(UI) 1054.459	(UI) 1054.776	(UI) 1055.093	(UI) 1055.410	(UI) 1055.727	(UI) 1056.044
(UI) 1048.917	(UI) 1049.388	(UI) 1049.860	(UI) 1050.331	(UI) 1050.802	(UI) 1051.274	(UI) 1051.745
(UI) 1026.054	(UI) 1025.629	(UI) 1025.205	(UI) 1024.780	(UI) 1024.356	(UI) 1023.931	(UI) 1023.507
(UI) 1023.082	(UI) 1022.658	(UI) 1022.233	(UI) 1021.809	(UI) 1021.385	(UI) 1020.960	(UI) 1020.536
(UI) 891.1011	(UI) 891.3171	(UI) 891.5331	(UI) 891.7492	(UI) 891.9652	(UI) 892.1812	(UI) 892.3973
(UI) 892.6133						

Plot output file: cr-ss.plt (UNformatted)

Restart output file: none

In the above input and in the following results, Node, Path, and HTC types are designated as follows:

AC: Active, Compressible	AI: Active, Incompressible	BC: Boundary, Compressible	BI: Boundary, Incompressible
CK: Conduction only	CI: Film condensation, laminar	Cr: Film condensation, ripple	Ct: Film condensation, turb.
CR: Convection or Radiation	FC: Forced Convection	FI: Forced Convection, intern.	FL: Forced Convection, laminar
FT: Forced Convection, turb.	HX: Heat exchanger	MC: CFS active Mass flow	MI: Mass flow, Incompressible
MP: CFS Mass flow (delta P)	MX: Mass flow, condensate	N: Null	NA: Not Applicable
NC: Natural Convection	NK: Natural conduction	NL: Natural conv'n, laminar	Ns: Natural conv'n, sub-lam'r
Nt: Natural conv'n, turbulent	NX: Natural exchange	Rn: general Radiation	RV: Radiation, Vapor/surface
EX: Specified heat flux	Ta: Tagami condensation	Uc: Uchida condensation	VF: CFS Volume flow (delta P)
VZ: CFS Volume flow (delta Z)	WC: Wall, Cylindrical	WH: Wall Head node	WI: Wall, internal node/path
WP: Wall, Planar (slab)	WS: Wall, Spherical	WT: Wall Tail node	XT: specified X/T function

1a...7e: FC/NC by Re/Ra range

Case 1 after step no. 0, time (XA) is 0.000000 hrs, 0 rejected CM steps, next time step is 1.000000E-02 hrs.

Node Results	Node 1 BI	Node 2 BI	Node 3 BI	Node 4 BI	Node 5 BI	Node 6 BI	Node 7 BI	Node 8 BI
Temperature, eF	77.00000	90.00000	95.00000	104.0000	105.1000	108.0000	122.0000	94.35203
Density, lbm/ft**3	7.1000002E-02	7.1000002E-02	7.1000002E-02	7.1000002E-02	7.1000002E-02	7.1000002E-02	7.1000002E-02	145.0000
Node Results	Node 9 WH	Node 10 WT	Node 11 WH	Node 12 WT	Node 13 WH	Node 14 WT	Node 15 WH	Node 16 WT
Temperature, eF	96.84379	84.27838	96.91667	82.67840	89.42188	88.54822	96.69596	94.00250
Density, lbm/ft**3	145.0000	100.0000	100.0000	125.0000	125.0000	145.0000	145.0000	145.0000
Node Results	Node 17 WH	Node 18 WT	Node 19 WH	Node 20 WT	Node 21 WH	Node 22 WT	Node 23 WH	Node 24 AI
Temperature, eF	100.0613	95.52439	96.53495	84.88062	82.17854	91.70258	93.30810	81.55412
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	125.0000	125.0000	490.0000
Node Results	Node 25 AI	Node 26 AI	Node 27 WI	Node 28 WI	Node 29 WI	Node 30 WI	Node 31 WI	Node 32 WI
Temperature, eF	90.57746	99.60080	84.69903	85.04602	85.39301	85.74000	86.08700	86.43399
Density, lbm/ft**3	7.1000002E-02	490.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 33 WI	Node 34 WI	Node 35 WI	Node 36 WI	Node 37 WI	Node 38 WI	Node 39 WI	Node 40 WI
Temperature, eF	86.78098	87.12798	87.47497	87.82196	88.16896	88.51595	88.86294	89.20994
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 41 WI	Node 42 WI	Node 43 WI	Node 44 WI	Node 45 WI	Node 46 WI	Node 47 WI	Node 48 WI
Temperature, eF	89.55693	89.90392	90.25092	90.59791	90.94490	91.29190	91.63889	91.98588
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 49 WI	Node 50 WI	Node 51 WI	Node 52 WI	Node 53 WI	Node 54 WI	Node 55 WI	Node 56 WI
Temperature, eF	92.33287	92.67987	93.02686	93.37385	93.72085	94.06784	94.41483	94.76183
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 57 WI	Node 58 WI	Node 59 WI	Node 60 WI	Node 61 WI	Node 62 WI	Node 63 WI	Node 64 WI
Temperature, eF	95.10882	95.45581	95.80281	96.14980	96.49679	96.84378	97.19077	97.53776
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	100.0000	100.0000	100.0000
Node Results	Node 65 WI	Node 66 WI	Node 67 WI	Node 68 WI	Node 69 WI	Node 70 WI	Node 71 WI	Node 72 WI
Temperature, eF	88.49114	89.54433	90.59752	91.65071	92.70391	93.75710	94.81029	95.86348
Density, lbm/ft**3	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
Node Results	Node 73 WI	Node 74 WI	Node 75 WI	Node 76 WI	Node 77 WI	Node 78 WI	Node 79 WI	Node 80 WI
Temperature, eF	83.24036	83.80232	84.36427	84.92623	85.48819	86.05014	86.61210	87.17405
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000

Node Results	Node 81 WI	Node 82 WI	Node 83 WI	Node 84 WI	Node 85 WI	Node 86 WI	Node 87 WI	Node 88 WI
Temperature, °F	87.73601	88.29797	88.85992	89.22720	89.90618	90.58515	91.26413	91.94311
Density, lbm/ft**3	125.0000	125.0000	125.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 89 WI	Node 90 WI	Node 91 WI	Node 92 WI	Node 93 WI	Node 94 WI	Node 95 WI	Node 96 WI
Temperature, °F	92.62209	93.30107	93.98005	94.65902	95.33800	96.01698	96.69596	97.37493
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 97 WI	Node 98 WI	Node 99 WI	Node 100 WI	Node 101 WI	Node 102 WI	Node 103 WI	Node 104 WI
Temperature, °F	94.50740	94.67570	94.84400	95.01230	95.18060	95.34890	95.51719	95.68549
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 105 WI	Node 106 WI	Node 107 WI	Node 108 WI	Node 109 WI	Node 110 WI	Node 111 WI	Node 112 WI
Temperature, °F	95.85379	96.02209	96.19039	96.35869	96.52699	96.69529	96.86359	97.03189
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 113 WI	Node 114 WI	Node 115 WI	Node 116 WI	Node 117 WI	Node 118 WI	Node 119 WI	Node 120 WI
Temperature, °F	97.20019	97.36849	97.53679	97.70509	97.87338	98.04168	98.20998	98.37828
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 121 WI	Node 122 WI	Node 123 WI	Node 124 WI	Node 125 WI	Node 126 WI	Node 127 WI	Node 128 WI
Temperature, °F	98.54658	98.71488	98.88318	99.05148	99.21978	99.38808	99.55638	99.72468
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 129 WI	Node 130 WI	Node 131 WI	Node 132 WI	Node 133 WI	Node 134 WI	Node 135 WI	Node 136 WI
Temperature, °F	99.89298	99.78444	99.67590	99.56736	99.45882	99.35028	99.24174	99.13320
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 137 WI	Node 138 WI	Node 139 WI	Node 140 WI	Node 141 WI	Node 142 WI	Node 143 WI	Node 144 WI
Temperature, °F	97.53476	97.78481	98.03486	98.28490	98.53495	98.78500	99.03505	99.28510
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 145 WI	Node 146 WI	Node 147 WI	Node 148 WI	Node 149 WI	Node 150 WI	Node 151 WI	Node 152 WI
Temperature, °F	83.75476	83.52958	83.30441	83.07924	82.85406	82.62889	82.40371	82.17854
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	125.0000
Node Results	Node 153 WI	Node 154 WI	Node 155 WI	Node 156 WI	Node 157 WI	Node 158 WI	Node 159 WI	Node 160 WI
Temperature, °F	91.97018	92.10398	92.23778	92.37158	92.50538	92.63918	92.77298	92.90678
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 161 WI	Node 162 WI						
Temperature, °F	93.04058	93.17438						
Density, lbm/ft**3	125.0000	125.0000						

Path Results	Path 1 CR	Path 2 CR	Path 3 WP	Path 4 CR	Path 5 CR	Path 6 CR	Path 7 CR	Path 8 WP
Heat Rate, Btu/hr	-1.132596	-2.698208	-3.830804	-2.603050	-1.227753	-1.121020	-2.662315	-3.783335
HTC, Btu/ft <sup>2</sup> hrF	0.1541 Rn	0.3670 NC	11.04 Ck	0.3637 NC	0.1716 Rn	0.1540 Rn	0.3658 NC	3.592 Ck
Path Results	Path 9 CR	Path 10 CR	Path 11 CR	Path 12 CR	Path 13 WP	Path 14 CR	Path 15 CR	Path 16 CR
Heat Rate, Btu/hr	-2.567849	-1.211485	-0.8706973	-1.913703	-2.784402	-1.868885	-0.9155192	-1.799954
HTC, Btu/ft <sup>2</sup> hrF	0.3625 NC	0.1716 Rn	0.3533 Rn	0.3370 NC	4.955 Ck	0.3350 NC	0.1641 Rn	0.1559 Rn
Path Results	Path 17 CR	Path 18 WP	Path 19 CR	Path 20 CR	Path 21 CR	Path 22 CR	Path 23 WP	Path 24 CR
Heat Rate, Btu/hr	-5.695970	-7.495921	-5.536349	-1.959569	-0.6561612	-1.201862	-1.858024	-1.176459
HTC, Btu/ft <sup>2</sup> hrF	0.4932 NC	11.04 Ck	0.4898 NC	0.1734 Rn	0.1639 Rn	0.3003 NC	11.04 Ck	0.2987 NC
Path Results	Path 25 CR	Path 26 CR	Path 27 CR	Path 28 WP	Path 29 CR	Path 30 CR	Path 31 CR	Path 32 CR
Heat Rate, Btu/hr	-0.6815661	-0.9110907	-1.849423	-2.760555	-1.818670	-0.9418464	0.8188222	1.667295
HTC, Btu/ft <sup>2</sup> hrF	0.1730 Rn	0.1646 Rn	0.3342 NC	11.04 Ck	0.3328 NC	0.1723 Rn	0.1599 Rn	0.3257 NC
Path Results	Path 33 WP	Path 34 CR	Path 35 CR	Path 36 CR	Path 37 CR	Path 38 WP	Path 39 CR	Path 40 CR
Heat Rate, Btu/hr	2.485916	1.692971	0.7929440	-0.2773717	-0.3855895	-0.6629610	-0.3623517	-0.2806091
HTC, Btu/ft <sup>2</sup> hrF	11.04 Ck	0.3269 NC	0.1531 Rn	0.1629 Rn	0.2265 NC	4.955 Ck	0.2260 NC	0.1659 Rn
Path Results	Path 41 CR	Path 42 CR	Path 43 Ck	Path 44 Ck	Path 45 CR	Path 46 CR	Path 47 WI	Path 48 WI
Heat Rate, Btu/hr	-0.6961172	-1.427023	-2.123140	-2.123140	-0.7603139	-1.362826	-3.830804	-3.830804
HTC, Btu/ft <sup>2</sup> hrF	0.1529 Rn	0.3133 NC	0.2353 Ck	0.2353 Ck	0.1728 Rn	0.3098 NC	11.04 Ck	11.04 Ck
Path Results	Path 49 WI	Path 50 WI	Path 51 WI	Path 52 WI	Path 53 WI	Path 54 WI	Path 55 WI	Path 56 WI
Heat Rate, Btu/hr	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804
HTC, Btu/ft <sup>2</sup> hrF	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck
Path Results	Path 57 WI	Path 58 WI	Path 59 WI	Path 60 WI	Path 61 WI	Path 62 WI	Path 63 WI	Path 64 WI
Heat Rate, Btu/hr	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804
HTC, Btu/ft <sup>2</sup> hrF	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck
Path Results	Path 65 WI	Path 66 WI	Path 67 WI	Path 68 WI	Path 69 WI	Path 70 WI	Path 71 WI	Path 72 WI
Heat Rate, Btu/hr	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804
HTC, Btu/ft <sup>2</sup> hrF	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck
Path Results	Path 73 WI	Path 74 WI	Path 75 WI	Path 76 WI	Path 77 WI	Path 78 WI	Path 79 WI	Path 80 WI
Heat Rate, Btu/hr	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804	-3.830804
HTC, Btu/ft <sup>2</sup> hrF	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck
Path Results	Path 81 WI	Path 82 WI	Path 83 WI	Path 84 WI	Path 85 WI	Path 86 WI	Path 87 WI	Path 88 WI
Heat Rate, Btu/hr	-3.830804	-3.783335	-3.783335	-3.783335	-3.783335	-3.783335	-3.783335	-3.783335
HTC, Btu/ft <sup>2</sup> hrF	11.04 Ck	3.592 Ck	3.592 Ck	3.592 Ck	3.592 Ck	3.592 Ck	3.592 Ck	3.592 Ck

Path Results	Path 89 WI	Path 90 WI	Path 91 WI	Path 92 WI	Path 93 WI	Path 94 WI	Path 95 WI	Path 96 WI
Heat Rate, Btu/hr	-3.783335	-3.783335	-3.783335	-3.783335	-2.784402	-2.784402	-2.784402	-2.784402
HTC, Btu/ft <sup>2</sup> hr°F	3.592 Ck	3.592 Ck	3.592 Ck	3.592 Ck	4.955 Ck	4.955 Ck	4.955 Ck	4.955 Ck
Path Results	Path 97 WI	Path 98 WI	Path 99 WI	Path 100 WI	Path 101 WI	Path 102 WI	Path 103 WI	Path 104 WI
Heat Rate, Btu/hr	-2.784402	-2.784402	-2.784402	-2.784402	-2.784402	-2.784402	-2.784402	-7.495921
HTC, Btu/ft <sup>2</sup> hr°F	4.955 Ck	4.955 Ck	4.955 Ck	4.955 Ck	4.955 Ck	4.955 Ck	4.955 Ck	11.04 Ck
Path Results	Path 105 WI	Path 106 WI	Path 107 WI	Path 108 WI	Path 109 WI	Path 110 WI	Path 111 WI	Path 112 WI
Heat Rate, Btu/hr	-7.495921	-7.495921	-7.495921	-7.495921	-7.495921	-7.495921	-7.495921	-7.495921
HTC, Btu/ft <sup>2</sup> hr°F	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck
Path Results	Path 113 WI	Path 114 WI	Path 115 WI	Path 116 WI	Path 117 WI	Path 118 WI	Path 119 WI	Path 120 WI
Heat Rate, Btu/hr	-7.495921	-7.495921	-1.858024	-1.858024	-1.858024	-1.858024	-1.858024	-1.858024
HTC, Btu/ft <sup>2</sup> hr°F	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck
Path Results	Path 121 WI	Path 122 WI	Path 123 WI	Path 124 WI	Path 125 WI	Path 126 WI	Path 127 WI	Path 128 WI
Heat Rate, Btu/hr	-1.858024	-1.858024	-1.858024	-1.858024	-1.858024	-1.858024	-1.858024	-1.858024
HTC, Btu/ft <sup>2</sup> hr°F	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck
Path Results	Path 129 WI	Path 130 WI	Path 131 WI	Path 132 WI	Path 133 WI	Path 134 WI	Path 135 WI	Path 136 WI
Heat Rate, Btu/hr	-1.858024	-1.858024	-1.858024	-1.858024	-1.858024	-1.858024	-1.858024	-1.858024
HTC, Btu/ft <sup>2</sup> hr°F	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck
Path Results	Path 137 WI	Path 138 WI	Path 139 WI	Path 140 WI	Path 141 WI	Path 142 WI	Path 143 WI	Path 144 WI
Heat Rate, Btu/hr	-1.858024	-1.858024	-1.858024	-1.858024	-1.858024	-1.858024	-1.858024	-1.858024
HTC, Btu/ft <sup>2</sup> hr°F	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck
Path Results	Path 145 WI	Path 146 WI	Path 147 WI	Path 148 WI	Path 149 WI	Path 150 WI	Path 151 WI	Path 152 WI
Heat Rate, Btu/hr	-1.858024	-1.858024	-1.858024	-1.858024	-1.858024	-2.760515	-2.760515	-2.760515
HTC, Btu/ft <sup>2</sup> hr°F	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck
Path Results	Path 153 WI	Path 154 WI	Path 155 WI	Path 156 WI	Path 157 WI	Path 158 WI	Path 159 WI	Path 160 WI
Heat Rate, Btu/hr	-2.760515	-2.760515	-2.760515	-2.760515	-2.760515	-2.760515	-2.760515	-2.760515
HTC, Btu/ft <sup>2</sup> hr°F	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck
Path Results	Path 161 WI	Path 162 WI	Path 163 WI	Path 164 WI	Path 165 WI	Path 166 WI	Path 167 WI	Path 168 WI
Heat Rate, Btu/hr	-2.485916	-2.485916	-2.485916	-2.485916	-2.485916	-2.485916	-2.485916	-2.485916
HTC, Btu/ft <sup>2</sup> hr°F	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck	11.04 Ck
Path Results	Path 169 WI	Path 170 WI	Path 171 WI	Path 172 WI	Path 173 WI	Path 174 WI	Path 175 WI	Path 176 WI
Heat Rate, Btu/hr	-2.485916	-2.485916	-2.485916	-0.6629610	-0.6629610	-0.6629610	-0.6629610	-0.6629610
HTC, Btu/ft <sup>2</sup> hr°F	11.04 Ck	11.04 Ck	11.04 Ck	4.955 Ck	4.955 Ck	4.955 Ck	4.955 Ck	4.955 Ck



Path Results	Path 177 WI	Path 178 WI	Path 179 WI	Path 180 WI	Path 181 WI	Path 182 WI
Heat Rate, Btu/hr	-0.6629610	-0.6629610	-0.6629610	-0.6629610	-0.6629610	-0.6629610
HTC, Btu/ft <sup>2</sup> hr°F	4.955	Ck 4.955	Ck 4.955	Ck 4.955	Ck 4.955	Ck 4.955

(WLOOP(I),I=1,2): 0.00000000E+00 0.00000000E+00

CASE ENDED NORMALLY WITH XA.GE.XMAX

NSTP 0 NBL/CTD 0 ITOL 0 JEMAX 0

EMAX 0.00000000 XA 0.00000000 XAC 9.99999975E-03 XC 0.00000000 XACD 9.99999975E-03

\*Solution Vector\* (ZA(J),J=1,NE), NE = 155  
(UI) energy, incompressible, (Mn) NCG n moles, (MW) water mass, (UC) energy, compressible, (WP) path mass flow

NR	Type	Vector	Bias	Delta Z	E	Node/Path
1	UI	0.5127408E+03	0.5278000E+03	0.0000000E+00	0.0000000E+00	8
2	UI	0.5245143E+03	0.5278000E+03	0.0000000E+00	0.0000000E+00	9
3	UI	0.4391250E+03	0.4520833E+03	0.0000000E+00	0.0000000E+00	10
4	UI	0.4493278E+03	0.4520833E+03	0.0000000E+00	0.0000000E+00	11
5	UI	0.4378333E+03	0.4520833E+03	0.0000000E+00	0.0000000E+00	12
6	UI	0.4432773E+03	0.4520833E+03	0.0000000E+00	0.0000000E+00	13
7	UI	0.5166957E+03	0.5278000E+03	0.0000000E+00	0.0000000E+00	14
8	UI	0.5243750E+03	0.5278000E+03	0.0000000E+00	0.0000000E+00	15
9	UI	0.5218364E+03	0.5278000E+03	0.0000000E+00	0.0000000E+00	16
10	UI	0.5275468E+03	0.5278000E+03	0.0000000E+00	0.0000000E+00	17
11	UI	0.5232802E+03	0.5278000E+03	0.0000000E+00	0.0000000E+00	18
12	UI	0.5261062E+03	0.5278000E+03	0.0000000E+00	0.0000000E+00	19
13	UI	0.5132390E+03	0.5278000E+03	0.0000000E+00	0.0000000E+00	20
14	UI	0.5106923E+03	0.5278000E+03	0.0000000E+00	0.0000000E+00	21
15	UI	0.4451185E+03	0.4520833E+03	0.0000000E+00	0.0000000E+00	22
16	UI	0.4464147E+03	0.4520833E+03	0.0000000E+00	0.0000000E+00	23
17	UI	0.1565740E+03	0.1620058E+03	0.0000000E+00	0.0000000E+00	24
18	UI	0.9032423E+00	0.9192513E+00	0.0000000E+00	0.0000000E+00	25
19	UI	0.1617948E+03	0.1620058E+03	0.0000000E+00	0.0000000E+00	26
20	UI	0.1026136E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	27
21	UI	0.1026790E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	28
22	UI	0.1027444E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	29
23	UI	0.1028098E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	30
24	UI	0.1028752E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	31
25	UI	0.1029406E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	32
26	UI	0.1030060E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	33
27	UI	0.1030714E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	34
28	UI	0.1031368E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	35
29	UI	0.1032022E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	36
30	UI	0.1032677E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	37
31	UI	0.1033331E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	38
32	UI	0.1033985E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	39
33	UI	0.1034639E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	40
34	UI	0.1035293E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	41
35	UI	0.1035947E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	42
36	UI	0.1036601E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	43
37	UI	0.1037255E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	44
38	UI	0.1037909E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	45
39	UI	0.1038563E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	46
40	UI	0.1039217E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	47
41	UI	0.1039871E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	48
42	UI	0.1040525E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	49
43	UI	0.1041180E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	50
44	UI	0.1041834E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	51
45	UI	0.1042488E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	52
46	UI	0.1043142E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	53
47	UI	0.1043796E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	54
48	UI	0.1044450E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	55
49	UI	0.1045104E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	56
50	UI	0.1045758E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	57
51	UI	0.1046412E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	58
52	UI	0.1047066E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	59

53	UI	0.1047720E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	60
54	UI	0.1048374E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	61
55	UI	0.8799505E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	62
56	UI	0.8816509E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	63
57	UI	0.8833514E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	64
58	UI	0.8850518E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	65
59	UI	0.8867522E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	66
60	UI	0.8884526E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	67
61	UI	0.8901532E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	68
62	UI	0.8918537E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	69
63	UI	0.8935542E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	70
64	UI	0.8952546E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	71
65	UI	0.8969551E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	72
66	UI	0.8986556E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	73
67	UI	0.8993561E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	74
68	UI	0.8938866E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	75
69	UI	0.8799608E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	76
70	UI	0.8802033E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	77
71	UI	0.8811106E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	78
72	UI	0.8820179E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	79
73	UI	0.8829253E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	80
74	UI	0.8838326E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	81
75	UI	0.8847399E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	82
76	UI	0.8856472E+03	0.9041667E+03	0.0000000E+00	0.0000000E+00	83
77	UI	0.1034671E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	84
78	UI	0.1035951E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	85
79	UI	0.1037231E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	86
80	UI	0.1038511E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	87
81	UI	0.1039791E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	88
82	UI	0.1041071E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	89
83	UI	0.1042351E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	90
84	UI	0.1043630E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	91
85	UI	0.1044910E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	92
86	UI	0.1046190E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	93
87	UI	0.1047470E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	94
88	UI	0.1048750E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	95
89	UI	0.1044307E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	96
90	UI	0.1044624E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	97
91	UI	0.1044942E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	98
92	UI	0.1045259E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	99
93	UI	0.1045576E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	100
94	UI	0.1045893E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	101
95	UI	0.1046211E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	102
96	UI	0.1046528E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	103
97	UI	0.1046845E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	104
98	UI	0.1047162E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	105
99	UI	0.1047480E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	106
100	UI	0.1047797E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	107
101	UI	0.1048114E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	108
102	UI	0.1048431E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	109
103	UI	0.1048749E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	110
104	UI	0.1049066E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	111
105	UI	0.1049383E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	112
106	UI	0.1049700E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	113
107	UI	0.1050018E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	114
108	UI	0.1050335E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	115

109	UI	0.1050652E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	116
110	UI	0.1050969E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	117
111	UI	0.1051287E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	118
112	UI	0.1051606E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	119
113	UI	0.1051921E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	120
114	UI	0.1052238E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	121
115	UI	0.1052556E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	122
116	UI	0.1052873E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	123
117	UI	0.1053190E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	124
118	UI	0.1053507E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	125
119	UI	0.1053825E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	126
120	UI	0.1054142E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	127
121	UI	0.1054459E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	128
122	UI	0.1054776E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	129
123	UI	0.1055093E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	130
124	UI	0.1055410E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	131
125	UI	0.1055727E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	132
126	UI	0.1056044E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	133
127	UI	0.1056361E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	134
128	UI	0.1056678E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	135
129	UI	0.1056995E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	136
130	UI	0.1057312E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	137
131	UI	0.1057629E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	138
132	UI	0.1057946E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	139
133	UI	0.1058263E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	140
134	UI	0.1058580E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	141
135	UI	0.1058897E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	142
136	UI	0.1059214E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	143
137	UI	0.1059531E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	144
138	UI	0.1059848E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	145
139	UI	0.1060165E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	146
140	UI	0.1060482E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	147
141	UI	0.1060799E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	148
142	UI	0.1061116E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	149
143	UI	0.1061433E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	150
144	UI	0.1061750E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	151
145	UI	0.1062067E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	152
146	UI	0.1062384E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	153
147	UI	0.1062701E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	154
148	UI	0.1063018E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	155
149	UI	0.1063335E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	156
150	UI	0.1063652E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	157
151	UI	0.1063969E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	158
152	UI	0.1064286E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	159
153	UI	0.1064603E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	160
154	UI	0.1064920E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	161
155	UI	0.1065237E+04	0.1055600E+04	0.0000000E+00	0.0000000E+00	162

1 cases completed. Elapsed time: 0:00:19

Records in plot output file: 0

Last Page of Output

## Attachment F

### KITTY6 Input and Output Files for the Main Control Room / AEER Transient Thermal Model

#### Attachment F Contents:

##### Description:

##### Page No.:

KITTY6 Input File for the Main Control Room/AEER Transient Thermal Model

F-2

KITTY6 Output File for the Main Control Room/AEER Transient Thermal Model

F-19

Braidwood Control Rm. and AER Transient After a Loss of the VC system

405	709	16	38	0	0	8.	0	0	26	144.	0	0
/NV	NP	NH	NP	NG	NW	LMAX	KCH	IVIP	NSSS	PCF	NQB	NMB
7	0.	.5	1.	2.	4.	6.	8.					
1	4.886E4		77.	-1	25	0	1					/ 5-1 Control Room, A-409
1	2.363E4		77.	-1	26	0	1					/ 5-2 Unit 1 AER, A-401
1	2.2825E4		77.	-1	27	0	1					/ 5-3 Unit 2 AER, A-415
0	0.000E4		00.	-1	00	0	1					/ 5-4 Corridor, A-402
0	0.000E4		00.	-1	00	0	1					/ 5-5 Stairwell A-2
2	77.		0	0								/ 5-6 Turb. Bldg. Offices
0	0.000E4		00.	-1	00	0	1					/ 5-7 Stairwell A-5
0	0.000E4		00.	-1	00	0	1					/ 5-8 East Corridor, A-416
0	0.000E4		00.	-1	00	0	1					/ 5-9 Record Storage Rm., A-405
0	0.000E4		00.	-1	00	0	1					/ 5-10 Toilet, A-411
0	0.000E4		00.	-1	00	0	1					/ 5-11 Unit 2 Computer Rm., A-410
2	105.1		0	0								/ 5-12 Stairwell A-3
2	105.1		0	0								/ 5-13 East Aux. Build. Elevator
0	0.000E4		00.	-1	00	0	1					/ 5-14 Unit 1 Computer Rm., A-408
0	0.000E4		00.	-1	00	0	1					/ 5-15 Record Storage Rm., A-403
0	0.000E4		00.	-1	00	0	1					/ 5-16 Unit 1 Cable Riser, Aux. Bldg.
2	105.1		0	0								/ 5-17 Aux. Bldg. Vent. Cooling Coil Rm. Unit 1
2	105.1		0	0								/ 5-18 Aux. Bldg. Intake Plenum, Unit 1
0	104.		0	0								/ 5-19 Unit 1 VC Intake Plenum
0	0.000E4		00.	-1	00	0	1					/ 5-20 Cntrl Rm. HVAC Rm., Unit 1
0	0.000E4		00.	-1	00	0	1					/ 5-21 Men's Shower & Drying Rm., A-414
0	0.000E4		00.	-1	00	0	1					/ 5-22 Men's Restroom, A-407
0	0.000E4		00.	-1	00	0	1					/ 5-23 Pipe Space Betw A-406 & A-407
0	0.000E4		00.	-1	00	0	1					/ 5-24 Kitchen, A-406
0	0.000E4		00.	-1	00	0	1					/ 5-25 Security Cntrl. Center, A-417
0	0.000E4		00.	-1	00	0	1					/ 5-26 Elect. Shop, A-404
0	0.000E4		00.	-1	00	0	1					/ 5-27 Cntrl Rm. HVAC Rm., Unit 2
0	104.		0	0								/ 5-28 Unit 2 VC Intake Plenum
2	105.1		0	0								/ 5-29 Aux. Bldg. Intake Plenum, Unit 2
2	105.1		0	0								/ 5-30 Aux. Bldg. Vent. Cooling Coil Rm. Unit 2
0	0.000E4		00.	-1	00	0	1					/ 5-31 Unit 2 AER Enclosed Rm.
0	0.000E4		00.	-1	00	0	1					/ 5-32 Unit 2 Cable Riser, Aux. Bldg.
0	0.000E4		00.	-1	00	0	1					/ 5-33 Corridor A-402 Ceiling Space
0	0.000E4		00.	-1	00	0	1					/ 5-34 Corridor A-416 Ceiling Space
0	0.000E4		00.	-1	00	0	1					/ 5-35 Record Stor. Rm. A-405 Ceiling Space
0	0.000E4		00.	-1	00	0	1					/ 5-36 Toilet A-411 Ceiling Space
0	0.000E4		00.	-1	00	0	1					/ 5-37 Unit 2 Computer Rm Ceiling Space
0	0.000E4		00.	-1	00	0	1					/ 5-38 Unit 1 Computer Rm Ceiling Space
0	0.000E4		00.	-1	00	0	1					/ 5-39 Record Stor. Rm. A-403 Ceiling Space
0	0.000E4		00.	-1	00	0	1					/ 5-40 Men's Shower A-414 Ceiling Space
0	0.000E4		00.	-1	00	0	1					/ 5-41 Men's Restroom A-407 Ceiling Space
0	0.000E4		00.	-1	00	0	1					/ 5-42 Kitchen A-406 Ceiling Space
0	0.000E4		00.	-1	00	0	1					/ 5-43 Security Control Center Ceiling Space
0	0.000E4		00.	-1	00	0	1					/ 5-44 Elect. Shop Ceiling Space
0	0.000E4		00.	-1	00	0	1					/ 5-45 Lower CSR Area "D"
0	0.000E4		00.	-1	00	0	1					/ 5-46 Lower CSR Area "E"
0	0.000E4		00.	-1	00	0	1					/ 5-47 Lower CSR Area "B"
0	0.000E4		00.	-1	00	0	1					/ 5-48 Lower CSR Area "P"
1	2.7606E4		90.	-1	35	0	1					/ 5-49 Upper CSR Area "C"
1	2.7606E4		90.	-1	36	0	1					/ 5-50 Upper CSR Area "H"
1	2.2615E4		90.	-1	37	0	1					/ 5-51 Upper CSR Area "B"
1	2.1710E4		90.	-1	38	0	1					/ 5-52 Upper CSR Area "G"
0	0.000E4		00.	-1	00	0	1					/ 5-53 Upper CSR Area "F"
0	0.000E4		00.	-1	00	0	1					/ 5-54 Upper CSR Area "A"
2	162.		0	0								/ 5-55 Ambient Sol-Air
6	0	0	0	5								/ 5-56 Sld Blk Wall Betw 1 & 2
7												/ 5-57
6	0	0	0	5								/ 5-58 Sld Blk Wall Betw 1 & 4
7												/ 5-59
6	0	0	0	5								/ 5-60 Sld Blk Wall Betw 1 & 5
7												/ 5-61
6	0	0	0	9								/ 5-62 Conc Wall Betw 1 & 6
7												/ 5-63
6	0	0	0	5								/ 5-64 Sld Blk Wall Betw 1 & 7
7												/ 5-65
6	0	0	0	5								/ 5-66 Sld Blk Wall Betw 1 & 8
7												/ 5-67
6	0	0	0	5								/ 5-68 Sld Blk Wall Betw 1 & 3
7												/ 5-69
6	0	0	0	5								/ 5-70 Sld Blk Wall Betw 1 & 9
7												/ 5-71
6	0	0	0	5								/ 5-72 Sld Blk Wall Betw 1 & 10
7												/ 5-73
6	0	0	0	5								/ 5-74 Sld Blk Wall Betw 1 & 11
7												/ 5-75
6	0	0	0	5								/ 5-76 Sld Blk Wall Betw 1 & 12

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6	0	0	0	5	/ 5-78 Sld Blk Wall Betw 1 & 13
7					/ 5-79
6	0	0	0	5	/ 5-80 Sld Blk Wall Betw 1 & 14
7					/ 5-81
6	0	0	0	5	/ 5-82 Sld Blk Wall Betw 1 & 15
7					/ 5-83
6	0	0	0	5	/ 5-84 Sld Blk Wall Betw 2 & 15
7					/ 5-85
6	0	0	0	5	/ 5-86 Sld Blk Wall Betw 2 & 16
7					/ 5-87
6	0	0	0	9	/ 5-88 Conc Wall Betw 2 & 17
7					/ 5-89
6	0	0	0	9	/ 5-90 Conc Wall Betw 2 & 18
7					/ 5-91
6	0	0	0	9	/ 5-92 Conc Wall Betw 2 & 19
7					/ 5-93
6	0	0	0	17	/ 5-94 Hlw Blk Wall Betw 2 & 20
7					/ 5-95
6	0	0	0	17	/ 5-96 Hlw Blk Wall Betw 2 & 21
7					/ 5-97
6	0	1	0	17	/ 5-98 Hlw Blk Wall Betw 2 & 22
7					/ 5-99
6	0	0	0	17	/ 5-100 Hlw Blk Wall Betw 2 & 23
7					/ 5-101
6	0	0	0	17	/ 5-102 Hlw Blk Wall Betw 2 & 24
7					/ 5-103
6	0	0	0	17	/ 5-104 Hlw Blk Wall Betw 2 & 4
7					/ 5-105
6	0	0	0	5	/ 5-106 Sld Blk Wall Betw 3 & 8
7					/ 5-107
6	0	0	0	5	/ 5-108 Sld Blk Wall Betw 3 & 25
7					/ 5-109
6	0	0	0	17	/ 5-110 Hlw Blk Wall Betw 3 & 26
7					/ 5-111
6	0	0	0	17	/ 5-112 Hlw Blk Wall Betw 3 & 27
7					/ 5-113
6	0	0	0	9	/ 5-114 Conc Wall Betw 3 & 28
7					/ 5-115
6	0	0	0	9	/ 5-116 Conc Wall Betw 3 & 29
7					/ 5-117
6	0	0	0	9	/ 5-118 Conc Wall Betw 3 & 30
7					/ 5-119
6	0	0	✓	5	/ 5-120 Sld Blk Wall Betw 3 & 31
7					/ 5-121
6	0	0	0	5	/ 5-122 Sld Blk Wall Betw 3 & 32
7					/ 5-123
6	0	0	0	5	/ 5-124 Sld Blk Wall Betw 3 & 9
7					/ 5-125
6	0	0	0	5	/ 5-126 Sld Blk Wall Betw 1 & 33
7					/ 5-127
6	0	0	0	5	/ 5-128 Sld Blk Wall Betw 1 & 34
7					/ 5-129
6	0	0	0	5	/ 5-130 Sld Blk Wall Betw 1 & 35
7					/ 5-131
6	0	0	0	5	/ 5-132 Sld Blk Wall Betw 1 & 36
7					/ 5-133
6	0	0	0	5	/ 5-134 Sld Blk Wall Betw 1 & 37
7					/ 5-135
6	0	0	0	5	/ 5-136 Sld Blk Wall Betw 1 & 38
7					/ 5-137
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7					/ 5-139
6	0	0	0	5	/ 5-140 Sld Blk Wall Betw 2 & 39
7					/ 5-141
6	0	0	0	17	/ 5-142 Hlw Blk Wall Betw 2 & 40
7					/ 5-143
6	0	0	0	17	/ 5-144 Hlw Blk Wall Betw 2 & 41
7					/ 5-145
6	0	0	0	17	/ 5-146 Hlw Blk Wall Betw 2 & 42
7					/ 5-147
6	0	0	0	17	/ 5-148 Hlw Blk Wall Betw 2 & 33
7					/ 5-149
6	0	0	0	5	/ 5-150 Sld Blk Wall Betw 3 & 34
7					/ 5-151
6	0	0	0	5	/ 5-152 Sld Blk Wall Betw 3 & 43
7					/ 5-153
6	0	0	0	17	/ 5-154 Hlw Blk Wall Betw 3 & 44
7					/ 5-155
6	0	0	0	5	/ 5-156 Sld Blk Wall Betw 3 & 35
7					/ 5-157
6	0	0	0	13	/ 5-158 Supply Ducts, AER 1

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/ 5-161  
/ 5-162 Not Used  
/ 5-163 Not Used  
/ 5-164 Not Used  
/ 5-165 Not Used  
/ 5-166 Not Used  
/ 5-167 Not Used  
/ 5-168 Not Used  
/ 5-169 Not Used  
/ 5-170 Not Used  
/ 5-171 Not Used  
/ 5-172 Not Used  
/ 5-173 Not Used  
/ 5-174 Not Used  
/ 5-175 Not Used  
/ 5-176 Conc Slab Betw 1 & 49  
/ 5-177  
/ 5-178 Conc Slab Betw 1 & 50  
/ 5-179  
/ 5-180 Conc Slab Betw 1 & 45  
/ 5-181  
/ 5-182 Conc Slab Betw 1 & 46  
/ 5-183  
/ 5-184 Conc Slab Betw 2 & 51  
/ 5-185  
/ 5-186 Conc Slab Betw 2 & 47  
/ 5-187  
/ 5-188 Conc Slab Betw 3 & 52  
/ 5-189  
/ 5-190 Conc Slab Betw 3 & 48  
/ 5-191  
/ 5-192 Not Used  
/ 5-193 Not Used  
/ 5-194 Not Used  
/ 5-195 Not Used  
/ 5-196 Not Used  
/ 5-197 Not Used  
/ 5-198 Not Used  
/ 5-199 Not Used  
/ 5-200 Not Used  
/ 5-201 Door Betw 1 & 2, Face Sheet Adj. to 1  
/ 5-202 Air Space in Door Betw 1 & 2  
/ 5-203 Door Betw 1 & 2, Face Sheet Adj. to 2  
/ 5-204 Door Betw 1 & 5, Face Sheet Adj. to 1  
/ 5-205 Air Space in Door Betw 1 & 5  
/ 5-206 Door Betw 1 & 5, Face Sheet Adj. to 5  
/ 5-207 Door Betw 1 & 6, Face Sheet Adj. to 1  
/ 5-208 Air Space in Door Betw 1 & 6  
/ 5-209 Door Betw 1 & 6, Face Sheet Adj. to 6  
/ 5-210 Door Betw 1 & 3, Face Sheet Adj. to 1  
/ 5-211 Air Space in Door Betw 1 & 3  
/ 5-212 Door Betw 1 & 3, Face Sheet Adj. to 3  
/ 5-213 Door Betw 1 & 9, Face Sheet Adj. to 1  
/ 5-214 Air Space in Door Betw 1 & 9  
/ 5-215 Door Betw 1 & 9, Face Sheet Adj. to 9  
/ 5-216 Door Betw 1 & 10, Face Sheet Adj. to 1  
/ 5-217 Air Space in Door Betw 1 & 10  
/ 5-218 Door Betw 1 & 10, Face Sheet Adj. to 10  
/ 5-219 Door Betw 1 & 11, Face Sheet Adj. to 1  
/ 5-220 Air Space in Door Betw 1 & 11  
/ 5-221 Door Betw 1 & 11, Face Sheet Adj. to 11  
/ 5-222 Door Betw 1 & 14, Face Sheet Adj. to 1  
/ 5-223 Air Space in Door Betw 1 & 14  
/ 5-224 Door Betw 1 & 14, Face Sheet Adj. to 14  
/ 5-225 Door Betw 1 & 15, Face Sheet Adj. to 1  
/ 5-226 Air Space in Door Betw 1 & 15  
/ 5-227 Door Betw 1 & 15, Face Sheet Adj. to 15  
/ 5-228 Door Betw 2 & 16, Face Sheet Adj. to 2  
/ 5-229 Air Space in Door Betw 2 & 16  
/ 5-230 Door Betw 2 & 16, Face Sheet Adj. to 16  
/ 5-231 Door Betw 2 & 20, Face Sheet Adj. to 2  
/ 5-232 Air Space in Door Betw 2 & 20  
/ 5-233 Door Betw 2 & 20, Face Sheet Adj. to 20  
/ 5-234 Door Betw 2 & 4, Face Sheet Adj. to 2  
/ 5-235 Air Space in Door Betw 2 & 4  
/ 5-236 Door Betw 2 & 4, Face Sheet Adj. to 4  
/ 5-237 Door Betw 3 & 8, Face Sheet Adj. to 3  
/ 5-238 Air Space in Door Betw 3 & 8  
/ 5-239 Door Betw 3 & 8, Face Sheet Adj. to 8  
/ 5-240 Door Betw 3 & 26, Face Sheet Adj. to 3

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/ 5-241 Air Space in Door Betw 3 & 26
/ 5-242 Door Betw 3 & 26, Face Sheet Adj. to 26
/ 5-243 Door Betw 3 & 27, Face Sheet Adj. to 3
/ 5-244 Air Space in Door Betw 3 & 27
/ 5-245 Door Betw 3 & 27, Face Sheet Adj. to 27
/ 5-246 Door Betw 3 & 32, Face Sheet Adj. to 3
/ 5-247 Air Space in Door Betw 3 & 32
/ 5-248 Door Betw 3 & 32, Face Sheet Adj. to 32
/ 5-249 Not Used
/ 5-250 Not Used
/ 5-251 AHER 1 Cabinet Volume
/ 5-252 AHER 1 Cabinet Outer Shell, Vert
/ 5-253
/ 5-254 AHER 1 Cabinet Outer Shell, Horz
/ 5-255
/ 5-256 AHER 1 Cabinet Inner Shell
/ 5-257
/ 5-258 AHER 1 Cabinet Mt. Base Struct. Steel
/ 5-259
/ 5-260 AHER 1 Cabinet Misc. Struct. Steel
/ 5-261
/ 5-262 Not Used
/ 5-263 Not Used
/ 5-264 AHER 2 Cabinet Volume
/ 5-265 AHER 2 Cabinet Outer Shell, Vert
/ 5-266
/ 5-267 AHER 2 Cabinet Outer Shell, Horz
/ 5-268
/ 5-269 AHER 2 Cabinet Inner Shell
/ 5-270
/ 5-271 AHER 2 Cabinet Mt. Base Struct. Steel
/ 5-272
/ 5-273 AHER 2 Cabinet Misc. Struct. Steel
/ 5-274
/ 5-275 Not Used
/ 5-276 Not Used
/ 5-277 Cntrl Rm Cabinet Air Volume
/ 5-278 Cntrl Rm Cabinet External 0.25" Plate
/ 5-279
/ 5-280 Cntrl Rm Cabinet Rear Doors and Access Panels
/ 5-281
/ 5-282 Cntrl Rm Cabinet Front Louvered Access Plates
/ 5-283
/ 5-284 Cntrl Rm Cabinet Instrumentation Mass
/ 5-285
/ 5-286 Cntrl Rm Cabinet Top Plate
/ 5-287
/ 5-288 Cntrl Rm Cabinet Top Access Covers, Duct Plate
/ 5-289
/ 5-290 Not Used
/ 5-291 Non-Vent CR Cabinets, 1/4" Vertical Plate
/ 5-292
/ 5-293 Non-Vent CR Cabinets, Rear Doors & Access Panels
/ 5-294
/ 5-295 Non-Vent CR Cabinets, Top Plate
/ 5-296
/ 5-297 Cntrl Rm Cabinet Unquantified Steel
/ 5-298
/ 5-299 Not Used
/ 5-300 Not Used
/ 5-301 Conc Wall Betw 51 & 401
/ 5-302
/ 5-303 Conc Wall Betw 51 & 17
/ 5-304
/ 5-305 Conc Wall Betw 51 & 18
/ 5-306
/ 5-307 Conc Wall Betw 51 & 19
/ 5-308
/ 5-309 Conc Wall Betw 51 & 20
/ 5-310
/ 5-311 Conc Wall Betw 51 & 54
/ 5-312
/ 5-313 Conc Wall Betw 51 & 49
/ 5-314
/ 5-315 Conc Wall Betw 49 & 54
/ 5-316
/ 5-317 Conc Wall Betw 49 & 405
/ 5-318
/ 5-319 Conc Wall Betw 49 & 50
/ 5-320
/ 5-321 Sld Blk Wall Betw 49 & 13
/ 5-322

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6	0	0	0	9			/ 5-323 Conc Wall Betw 49 & 38
7							/ 5-324
6	0	0	0	9			/ 5-325 Conc Wall Betw 49 & 401
7							/ 5-326
6	0	0	0	9			/ 5-327 Conc Wall Betw 50 & 405
7							/ 5-328
6	0	0	0	9			/ 5-329 Conc Wall Betw 50 & 53
7							/ 5-330
6	0	0	0	9			/ 5-331 Conc Wall Betw 50 & 52
7							/ 5-332
6	0	0	0	9			/ 5-333 Conc Wall Betw 50 & 402
7							/ 5-334
6	0	0	0	9			/ 5-335 Conc Wall Betw 50 & 37
7							/ 5-336
6	0	0	0	5			/ 5-337 Sld Blk Wall Betw 50 & 12
7							/ 5-338
6	0	0	0	9			/ 5-339 Conc Wall Betw 52 & 53
7							/ 5-340
6	0	0	0	9			/ 5-341 Conc Wall Betw 52 & 27
7							/ 5-342
6	0	0	0	9			/ 5-343 Conc Wall Betw 52 & 28
7							/ 5-344
6	0	0	0	9			/ 5-345 Conc Wall Betw 52 & 29
7							/ 5-346
6	0	0	0	9			/ 5-347 Conc Wall Betw 52 & 30
7							/ 5-348
6	0	0	0	5			/ 5-349 Sld Blk Wall Betw 52 & 31
7							/ 5-350
6	0	0	0	9			/ 5-351 Conc Wall Betw 52 & 402
7							/ 5-352
6	0	0	0	9			/ 5-353 Conc Slab Betw 51 & 65
7							/ 5-354
6	0	0	0	9			/ 5-355 Conc Slab Betw 49 & 55
7							/ 5-356
6	0	0	0	9			/ 5-357 Conc Slab Betw 49 & 403
7							/ 5-358
6	0	0	0	9			/ 5-359 Conc Slab Betw 49 & 404
7							/ 5-360
6	0	0	0	9			/ 5-361 Conc Slab Betw 50 & 55
7							/ 5-362
6	0	0	2	9			/ 5-363 Conc Slab Betw 50 & 403
7							/ 5-364
6	0	0	0	9			/ 5-365 Conc Slab Betw 50 & 404
7							/ 5-366
6	0	0	0	9			/ 5-367 Conc Slab Betw 52 & 55
7							/ 5-368
1	.093	90.	0.	0	0	13	/ 5-369 Door Betw 51 & 54, Face Sheet Adj. to 51
0	2.57	90.	0.	0	0	1	/ 5-370 Air Space in Door Betw 51 & 54
0	.093	90.	0.	0	0	13	/ 5-371 Door Betw 51 & 54, Face Sheet Adj. to 54
1	.120	90.	0.	0	0	13	/ 5-372 Door Betw 49 & 34, Face Sheet Adj. to 49
0	3.32	90.	0.	0	0	1	/ 5-373 Air Space in Door Betw 49 & 54
1	.120	90.	0.	0	0	13	/ 5-374 Door Betw 49 & 54, Face Sheet Adj. to 54
1	.102	90.	0.	0	0	13	/ 5-375 Door Betw 49 & 50, Face Sheet Adj. to 49
1	2.82	90.	0.	0	0	1	/ 5-376 Air Space in Door Betw 49 & 50
1	.102	90.	0.	0	0	13	/ 5-377 Door Betw 49 & 50, Face Sheet Adj. to 50
1	.072	50.	0.	0	0	13	/ 5-378 Door Betw 49 & 50, Face Sheet Adj. to 49
1	1.99	90.	0.	0	0	1	/ 5-379 Air Space in Door Betw 49 & 50
1	.072	90.	0.	0	0	13	/ 5-380 Door Betw 49 & 50, Face Sheet Adj. to 50
1	.102	90.	0.	0	0	13	/ 5-381 Door Betw 49 & 401, Face Sheet Adj. to 49
0	2.82	90.	0.	0	0	1	/ 5-382 Air Space in Door Betw 49 & 401
0	.102	90.	0.	0	0	13	/ 5-383 Door Betw 49 & 401, Face Sheet Adj. to 401
1	.093	90.	0.	0	0	13	/ 5-384 Door Betw 50 & 53, Face Sheet Adj. to 50
0	2.57	90.	0.	0	0	1	/ 5-385 Air Space in Door Betw 50 & 53
0	.093	90.	0.	0	0	13	/ 5-386 Door Betw 50 & 53, Face Sheet Adj. to 53
1	.102	90.	0.	0	0	13	/ 5-387 Door Betw 50 & 402, Face Sheet Adj. to 50
0	2.82	90.	0.	0	0	1	/ 5-388 Air Space in Door Betw 50 & 402
0	.102	90.	0.	0	0	13	/ 5-389 Door Betw 50 & 402, Face Sheet Adj. to 402
1	.093	90.	0.	0	0	13	/ 5-390 Door Betw 52 & 53, Face Sheet Adj. to 52
0	2.57	90.	0.	0	0	1	/ 5-391 Air Space in Door Betw 52 & 53
0	.093	90.	0.	0	0	13	/ 5-392 Door Betw 52 & 53, Face Sheet Adj. to 53
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0							/ 5-394 Not Used
0							/ 5-395 Not Used
0							/ 5-396 Not Used
0							/ 5-397 Not Used
0							/ 5-398 Not Used
0							/ 5-399 Not Used
0							/ 5-400 Not Used
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0	90.0		0	0			/ 5-402 Upper CSR Area "J"
2	122.0		0	0			/ 5-403 AUX Bldg Exhaust Tunnel
2	122.0		0	0			/ 5-404 AUX. Bldg Tank Filter Unit

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2	104.0	0	0		
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2	57	2	2	258.8	
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0	75	11	2	256.8	
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2	1	76	1	115.	
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0	85	15	2	150.4	
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2	2	86	1	95.9	
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0	87	16	2	95.9	
2	2	88	2	243.4	

/ 5-405 Turb. Bldg Operating Floor  
 / 6-1 WV To Sur Rad Betw 1 & 56  
 / 6-2 NC Betw 1 & 56  
 / 6-3 Cnd Betw 56 & 57  
 / 6-4 NC Betw 57 & 2  
 / 6-5 WV To Sur Rad Betw 57 & 2  
 / 6-6 WV To Sur Rad Betw 1 & 58  
 / 6-7 NC Betw 1 & 58  
 / 6-8 Cnd Betw 58 & 59  
 / 6-9 NC Betw 59 & 4  
 / 6-10 WV To Sur Rad Betw 59 & 4  
 / 6-11 WV To Sur Rad Betw 1 & 60  
 / 6-12 NC Betw 1 & 60  
 / 6-13 Cnd Betw 60 & 61  
 / 6-14 NC Betw 61 & 5  
 / 6-15 WV To Sur Rad Betw 61 & 5  
 / 6-16 WV To Sur Rad Betw 1 & 62  
 / 6-17 NC Betw 1 & 62  
 / 6-18 Cnd Betw 62 & 63  
 / 6-19 NC Betw 63 & 6  
 / 6-20 WV To Sur Rad Betw 63 & 6  
 / 6-21 WV To Sur Rad Betw 1 & 64  
 / 6-22 NC Betw 1 & 64  
 / 6-23 Cnd Betw 64 & 65  
 / 6-24 NC Betw 65 & 7  
 / 6-25 WV To Sur Rad Betw 65 & 7  
 / 6-26 WV To Sur Rad Betw 1 & 66  
 / 6-27 NC Betw 1 & 66  
 / 6-28 Cnd Betw 66 & 67  
 / 6-29 NC Betw 67 & 6  
 / 6-30 WV To Sur Rad Betw 67 & 8  
 / 6-31 WV To Sur Rad Betw 1 & 68  
 / 6-32 NC Betw 1 & 68  
 / 6-33 Cnd Betw 68 & 69  
 / 6-34 NC Betw 69 & 3  
 / 6-35 WV To Sur Rad Betw 69 & 3  
 / 6-36 WV To Sur Rad Betw 1 & 70  
 / 6-37 NC Betw 1 & 70  
 / 6-38 Cnd Betw 70 & 71  
 / 6-39 NC Betw 71 & 9  
 / 6-40 WV To Sur Rad Betw 71 & 9  
 / 6-41 WV To Sur Rad Betw 1 & 72  
 / 6-42 NC Betw 1 & 72  
 / 6-43 Cnd Betw 72 & 73  
 / 6-44 NC Betw 73 & 10  
 / 6-45 WV To Sur Rad Betw 73 & 10  
 / 6-46 WV To Sur Rad Betw 1 & 74  
 / 6-47 NC Betw 1 & 74  
 / 6-48 Cnd Betw 74 & 75  
 / 6-49 NC Betw 75 & 11  
 / 6-50 WV To Sur Rad Betw 75 & 11  
 / 6-51 WV To Sur Rad Betw 1 & 76  
 / 6-52 NC Betw 1 & 76  
 / 6-53 Cnd Betw 76 & 77  
 / 6-54 NC Betw 77 & 12  
 / 6-55 WV To Sur Rad Betw 77 & 12  
 / 6-56 WV To Sur Rad Betw 1 & 78  
 / 6-57 NC Betw 1 & 78  
 / 6-58 Cnd Betw 78 & 79  
 / 6-59 NC Betw 79 & 13  
 / 6-60 WV To Sur Rad Betw 79 & 13  
 / 6-61 WV To Sur Rad Betw 1 & 80  
 / 6-62 NC Betw 1 & 80  
 / 6-63 Cnd Betw 80 & 81  
 / 6-64 NC Betw 81 & 14  
 / 6-65 WV To Sur Rad Betw 81 & 14  
 / 6-66 WV To Sur Rad Betw 1 & 82  
 / 6-67 NC Betw 1 & 82  
 / 6-68 Cnd Betw 82 & 83  
 / 6-69 NC Betw 83 & 15  
 / 6-70 WV To Sur Rad Betw 83 & 15  
 / 6-71 WV To Sur Rad Betw 2 & 84  
 / 6-72 NC Betw 2 & 84  
 / 6-73 Cnd Betw 84 & 85  
 / 6-74 NC Betw 85 & 15  
 / 6-75 WV To Sur Rad Betw 85 & 15  
 / 6-76 WV To Sur Rad Betw 2 & 86  
 / 6-77 NC Betw 2 & 86  
 / 6-78 Cnd Betw 86 & 87  
 / 6-79 NC Betw 87 & 16  
 / 6-80 WV To Sur Rad Betw 87 & 16  
 / 6-81 WV To Sur Rad Betw 2 & 88

2	2	88	1	243.4		/ 6-82 NC Betw 2 & 88
8	88	89	36	243.4	3.0	/ 6-83 Cnd Betw 88 & 89
2	89	17	1	243.4		/ 6-84 NC Betw 89 & 17
2	89	17	2	243.4		/ 6-85 WV To Sur Rad Betw 89 & 17
2	2	90	2	315.		/ 6-86 WV To Sur Rad Betw 2 & 90
2	2	90	1	315.		/ 6-87 NC Betw 2 & 90
8	90	91	36	315.	3.0	/ 6-88 Cnd Betw 90 & 91
2	91	18	1	315.		/ 6-89 NC Betw 91 & 18
2	91	18	2	315.		/ 6-90 WV To Sur Rad Betw 91 & 18
2	2	92	2	90.		/ 6-91 WV To Sur Rad Betw 2 & 92
2	2	92	1	90.		/ 6-92 NC Betw 2 & 92
8	92	93	18	90.	1.5	/ 6-93 Cnd Betw 92 & 93
0	93	19	1	90.		/ 6-94 NC Betw 93 & 19
0	93	19	2	90.		/ 6-95 WV To Sur Rad Betw 93 & 19
2	2	94	2	511.1		/ 6-96 WV To Sur Rad Betw 2 & 94
2	2	94	1	511.1		/ 6-97 NC Betw 2 & 94
8	94	95	1	511.1	.125	/ 6-98 Cnd Betw 94 & 95
0	95	20	1	511.1		/ 6-99 NC Betw 95 & 20
0	95	20	2	511.1		/ 6-100 Rad Betw 95 & 20
2	2	96	2	49.5		/ 6-101 WV To Sur Rad Betw 2 & 96
2	2	96	1	49.5		/ 6-102 NC Betw 2 & 96
8	96	97	1	49.5	.125	/ 6-103 Cnd Betw 96 & 97
0	97	21	1	49.5		/ 6-104 NC Betw 97 & 21
0	97	21	2	49.5		/ 6-105 WV To Sur Rad Betw 97 & 21
2	2	98	2	83.6		/ 6-106 WV To Sur Rad Betw 2 & 98
2	2	98	1	83.6		/ 6-107 NC Betw 2 & 98
8	98	99	1	83.6	.125	/ 6-108 Cnd Betw 98 & 99
0	99	22	1	83.6		/ 6-109 NC Betw 99 & 22
0	99	22	2	83.6		/ 6-110 WV To Sur Rad Betw 99 & 22
2	2	100	2	22.6		/ 6-111 WV To Sur Rad Betw 2 & 100
2	2	100	1	22.6		/ 6-112 NC Betw 2 & 100
8	100	101	1	22.6	.125	/ 6-113 Cnd Betw 100 & 101
0	101	23	1	22.6		/ 6-114 NC Betw 101 & 23
0	101	23	2	22.6		/ 6-115 WV To Sur Rad Betw 101 & 23
2	2	102	2	152.2		/ 6-116 WV To Sur Rad Betw 2 & 102
2	2	102	1	152.2		/ 6-117 NC Betw 2 & 102
8	102	103	1	152.2	.125	/ 6-118 Cnd Betw 102 & 103
0	103	24	1	152.2		/ 6-119 NC Betw 103 & 2
0	103	24	2	152.2		/ 6-120 WV To Sur Rad Betw 103 & 2
2	2	104	2	23.9		/ 6-121 WV To Sur Rad Betw 2 & 104
2	2	104	1	23.9		/ 6-122 NC Betw 2 & 104
8	104	105	1	23.9	.125	/ 6-123 Cnd Betw 104 & 105
0	105	4	1	23.9		/ 6-124 NC Betw 105 & 4
0	105	4	2	23.9		/ 6-125 WV To Sur Rad Betw 105 & 4
2	3	106	2	28.5		/ 6-126 WV To Sur Rad Betw 3 & 106
2	3	106	1	28.5		/ 6-127 NC Betw 3 & 106
8	106	107	6	28.5	.48	/ 6-128 Cnd Betw 106 & 107
0	107	8	1	28.5		/ 6-129 NC Betw 107 & 8
0	107	8	2	28.5		/ 6-130 WV To Sur Rad Betw 107 & 8
2	3	108	2	158.8		/ 6-131 WV To Sur Rad Betw 3 & 108
2	3	108	1	158.8		/ 6-132 NC Betw 3 & 108
8	108	109	6	158.8	.48	/ 6-133 Cnd Betw 108 & 109
0	109	25	1	158.8		/ 6-134 NC Betw 109 & 25
0	109	25	2	158.8		/ 6-135 WV To Sur Rad Betw 109 & 25
2	3	110	2	119.9		/ 6-136 WV To Sur Rad Betw 3 & 110
2	3	110	1	119.9		/ 6-137 NC Betw 3 & 110
8	110	111	1	119.9	.125	/ 6-138 Cnd Betw 110 & 111
0	111	26	1	119.9		/ 6-139 NC Betw 111 & 26
0	111	26	2	119.9		/ 6-140 WV To Sur Rad Betw 111 & 26
2	3	112	2	511.4		/ 6-141 WV To Sur Rad Betw 3 & 112
2	3	112	1	511.4		/ 6-142 NC Betw 3 & 112
8	112	113	1	511.4	.125	/ 6-143 Cnd Betw 112 & 113
0	113	27	1	511.4		/ 6-144 NC Betw 113 & 27
0	113	27	2	511.4		/ 6-145 WV To Sur Rad Betw 113 & 27
2	3	114	2	90.		/ 6-146 WV To Sur Rad Betw 3 & 114
2	3	114	1	90.		/ 6-147 NC Betw 3 & 114
8	114	115	18	90.	1.5	/ 6-148 Cnd Betw 114 & 115
0	115	28	1	90.		/ 6-149 NC Betw 115 & 28
0	115	28	2	90.		/ 6-150 WV To Sur Rad Betw 115 & 28
2	3	116	2	315.		/ 6-151 WV To Sur Rad Betw 3 & 116
2	3	116	1	315.		/ 6-152 NC Betw 3 & 116
8	116	117	36	315.	3.0	/ 6-153 Cnd Betw 116 & 117
2	117	29	1	315.		/ 6-154 NC Betw 117 & 29
2	117	29	2	315.		/ 6-155 WV To Sur Rad Betw 117 & 29
2	3	118	2	93.6		/ 6-156 WV To Sur Rad Betw 3 & 118
2	3	118	1	93.6		/ 6-157 NC Betw 3 & 118
8	118	119	36	93.6	3.0	/ 6-158 Cnd Betw 118 & 119
2	119	30	1	93.6		/ 6-159 NC Betw 119 & 30
2	119	30	2	93.6		/ 6-160 WV To Sur Rad Betw 119 & 30
2	3	120	2	231.4		/ 6-161 WV To Sur Rad Betw 3 & 120
2	3	120	1	231.4		/ 6-162 NC Betw 3 & 120
8	120	121	6	231.4	.48	/ 6-163 Cnd Betw 120 & 121

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0	121	31	1	231.4		/ 6-164 NC Betw 121 & 31
0	121	31	2	231.4		/ 6-165 WV To Sur Rad Betw 121 & 31
2	3	122	2	23.		/ 6-166 WV To Sur Rad Betw 3 & 122
2	3	122	1	23.		/ 6-167 NC Betw 3 & 122
8	122	123	6	23.	.48	/ 6-168 Cnd Betw 122 & 123
0	123	32	1	23.		/ 6-169 NC Betw 123 & 32
0	123	32	2	23.		/ 6-170 WV To Sur Rad Betw 123 & 32
2	3	124	2	138.3		/ 6-171 WV To Sur Rad Betw 3 & 124
2	3	124	1	138.3		/ 6-172 NC Betw 3 & 124
8	124	125	6	138.3	.48	/ 6-173 Cnd Betw 124 & 125
0	125	9	1	138.3		/ 6-174 NC Betw 125 & 9
0	125	9	2	138.3		/ 6-175 WV To Sur Rad Betw 125 & 9
2	1	126	2	49.3		/ 6-176 WV To Sur Rad Betw 1 & 126
2	1	126	1	49.3		/ 6-177 NC Betw 1 & 126
8	126	127	6	49.3	.48	/ 6-178 Cnd Betw 126 & 127
0	127	33	1	49.3		/ 6-179 NC Betw 127 & 33
0	127	33	2	49.3		/ 6-180 WV To Sur Rad Betw 127 & 33
2	1	128	2	41.9		/ 6-181 WV To Sur Rad Betw 1 & 128
2	1	128	1	41.9		/ 6-182 NC Betw 1 & 128
8	128	129	6	41.9	.48	/ 6-183 Cnd Betw 128 & 129
0	129	34	1	41.9		/ 6-184 NC Betw 129 & 34
0	129	34	2	41.9		/ 6-185 WV To Sur Rad Betw 129 & 34
2	1	130	2	29.3		/ 6-186 WV To Sur Rad Betw 1 & 130
2	1	130	1	29.3		/ 6-187 NC Betw 1 & 130
8	130	131	6	29.3	.48	/ 6-188 Cnd Betw 130 & 131
0	131	35	1	29.3		/ 6-189 NC Betw 131 & 35
0	131	35	2	29.3		/ 6-190 WV To Sur Rad Betw 131 & 35
2	1	132	2	33.8		/ 6-191 WV To Sur Rad Betw 1 & 132
2	1	132	1	33.8		/ 6-192 NC Betw 1 & 132
8	132	133	6	33.8	.48	/ 6-193 Cnd Betw 132 & 133
0	133	36	1	33.8		/ 6-194 NC Betw 133 & 36
0	133	36	2	33.8		/ 6-195 WV To Sur Rad Betw 133 & 36
2	1	134	2	102.6		/ 6-196 WV To Sur Rad Betw 1 & 134
2	1	134	1	102.6		/ 6-197 NC Betw 1 & 134
8	134	135	6	102.6	.48	/ 6-198 Cnd Betw 134 & 135
0	135	37	1	102.6		/ 6-199 NC Betw 135 & 37
0	135	37	2	102.6		/ 6-200 WV To Sur Rad Betw 135 & 37
2	1	136	2	100.6		/ 6-201 WV To Sur Rad Betw 1 & 136
2	1	136	1	100.6		/ 6-202 NC Betw 1 & 136
8	136	137	6	100.6	.48	/ 6-203 Cnd Betw 136 & 137
0	137	38	1	100.6		/ 6-204 NC Betw 137 & 38
0	137	38	2	100.6		/ 6-205 WV To Sur Rad Betw 137 & 38
2	1	138	2	42.		/ 6-206 WV To Sur Rad Betw 1 & 138
2	1	138	1	42.		/ 6-207 NC Betw 1 & 138
8	138	139	6	42.	.48	/ 6-208 Cnd Betw 138 & 139
0	139	39	1	42.		/ 6-209 NC Betw 139 & 39
0	139	39	2	42.		/ 6-210 WV To Sur Rad Betw 139 & 39
2	2	140	2	50.1		/ 6-211 WV To Sur Rad Betw 2 & 140
2	2	140	1	50.1		/ 6-212 NC Betw 2 & 140
8	140	141	6	50.1	.48	/ 6-213 Cnd Betw 140 & 141
0	141	39	1	50.1		/ 6-214 NC Betw 141 & 2
0	141	39	2	50.1		/ 6-215 WV To Sur Rad Betw 141 & 2
2	2	142	2	26.4		/ 6-216 WV To Sur Rad Betw 2 & 142
2	2	142	1	26.4		/ 6-217 NC Betw 2 & 142
8	142	143	1	26.4	.125	/ 6-218 Cnd Betw 142 & 143
0	143	40	1	26.4		/ 6-219 NC Betw 143 & 40
0	143	40	2	26.4		/ 6-220 WV To Sur Rad Betw 143 & 40
2	2	144	2	44.4		/ 6-221 WV To Sur Rad Betw 2 & 144
2	2	144	1	44.4		/ 6-222 NC Betw 2 & 144
8	144	145	1	44.4	.125	/ 6-223 Cnd Betw 144 & 145
0	145	41	1	44.4		/ 6-224 NC Betw 145 & 41
0	145	41	2	44.4		/ 6-225 WV To Sur Rad Betw 145 & 41
2	2	146	2	92.		/ 6-226 WV To Sur Rad Betw 2 & 146
2	2	146	1	92.		/ 6-227 NC Betw 2 & 146
8	146	147	1	92.	.125	/ 6-228 Cnd Betw 146 & 147
0	147	42	1	92.		/ 6-229 NC Betw 147 & 42
0	147	42	2	92.		/ 6-230 WV To Sur Rad Betw 147 & 42
2	2	148	2	25.		/ 6-231 WV To Sur Rad Betw 2 & 148
2	2	148	1	25.		/ 6-232 NC Betw 2 & 148
8	148	149	1	25.	.125	/ 6-233 Cnd Betw 148 & 149
0	149	33	1	25.		/ 6-234 NC Betw 149 & 33
0	149	33	2	25.		/ 6-235 WV To Sur Rad Betw 149 & 33
2	3	150	2	25.5		/ 6-236 WV To Sur Rad Betw 3 & 150
2	3	150	1	25.5		/ 6-237 NC Betw 3 & 150
8	150	151	6	25.5	.48	/ 6-238 Cnd Betw 150 & 151
0	151	34	1	25.5		/ 6-239 NC Betw 151 & 34
0	151	34	2	25.5		/ 6-240 WV To Sur Rad Betw 151 & 34
2	3	152	2	92.8		/ 6-241 WV To Sur Rad Betw 3 & 152
2	3	152	1	92.8		/ 6-242 NC Betw 3 & 152
8	152	153	6	92.8	.48	/ 6-243 Cnd Betw 152 & 153
0	153	43	1	92.8		/ 6-244 NC Betw 153 & 43
0	153	43	2	92.8		/ 6-245 WV To Sur Rad Betw 153 & 43

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2	3	154	2	75.2	
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2	177	49	9	2629.3	
2	177	49	2	2629.3	
2	1	178	2	2617.7	
2	1	178	3	2617.7	
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2	1	180	5	584.3	
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2	3	190	5	1639.7	
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0	206	5	1	48.	
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2	212	3	2	48.	
2	212	3	1	48.	
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0	215	9	2	21.5	
0	215	9	1	21.5	
2	1	216	2	17.9	
2	1	216	1	17.9	

/	6-246	WV To Sur Rad Betw 3 & 154
/	6-247	NC Betw 3 & 154
/	6-248	Cnd Betw 154 & 155
/	6-249	NC Betw 155 & 44
/	6-250	WV To Sur Rad Betw 155 & 44
/	6-251	WV To Sur Rad Betw 3 & 156
/	6-252	NC Betw 3 & 156
/	6-253	Cnd Betw 156 & 157
/	6-254	NC Betw 157 & 35
/	6-255	WV To Sur Rad Betw 157 & 35
/	6-256	WV To Sur Rad Betw 1 & 176
/	6-257	NC Betw 1 & 176
/	6-258	Cnd Betw 176 & 177
/	6-259	NC Betw 177 & 49
/	6-260	WV To Sur Rad Betw 177 & 49
/	6-261	WV To Sur Rad Betw 1 & 178
/	6-262	NC Betw 1 & 178
/	6-263	Cnd Betw 178 & 179
/	6-264	NC Betw 179 & 50
/	6-265	WV To Sur Rad Betw 179 & 50
/	6-266	WV To Sur Rad Betw 1 & 180
/	6-267	NC Betw 1 & 180
/	6-268	Cnd Betw 180 & 181
/	6-269	NC Betw 181 & 45
/	6-270	WV To Sur Rad Betw 181 & 45
/	6-271	WV To Sur Rad Betw 1 & 182
/	6-272	NC Betw 1 & 182
/	6-273	Cnd Betw 182 & 183
/	6-274	NC Betw 183 & 46
/	6-275	WV To Sur Rad Betw 183 & 46
/	6-276	WV To Sur Rad Betw 2 & 184
/	6-277	NC Betw 2 & 184
/	6-278	Cnd Betw 184 & 185
/	6-279	NC Betw 185 & 51
/	6-280	WV To Sur Rad Betw 185 & 51
/	6-281	WV To Sur Rad Betw 2 & 186
/	6-282	NC Betw 2 & 186
/	6-283	Cnd Betw 186 & 187
/	6-284	NC Betw 187 & 47
/	6-285	WV To Sur Rad Betw 187 & 47
/	6-286	WV To Sur Rad Betw 3 & 188
/	6-287	NC Betw 3 & 188
/	6-288	Cnd Betw 188 & 189
/	6-289	NC Betw 189 & 52
/	6-290	WV To Sur Rad Betw 189 & 52
/	6-291	WV To Sur Rad Betw 3 & 190
/	6-292	NC Betw 3 & 190
/	6-293	Cnd Betw 190 & 191
/	6-294	NC Betw 191 & 48
/	6-295	WV To Sur Rad Betw 191 & 48
/	6-296	WV To Sur Rad Betw 1 & 201
/	6-297	NC Betw 1 & 201
/	6-298	Cnd Betw 201 & 202
/	6-299	Cnd Betw 202 & 203
/	6-300	WV To Sur Rad Betw 203 & 2
/	6-301	NC Betw 203 & 2
/	6-302	WV To Sur Rad Betw 1 & 204
/	6-303	NC Betw 1 & 204
/	6-304	Cnd Betw 204 & 205
/	6-305	Cnd Betw 205 & 206
/	6-306	WV To Sur Rad Betw 206 & 5
/	6-307	NC Betw 206 & 5
/	6-308	WV To Sur Rad Betw 1 & 207
/	6-309	NC Betw 1 & 207
/	6-310	Cnd Betw 207 & 208
/	6-311	Cnd Betw 208 & 209
/	6-312	WV To Sur Rad Betw 209 & 6
/	6-313	NC Betw 209 & 6
/	6-314	WV To Sur Rad Betw 1 & 210
/	6-315	NC Betw 1 & 210
/	6-316	Cnd Betw 210 & 211
/	6-317	Cnd Betw 211 & 212
/	6-318	WV To Sur Rad Betw 212 & 3
/	6-319	NC Betw 212 & 3
/	6-320	WV To Sur Rad Betw 1 & 213
/	6-321	NC Betw 1 & 213
/	6-322	Cnd Betw 213 & 214
/	6-323	Cnd Betw 214 & 215
/	6-324	WV To Sur Rad Betw 215 & 9
/	6-325	NC Betw 215 & 9
/	6-326	WV To Sur Rad Betw 1 & 216
/	6-327	NC Betw 1 & 216

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0	221	11	2	51.	
0	221	11	1	51.	
2	1	222	2	51.	
2	1	222	1	51.	
0	222	223	51.	0.	.068
0	223	224	51.	.068	0.
0	224	14	2	51.	
0	224	14	1	51.	
2	1	225	2	21.5	
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0	233	20	1	20.3	
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2	2	234	1	51.	
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0	236	4	1	51.	
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2	253	2	2	3805.	
2	251	254	13	606.	
2	251	254	3	606.	
8	254	255	1	606.	.0099667
2	255	2	9	606.	
2	255	2	2	606.	
2	251	2	11	67.	
2	251	256	13	1770.	
2	251	256	1	1770.	
8	256	257	1	1770.	.0099667
2	251	258	12	603.	
8	258	259	1	603.	.02419
3	251	260	12	3487.	
8	260	261	1	3487.	.0208333

/	4-328	Cnd	Betw	216	&	217
/	6-329	Cnd	Betw	217	&	218
/	6-330	WV	To	Sur	Rad	Betw 218 & 10
/	6-331	NC	Betw	218	&	10
/	6-332	WV	To	Sur	Rad	Betw 1 & 219
/	6-333	NC	Betw	1	&	219
/	6-334	Cnd	Betw	219	&	220
/	6-335	Cnd	Betw	220	&	221
/	6-336	WV	To	Sur	Rad	Betw 221 & 11
/	6-337	NC	Betw	221	&	11
/	6-338	WV	To	Sur	Rad	Betw 1 & 222
/	6-339	NC	Betw	1	&	222
/	6-340	Cnd	Betw	222	&	223
/	6-341	Cnd	Betw	223	&	224
/	6-342	WV	To	Sur	Rad	Betw 224 & 14
/	6-343	NC	Betw	224	&	14
/	6-344	WV	To	Sur	Rad	Betw 1 & 225
/	6-345	NC	Betw	1	&	225
/	6-346	Cnd	Betw	225	&	226
/	6-347	Cnd	Betw	226	&	227
/	6-348	WV	To	Sur	Rad	Betw 227 & 15
/	6-349	NC	Betw	227	&	15
/	6-350	WV	To	Sur	Rad	Betw 2 & 228
/	6-351	NC	Betw	2	&	228
/	6-352	Cnd	Betw	228	&	229
/	6-353	Cnd	Betw	229	&	230
/	6-354	WV	To	Sur	Rad	Betw 230 & 16
/	6-355	NC	Betw	230	&	16
/	6-356	WV	To	Sur	Rad	Betw 1 & 231
/	6-357	NC	Betw	1	&	231
/	6-358	Cnd	Betw	231	&	232
/	6-359	Cnd	Betw	232	&	233
/	6-360	WV	To	Sur	Rad	Betw 233 & 20
/	6-361	NC	Betw	233	&	20
/	6-362	WV	To	Sur	Rad	Betw 2 & 234
/	6-363	NC	Betw	2	&	234
/	6-364	Cnd	Betw	234	&	235
/	6-365	Cnd	Betw	235	&	236
/	6-366	WV	To	Sur	Rad	Betw 236 & 4
/	6-367	NC	Betw	236	&	4
/	6-368	WV	To	Sur	Rad	Betw 3 & 237
/	6-369	NC	Betw	3	&	237
/	6-370	Cnd	Betw	237	&	238
/	6-371	Cnd	Betw	238	&	239
/	6-372	WV	To	Sur	Rad	Betw 239 & 8
/	6-373	NC	Betw	239	&	8
/	6-374	WV	To	Sur	Rad	Betw 3 & 240
/	6-375	NC	Betw	3	&	240
/	6-376	Cnd	Betw	240	&	241
/	6-377	Cnd	Betw	241	&	242
/	6-378	WV	To	Sur	Rad	Betw 242 & 26
/	6-379	NC	Betw	242	&	26
/	6-380	WV	To	Sur	Rad	Betw 3 & 243
/	6-381	NC	Betw	3	&	243
/	6-382	Cnd	Betw	243	&	244
/	6-383	Cnd	Betw	244	&	245
/	6-384	WV	To	Sur	Rad	Betw 245 & 27
/	6-385	NC	Betw	245	&	27
/	6-386	WV	To	Sur	Rad	Betw 3 & 246
/	6-387	NC	Betw	3	&	246
/	6-388	Cnd	Betw	246	&	247
/	6-389	Cnd	Betw	247	&	248
/	6-390	WV	To	Sur	Rad	Betw 248 & 32
/	6-391	NC	Betw	248	&	32
/	6-392	Sur	To	Sur	Rad	Betw 251 & 252
/	6-393	NC	Betw	251	&	252
/	6-394	Cnd	Betw	252	&	253
/	6-395	NC	Betw	253	&	2
/	6-396	WV	To	Sur	Rad	Betw 253 & 2
/	6-397	Sur	To	Sur	Rad	Betw 251 & 254
/	6-398	NC	Betw	251	&	254
/	6-399	Cnd	Betw	254	&	255
/	6-400	NC	Betw	255	&	2
/	6-401	WV	To	Sur	Rad	Betw 255 & 2
/	6-402	Venr	duced	Air	Ex	Betw 251 & 2
/	6-403	Sur	To	Sur	Rad	Betw 251 & 256
/	6-404	NC	Betw	251	&	256
/	6-405	Cnd	Betw	256	&	257
/	6-406	NC	Betw	251	&	258
/	6-407	Cnd	Betw	258	&	259
/	6-408	NC	Betw	251	&	260
/	6-409	Cnd	Betw	260	&	261

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0					/ 6-410 Not Used
0					/ 6-411 Not Used
2	264	265	13	3780.	/ 6-412 Sur To Sur Rad Betw 264 & 265
2	264	265	1	3780.	/ 6-413 NC Betw 264 & 265
8	265	266	1	3780.	/ 6-414 Cnd Betw 265 & 266
2	266	3	1	3780.	/ 6-415 NC Betw 266 & 3
2	266	3	2	3780.	/ 6-416 MV To Sur Rad Betw 266 & 3
2	264	267	13	576.	/ 6-417 Sur To Sur Rad Betw 264 & 267
2	264	267	3	576.	/ 6-418 NC Betw 264 & 267
8	267	268	1	576.	/ 6-419 Cnd Betw 267 & 268
2	268	3	9	576.	/ 6-420 NC Betw 268 & 3
2	268	3	2	576.	/ 6-421 MV To Sur Rad Betw 268 & 3
2	264	3	16	64.	/ 6-422 Vent Induced Air Ex Betw 264 & 3
2	264	269	13	1400.	/ 6-423 Sur To Sur Rad Betw 264 & 269
2	264	269	1	1400.	/ 6-424 NC Betw 264 & 269
8	269	270	1	1400.	/ 6-425 Cnd Betw 269 & 270
2	264	271	12	573.	/ 6-426 NC Betw 264 & 271
8	271	272	1	573.	/ 6-427 Cnd Betw 271 & 272
2	264	273	12	3359.	/ 6-428 NC Betw 264 & 273
8	273	274	1	3359.	/ 6-429 Cnd Betw 273 & 274
0					/ 6-430 Not Used
0					/ 6-431 Not Used
2	277	278	13	1254.	/ 6-432 Sur To Sur Rad Betw 277 & 278
2	277	278	1	1254.	/ 6-433 NC Betw 277 & 278
8	278	279	1	1254.	/ 6-434 Cnd Betw 278 & 279
2	279	1	1	1254.	/ 6-435 NC Betw 279 & 1
2	279	1	2	1254.	/ 6-436 MV To Sur Rad Betw 279 & 1
2	277	280	13	1559.	/ 6-437 Sur To Sur Rad Betw 277 & 280
2	277	280	1	1559.	/ 6-438 NC Betw 277 & 280
8	280	281	1	1559.	/ 6-439 Cnd Betw 280 & 281
2	281	1	1	1559.	/ 6-440 NC Betw 281 & 1
2	281	1	2	1559.	/ 6-441 MV To Sur Rad Betw 281 & 1
2	277	282	13	136.	/ 6-442 Sur To Sur Rad Betw 277 & 282
2	277	282	1	136.	/ 6-443 NC Betw 277 & 282
8	282	283	1	136.	/ 6-444 Cnd Betw 282 & 283
2	283	1	1	136.	/ 6-445 NC Betw 283 & 1
2	283	1	2	136.	/ 6-446 MV To Sur Rad Betw 283 & 1
2	277	284	13	371.	/ 6-447 Sur To Sur Rad Betw 277 & 284
2	277	284	1	371.	/ 6-448 NC Betw 277 & 284
8	284	285	1	371.	/ 6-449 Cnd Betw 284 & 285
2	285	1	1	371.	/ 6-450 NC Betw 285 & 1
2	285	1	2	371.	/ 6-451 MV To Sur Rad Betw 285 & 1
2	277	286	13	663.	/ 6-452 Sur To Sur Rad Betw 277 & 286
2	277	286	3	663.	/ 6-453 NC Betw 277 & 286
8	286	287	1	663.	/ 6-454 Cnd Betw 286 & 287
2	287	1	9	663.	/ 6-455 NC Betw 287 & 1
2	287	1	2	663.	/ 6-456 MV To Sur Rad Betw 287 & 1
2	277	288	13	33.4	/ 6-457 Sur To Sur Rad Betw 277 & 288
2	277	288	3	33.4	/ 6-458 NC Betw 277 & 288
8	288	289	1	33.4	/ 6-459 Cnd Betw 288 & 289
2	289	1	9	33.4	/ 6-460 NC Betw 289 & 1
2	289	1	2	33.4	/ 6-461 MV To Sur Rad Betw 289 & 1
2	277	1	14	14.14	/ 6-462 Vent Induced Air Ex Betw 277 & 1
2	277	297	12	2425.	/ 6-463 NC Betw 277 & 297
8	297	298	1	2425.	/ 6-464 Cnd Betw 297 & 298
0					/ 6-465 Not Used
0					/ 6-466 Not Used
0					/ 6-467 Not Used
0					/ 6-468 Not Used
0					/ 6-469 Not Used
0					/ 6-470 Not Used
2	51	301	2	301.9	/ 6-471 MV To Sur Rad Betw 51 & 301
2	51	301	1	301.9	/ 6-472 NC Betw 51 & 301
8	301	302	6	301.9	/ 6-473 Cnd Betw 301 & 302
0	302	401	1	301.9	/ 6-474 NC Betw 302 & 401
0	302	401	2	301.9	/ 6-475 MV To Sur Rad Betw 302 & 401
2	51	303	2	238.6	/ 6-476 MV To Sur Rad Betw 51 & 303
2	51	303	1	238.6	/ 6-477 NC Betw 51 & 303
8	303	304	36	238.6	/ 6-478 Cnd Betw 303 & 304
2	304	17	1	238.6	/ 6-479 NC Betw 304 & 17
2	304	17	2	238.6	/ 6-480 MV To Sur Rad Betw 304 & 17
2	51	305	2	301.9	/ 6-481 MV To Sur Rad Betw 51 & 305
2	51	305	1	301.9	/ 6-482 NC Betw 51 & 305
8	305	306	36	301.9	/ 6-483 Cnd Betw 305 & 306
2	306	18	1	301.9	/ 6-484 NC Betw 306 & 18
2	306	18	2	301.9	/ 6-485 MV To Sur Rad Betw 306 & 18
2	51	307	2	86.3	/ 6-486 MV To Sur Rad Betw 51 & 307
2	51	307	1	86.3	/ 6-487 NC Betw 51 & 307
8	307	308	18	86.3	/ 6-488 Cnd Betw 307 & 308
0	308	19	1	86.3	/ 6-489 NC Betw 308 & 19
0	308	19	2	86.3	/ 6-490 MV To Sur Rad Betw 308 & 19
2	51	309	2	508.9	/ 6-491 MV To Sur Rad Betw 51 & 309

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2	51	309	1	508.9			/ 6-492 NC Betw 51 & 309
8	309	310	6	508.9	0.5		/ 6-493 Cnd Betw 309 & 310
0	310	20	1	508.9			/ 6-494 NC Betw 310 & 20
0	310	20	2	508.9			/ 6-495 MV To Sur Rad Betw 310 & 20
2	51	311	2	527.4			/ 6-496 MV To Sur Rad Betw 51 & 311
2	51	311	1	527.4			/ 6-497 NC Betw 51 & 311
8	311	312	6	527.4	0.5		/ 6-498 Cnd Betw 311 & 312
0	312	54	1	527.4			/ 6-499 NC Betw 312 & 54
0	312	54	2	527.4			/ 6-500 MV To Sur Rad Betw 312 & 54
2	51	313	2	293.3			/ 6-501 MV To Sur Rad Betw 51 & 313
2	51	313	1	293.3			/ 6-502 NC Betw 51 & 313
8	313	314	12	293.3	3.0		/ 6-503 Cnd Betw 313 & 314
2	314	49	1	293.3			/ 6-504 NC Betw 314 & 49
2	314	49	2	293.3			/ 6-505 MV To Sur Rad Betw 314 & 49
2	49	315	2	251.6			/ 6-506 MV To Sur Rad Betw 49 & 315
2	49	315	1	251.6			/ 6-507 NC Betw 49 & 315
8	315	316	6	251.6	0.5		/ 6-508 Cnd Betw 315 & 316
0	316	54	1	251.6			/ 6-509 NC Betw 316 & 54
0	316	54	2	251.6			/ 6-510 MV To Sur Rad Betw 316 & 54
2	49	317	2	672.8			/ 6-511 MV To Sur Rad Betw 49 & 317
2	49	317	1	672.8			/ 6-512 NC Betw 49 & 317
8	317	318	42	672.8	3.5		/ 6-513 Cnd Betw 317 & 318
2	318	405	1	672.8			/ 6-514 NC Betw 318 & 405
2	318	405	2	672.8			/ 6-515 MV To Sur Rad Betw 318 & 405
2	49	319	2	580.6			/ 6-516 MV To Sur Rad Betw 49 & 319
2	49	319	1	580.6			/ 6-517 NC Betw 49 & 319
8	319	320	12	580.6	1.0		/ 6-518 Cnd Betw 319 & 320
2	320	50	1	580.6			/ 6-519 NC Betw 320 & 50
2	320	50	2	580.6			/ 6-520 MV To Sur Rad Betw 320 & 50
2	49	321	2	152.7			/ 6-521 MV To Sur Rad Betw 49 & 321
2	49	321	1	152.7			/ 6-522 NC Betw 49 & 321
8	321	322	24	152.7	1.96875		/ 6-523 Cnd Betw 321 & 322
2	322	13	1	152.7			/ 6-524 NC Betw 322 & 13
2	322	13	2	152.7			/ 6-525 MV To Sur Rad Betw 322 & 13
2	49	323	2	53.2			/ 6-526 MV To Sur Rad Betw 49 & 323
2	49	323	1	53.2			/ 6-527 NC Betw 49 & 323
8	323	324	6	53.2	0.5		/ 6-528 Cnd Betw 323 & 324
0	324	38	1	53.2			/ 6-529 NC Betw 324 & 38
0	324	38	2	53.2			/ 6-530 MV To Sur Rad Betw 324 & 38
2	49	325	2	476.4			/ 6-531 MV To Sur Rad Betw 49 & 325
2	49	325	1	476.4			/ 6-532 NC Betw 49 & 325
8	325	326	6	476.4	0.5		/ 6-533 Cnd Betw 325 & 326
0	326	401	1	476.4			/ 6-534 NC Betw 326 & 401
0	326	401	2	476.4			/ 6-535 MV To Sur Rad Betw 326 & 401
2	50	327	2	672.8			/ 6-536 MV To Sur Rad Betw 50 & 327
2	50	327	1	672.8			/ 6-537 NC Betw 50 & 327
8	327	328	42	672.8	3.5		/ 6-538 Cnd Betw 327 & 328
2	328	405	1	672.8			/ 6-539 NC Betw 328 & 405
2	328	405	2	672.8			/ 6-540 MV To Sur Rad Betw 328 & 405
2	50	329	2	257.1			/ 6-541 MV To Sur Rad Betw 50 & 329
2	50	329	1	257.1			/ 6-542 NC Betw 50 & 329
8	329	330	6	257.1	0.5		/ 6-543 Cnd Betw 329 & 330
0	330	53	1	257.1			/ 6-544 NC Betw 330 & 53
0	330	53	2	257.1			/ 6-545 MV To Sur Rad Betw 330 & 53
2	50	331	2	293.3			/ 6-546 MV To Sur Rad Betw 50 & 331
2	50	331	1	293.3			/ 6-547 NC Betw 50 & 331
8	331	332	12	293.3	1.0		/ 6-548 Cnd Betw 331 & 332
2	332	52	1	293.3			/ 6-549 NC Betw 332 & 52
2	332	52	2	293.3			/ 6-550 MV To Sur Rad Betw 332 & 52
2	50	333	2	508.1			/ 6-551 MV To Sur Rad Betw 50 & 333
2	50	333	1	508.1			/ 6-552 NC Betw 50 & 333
8	333	334	6	508.1	0.5		/ 6-553 Cnd Betw 333 & 334
0	334	402	1	508.1			/ 6-554 NC Betw 334 & 402
0	334	402	2	508.1			/ 6-555 MV To Sur Rad Betw 334 & 402
2	50	335	2	58.8			/ 6-556 MV To Sur Rad Betw 50 & 335
2	50	335	1	58.8			/ 6-557 NC Betw 50 & 335
8	335	336	6	58.8	0.5		/ 6-558 Cnd Betw 335 & 336
0	336	37	1	58.8			/ 6-559 NC Betw 336 & 37
0	336	37	2	58.8			/ 6-560 MV To Sur Rad Betw 336 & 37
2	50	337	2	116.3			/ 6-561 MV To Sur Rad Betw 50 & 337
2	50	337	1	116.3			/ 6-562 NC Betw 50 & 337
8	337	338	24	116.3	1.96875		/ 6-563 Cnd Betw 337 & 338
2	338	12	1	116.3			/ 6-564 NC Betw 338 & 12
2	338	12	2	116.3			/ 6-565 MV To Sur Rad Betw 338 & 12
2	52	339	2	527.4			/ 6-566 MV To Sur Rad Betw 52 & 339
2	52	339	1	527.4			/ 6-567 NC Betw 52 & 339
8	339	340	6	527.4	0.5		/ 6-568 Cnd Betw 339 & 340
0	340	53	1	527.4			/ 6-569 NC Betw 340 & 53
0	340	53	2	527.4			/ 6-570 MV To Sur Rad Betw 340 & 53
2	52	341	2	508.9			/ 6-571 MV To Sur Rad Betw 52 & 341
2	52	341	1	508.9			/ 6-572 NC Betw 52 & 341
8	341	342	6	508.9	0.5		/ 6-573 Cnd Betw 341 & 342

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0	342	27	1	508.9		/ 6-574 NC Betw 342 & 27
0	342	27	2	508.9		/ 6-575 WV To Sur Rad Betw 342 & 27
2	52	343	2	86.3		/ 6-576 WV To Sur Rad Betw 52 & 343
2	52	343	1	86.3		/ 6-577 NC Betw 52 & 343
8	343	344	18	86.3	1.5	/ 6-578 Cnd Betw 343 & 344
0	344	28	1	86.3		/ 6-579 NC Betw 344 & 28
0	344	28	2	86.3		/ 6-580 WV To Sur Rad Betw 344 & 28
2	52	345	2	301.9		/ 6-581 WV To Sur Rad Betw 52 & 345
2	52	345	1	301.9		/ 6-582 NC Betw 52 & 345
8	345	346	36	301.9	3.0	/ 6-583 Cnd Betw 345 & 346
2	346	29	1	301.9		/ 6-584 NC Betw 346 & 29
2	346	29	2	301.9		/ 6-585 WV To Sur Rad Betw 346 & 29
2	52	347	2	87.7		/ 6-586 WV To Sur Rad Betw 52 & 347
2	52	347	1	87.7		/ 6-587 NC Betw 52 & 347
8	347	348	36	87.7	3.0	/ 6-588 Cnd Betw 347 & 348
2	348	30	1	87.7		/ 6-589 NC Betw 348 & 30
2	348	30	2	87.7		/ 6-590 WV To Sur Rad Betw 348 & 30
2	52	349	2	238.9		/ 6-591 WV To Sur Rad Betw 52 & 349
2	52	349	1	238.9		/ 6-592 NC Betw 52 & 349
8	349	350	6	238.9	.48	/ 6-593 Cnd Betw 349 & 350
0	350	31	1	238.9		/ 6-594 NC Betw 350 & 31
0	350	31	2	238.9		/ 6-595 WV To Sur Rad Betw 350 & 31
2	52	351	2	217.9		/ 6-596 WV To Sur Rad Betw 52 & 351
2	52	351	1	217.9		/ 6-597 NC Betw 52 & 351
8	351	352	6	217.9	0.5	/ 6-598 Cnd Betw 351 & 352
0	352	402	1	217.9		/ 6-599 NC Betw 352 & 402
0	352	402	2	217.9		/ 6-600 WV To Sur Rad Betw 352 & 402
2	51	353	2	2451.		/ 6-601 WV To Sur Rad Betw 51 & 353
2	51	353	3	2451.		/ 6-602 NC Betw 51 & 353
8	353	354	24	2451.	2.0	/ 6-603 Cnd Betw 353 & 354
2	354	55	15	2451.		/ 6-604 NC Betw 354 & 55
0	354	55	2	2451.		/ 6-605 WV To Sur Rad Betw 354 & 55
2	49	355	2	1349.		/ 6-606 WV To Sur Rad Betw 49 & 355
2	49	355	3	1349.		/ 6-607 NC Betw 49 & 355
8	355	356	24	1349.	2.0	/ 6-608 Cnd Betw 355 & 356
2	356	55	15	1349.		/ 6-609 NC Betw 356 & 55
0	356	55	2	1349.		/ 6-610 WV To Sur Rad Betw 356 & 55
2	49	357	2	705.4		/ 6-611 WV To Sur Rad Betw 49 & 357
2	49	357	3	705.4		/ 6-612 NC Betw 49 & 357
8	357	358	12	705.4	1.0	/ 6-613 Cnd Betw 357 & 358
2	358	403	9	705.4		/ 6-614 NC Betw 358 & 403
2	358	403	2	705.4		/ 6-615 WV To Sur Rad Betw 358 & 403
2	49	359	2	838.8		/ 6-616 WV To Sur Rad Betw 49 & 359
2	49	359	3	838.8		/ 6-617 NC Betw 49 & 359
8	359	360	12	838.8	1.0	/ 6-618 Cnd Betw 359 & 360
2	360	404	9	838.8		/ 6-619 NC Betw 360 & 404
2	360	404	2	838.8		/ 6-620 WV To Sur Rad Betw 360 & 404
2	50	361	2	1349.		/ 6-621 WV To Sur Rad Betw 50 & 361
2	50	361	3	1349.		/ 6-622 NC Betw 50 & 361
8	361	362	24	1349.	2.0	/ 6-623 Cnd Betw 361 & 362
2	362	55	15	1349.		/ 6-624 NC Betw 362 & 55
0	362	55	2	1349.		/ 6-625 WV To Sur Rad Betw 362 & 55
2	50	363	2	705.4		/ 6-626 WV To Sur Rad Betw 50 & 363
2	50	363	3	705.4		/ 6-627 NC Betw 50 & 363
8	363	364	12	705.4	1.0	/ 6-628 Cnd Betw 363 & 364
2	364	403	9	705.4		/ 6-629 NC Betw 364 & 403
2	364	403	2	705.4		/ 6-630 WV To Sur Rad Betw 364 & 403
2	50	365	2	839.5		/ 6-631 WV To Sur Rad Betw 50 & 365
2	50	365	3	839.5		/ 6-632 NC Betw 50 & 365
8	365	366	12	839.5	1.0	/ 6-633 Cnd Betw 365 & 366
2	366	404	9	839.5		/ 6-634 NC Betw 366 & 404
2	366	404	2	839.5		/ 6-635 WV To Sur Rad Betw 366 & 404
2	52	367	2	2352.		/ 6-636 WV To Sur Rad Betw 52 & 367
2	52	367	3	2352.		/ 6-637 NC Betw 52 & 367
8	367	368	24	2352.	2.0	/ 6-638 Cnd Betw 367 & 368
2	368	55	15	2352.		/ 6-639 NC Betw 368 & 55
0	368	55	2	2352.		/ 6-640 WV To Sur Rad Betw 368 & 55
2	51	369	2	18.9		/ 6-641 WV To Sur Rad Betw 51 & 369
2	51	369	1	18.9		/ 6-642 NC Betw 51 & 369
0	369	370	18.9	0.	.068	/ 6-643 Cnd Betw 369 & 370
0	370	371	18.9	0.	.068	/ 6-644 Cnd Betw 370 & 371
0	371	54	2	18.9		/ 6-645 WV To Sur Rad Betw 371 & 54
0	371	54	1	18.9		/ 6-646 NC Betw 371 & 54
2	49	372	2	24.4		/ 6-647 WV To Sur Rad Betw 49 & 372
2	49	372	1	24.4		/ 6-648 NC Betw 49 & 372
0	372	373	24.4	0.	.068	/ 6-649 Cnd Betw 372 & 373
0	373	374	24.4	0.	.068	/ 6-650 Cnd Betw 373 & 374
0	374	54	2	24.4		/ 6-651 WV To Sur Rad Betw 374 & 54
0	374	54	1	24.4		/ 6-652 NC Betw 374 & 54
2	49	375	2	20.8		/ 6-653 WV To Sur Rad Betw 49 & 375
2	49	375	1	20.8		/ 6-654 NC Betw 49 & 375
1	375	376	20.8	0.	.068	/ 6-655 Cnd Betw 375 & 376

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1	376	377	20.8	.068	0.	/ 6-656 Cnd Betw 376 & 377
2	377	50	2	20.8		/ 6-657 WV To Sur Rad Betw 377 & 50
2	377	50	1	20.8		/ 6-658 NC Betw 377 & 50
2	49	378	2	14.6		/ 6-659 WV To Sur Rad Betw 49 & 378
2	49	378	1	14.6		/ 6-660 NC Betw 49 & 378
1	378	379	14.6	0.	.068	/ 6-661 Cnd Betw 378 & 379
1	379	380	14.6	.068	0.	/ 6-662 Cnd Betw 379 & 380
2	380	50	2	14.6		/ 6-663 WV To Sur Rad Betw 380 & 50
2	380	50	1	14.6		/ 6-664 NC Betw 380 & 50
2	49	381	2	20.8		/ 6-665 WV To Sur Rad Betw 49 & 381
2	49	381	1	20.8		/ 6-666 NC Betw 49 & 381
0	381	382	20.8	0.	.068	/ 6-667 Cnd Betw 381 & 382
0	382	383	20.8	.068	0.	/ 6-668 Cnd Betw 382 & 383
0	383	401	2	20.8		/ 6-669 WV To Sur Rad Betw 383 & 401
0	383	401	1	20.8		/ 6-670 NC Betw 383 & 401
2	50	384	2	18.9		/ 6-671 WV To Sur Rad Betw 50 & 384
2	50	384	1	18.9		/ 6-672 NC Betw 50 & 384
0	384	385	18.9	0.	.068	/ 6-673 Cnd Betw 384 & 385
0	385	386	18.9	.068	0.	/ 6-674 Cnd Betw 385 & 386
0	386	53	2	18.9		/ 6-675 WV To Sur Rad Betw 386 & 53
0	386	53	1	18.9		/ 6-676 NC Betw 386 & 53
2	50	387	2	20.8		/ 6-677 WV To Sur Rad Betw 50 & 387
2	50	387	1	20.8		/ 6-678 NC Betw 50 & 387
0	387	388	20.8	0.	.068	/ 6-679 Cnd Betw 387 & 388
0	388	389	20.8	.068	0.	/ 6-680 Cnd Betw 388 & 389
0	389	402	2	20.8		/ 6-681 WV To Sur Rad Betw 389 & 402
0	389	402	1	20.8		/ 6-682 NC Betw 389 & 402
2	52	390	2	18.9		/ 6-683 WV To Sur Rad Betw 52 & 390
2	52	390	1	18.9		/ 6-684 NC Betw 52 & 390
0	390	391	18.9	0.	.068	/ 6-685 Cnd Betw 390 & 391
0	391	392	18.9	.068	0.	/ 6-686 Cnd Betw 391 & 392
0	392	53	2	18.9		/ 6-687 WV To Sur Rad Betw 392 & 53
0	392	53	1	18.9		/ 6-688 NC Betw 392 & 53
2	1	291	2	1369.		/ 6-689 WV To Sur Rad Betw 1 & 291
2	1	291	1	1369.		/ 6-690 NC Betw 1 & 291
8	291	292	1	1369.	.020833	/ 6-691 Cnd Betw 291 & 292
0	292	290	1	1369.		/ 6-692 NC Betw 292 & 290
0	292	290	2	1369.		/ 6-693 WV To Sur Rad Betw 292 & 290
2	1	293	2	1056.		/ 6-694 WV To Sur Rad Betw 1 & 293
2	1	293	1	1056.		/ 6-695 NC Betw 1 & 293
8	293	294	1	1056.	.0087167	/ 6-696 Cnd Betw 293 & 294
0	294	290	1	1056.		/ 6-697 NC Betw 294 & 290
0	294	290	2	1056.		/ 6-698 WV To Sur Rad Betw 294 & 290
2	1	295	2	322.		/ 6-699 WV To Sur Rad Betw 1 & 295
2	1	295	5	322.		/ 6-700 NC Betw 1 & 295
8	295	296	1	322.	.0112083	/ 6-701 Cnd Betw 295 & 296
0	296	290	1	322.		/ 6-702 NC Betw 296 & 290
0	296	290	2	322.		/ 6-703 WV To Sur Rad Betw 296 & 290
2	2	158	2	549.		/ 6-704 WV To Sur Rad Betw 1 & 158
2	2	158	1	549.		/ 6-705 NC Betw 1 & 158
8	158	159	1	549.	.0087167	/ 6-706 Cnd Betw 158 & 159
2	3	160	2	448.		/ 6-707 WV To Sur Rad Betw 1 & 160
2	3	160	1	448.		/ 6-708 NC Betw 1 & 160
8	160	161	1	448.	.0087167	/ 6-709 Cnd Betw 160 & 161
3	0	0	0	0		/ 7A-1 NC Vertical Plate, Turbulent
0.19	0.33					/ 7B-1
4	28	0	0	0		/ 7A-2 WV To Sur Rad (Sur Em. Given in SF 28)
0.15						/ 7B-2 WV Emissivity & Absorbtivity
3	0	1	4	0		/ 7A-3 NC OR Cnd to a Ceiling
0.22	0.33					/ 7B-3
1	0	0	0	0		/ 7A-4 Cnd to a Ceiling
0.001						/ 7B-4 Resistance for Cnd
3	0	-1	6	0		/ 7A-5 NC OR Cnd to a Floor
0.22	0.33					/ 7B-5
1	0	0	0	0		/ 7A-6 Cnd to a Floor
0.001						/ 7B-6 Resistance for Cnd
3	0	-1	8	0		/ 7A-7 NC OR Cnd to a Ceiling
0.22	0.33					/ 7B-7
1	0	0	0	0		/ 7A-8 Cnd to a Ceiling
0.001						/ 7B-8 Resistance for Cnd
3	0	1	10	0		/ 7A-9 NC OR Cnd to a Floor
0.22	0.33					/ 7B-9
1	0	0	0	0		/ 7A-10 Cnd to a Floor
0.001						/ 7B-10 Resistance for Cnd
3	0	0	0	0		/ 7A-11 Bouyancy Driven Heat Ex. From AER 1 Cabinets
21.557	0.4607					/ 7B-11
1	0	0	0	0		/ 7A-12 NC Betw Cabinet Air and Struct. Steel
0.7						/ 7B-12
4	32	0	0	0		/ 7A-13 Surface to Surface Rad
0.5						/ 7B-13 Value of Parameter F
3	0	0	0	0		/ 7A-14 Bouyancy Driven Heat Ex. From CR Cabinets
88.856	0.4607					/ 7B-14

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1	0	0	0	0	/ 7A-15 MTC for Surfaces Exposed to Sol-Air
3	0				/ 7B-15
3	0	0	0	0	/ 7A-16 Bouyancy Driven Heat Ex. From AHER 2 Cabinets
18.43		0.4607			/ 7B-16
1	70.	.071			/ 8-1 Density, Air
1	70.	.17			/ 8-2 Cv, *
1	70.	.016			/ 8-3 k, *
1	70.	.24			/ 8-4 Cp, *
1	70.	125.			/ 8-5 Density, High Density Masonry
1	70.	.16			/ 8-6 Cv, *
1	70.	.4			/ 8-7 k, *
1	70.	.16			/ 8-8 Cp, *
1	70.	145.			/ 8-9 Density, Concrete
1	70.	.156			/ 8-10 Cv, *
1	70.	.92			/ 8-11 k, *
1	70.	.156			/ 8-12 Cp, *
1	70.	490.			/ 8-13 Density, Steel
1	70.	.12			/ 8-14 Cv, *
1	70.	27.			/ 8-15 k, *
1	70.	.12			/ 8-16 Cp, *
1	70.	100.			/ 8-17 Density, Med. Density Masonry
1	70.	.2			/ 8-18 Cv, *
1	70.	.29			/ 8-19 k, *
1	70.	.2			/ 8-20 Cv, *
1	70.	18.1			/ 8-21 Density, Acoustical Tile
1	70.	.32			/ 8-22 Cv, *
1	70.	.0335			/ 8-23 k, *
1	70.	.32			/ 8-24 Cv, *
1	0.	1.12424E5			/ 8-25 Control Room Heat Load, Btu/hr
1	0.	3.2108E4			/ 8-26 Unit 1 AHER Heat Load, Btu/hr
1	0.	2.7282E4			/ 8-27 Unit 2 AHER Heat Load, Btu/hr
1	0.	0.95			/ 8-28 (1-EPSILON_S) OVER 2 (Concrete Wall)
1	0.	1.28433E5			/ 8-29 AHER 1 Cabinet Heat Load
2	1.0E-6	90.	1.0E-4	150.	/ 8-30 Temp. Profile for the Upper Cable Spreading Rooms
2	1.0E-6	104.	1.0E-4	110.	/ 8-31 Temp. Profile for the HVAC Eq. Rooms
1	0.	0.9			/ 8-32 EPSILON_S for steel
1	0.	1.09129E5			/ 8-33 AHER 2 Cabinet Heat Load
1	0.	1.12424E5			/ 8-34 Cntrl. Rm. Cabinet Heat Load
1	0.	3.4404E4			/ 8-35 Upper CSR Area "C" Heat Load
1	0.	3.4404E4			/ 8-36 Upper CSR Area "H" Heat Load
1	0.	3.4404E4			/ 8-37 Upper CSR Area "B" Heat Load
1	0.	3.4404E4			/ 8-38 Upper CSR Area "G" Heat Load

4NAME1 IPONV=-1, IPONC=-1, IPOFCV=-1, IPOQLT=-1, IPOYMF=-1, IPOCHK=-1,  
 IPOCFM=-1, IPOPT7=-1, IPOPI=0, IPOVI=0, KACMN=1.E-10, NSTPMX=50000,  
 IPOF=-1, MPOF=20, IPOPA=-1, IPON=-1, MKSSIT=2000 / 9 NAMELIST

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83.3230 98.9705 84.6806 83.5296 90.0000 90.0000 83.8814 97.3093 90.0000 90.0000
90.0000 90.0000 90.0000 90.0000 84.6806 83.5296 83.3230 98.9705 90.0000 90.0000
  
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94.5074 94.6757 94.8440 95.0123 95.1806 95.3489 95.5172 95.6855 95.8538 96.0221  
 96.1904 96.3587 96.5270 96.6953 96.8636 96.9857 95.3486 85.7115 86.0744 86.4373  
 86.8002 87.1631 87.5260 87.8889 88.2518 88.6147 88.9776 89.3405 89.7034 90.0663  
 90.4292 90.7921 91.1550 91.5179 91.8808 92.2437 92.6066 92.9695 93.3324 93.6952  
 94.0581 94.4210 94.7839 95.1468 95.5097 95.8726 96.2355 96.5984 96.9613 97.3242  
 86.9857 85.3486 85.7115 86.0744 86.4373 86.8002 87.1631 87.5260 87.8889 88.2518  
 88.6147 88.9776 89.3405 89.7034 90.0663 90.4292 90.7921 91.1550 91.5179 91.8808  
 92.2437 92.6066 92.9695 93.3324 93.6952 94.0581 94.4210 94.7839 95.1468 95.5097  
 95.8726 96.2355 96.5984 96.9613 97.3242 90.0000 90.0000 90.0000 90.0000 90.0000  
 91.8364 91.9702 92.1040 92.2378 92.3716 134.9863 135.9051 136.8239 137.7427 138.6615  
 139.5803 140.4991 141.4179 142.3368 143.2556 144.1744 145.0932 146.0120 146.9308 147.8496  
 148.7684 149.6872 150.6060 151.5248 152.4436 153.3624 154.2812 155.2000 134.9863 135.9051  
 136.8239 137.7427 138.6615 139.5803 140.4991 141.4179 142.3368 143.2556 144.1744 145.0932  
 146.0120 146.9308 147.8496 148.7684 149.6872 150.6060 151.5248 152.4436 153.3624 154.2812  
 155.2000 99.2338 99.5542 99.8746 100.1950 100.5154 100.8358 101.1562 101.4766 101.7970  
 102.1174 102.4378 99.2338 99.5542 99.8746 100.1950 100.5154 100.8358 101.1562 101.4766  
 101.7970 102.1174 102.4378 134.9863 135.9051 136.8239 137.7427 138.6615 139.5803 140.4991  
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 100.1950 100.5154 100.8358 101.1562 101.4766 101.7970 102.1174 102.4378 134.9863 135.9051  
 136.8239 137.7427 138.6615 139.5803 140.4991 141.4179 142.3368 143.2556 144.1744 145.0932  
 146.0120 146.9308 147.8496 148.7684 149.6872 150.6060 151.5248 152.4436 153.3624 154.2812  
 155.2000  
 / 10 Wall Temperature Vector

1	176	177	49	/ 11-1
1	176	179	50	/ 11-2
2	184	185	51	/ 11-3
3	188	189	52	/ 11-4
2	88	89	17	/ 11-5
2	90	91	18	/ 11-6
1	76	77	12	/ 11-7
1	78	79	13	/ 11-8
3	116	117	29	/ 11-9
3	118	119	30	/ 11-10
51	303	304	17	/ 11-11
51	305	306	18	/ 11-12
49	317	318	405	/ 11-13
49	321	322	13	/ 11-14
50	327	328	405	/ 11-15
50	337	338	12	/ 11-16
52	345	346	29	/ 11-17
52	347	348	30	/ 11-18
51	353	354	55	/ 11-19
49	355	356	55	/ 11-20
49	357	358	403	/ 11-21
49	359	360	404	/ 11-22
50	361	362	55	/ 11-23
50	363	364	403	/ 11-24
50	365	366	404	/ 11-25
52	367	368	55	/ 11-26

Listing of Input Data for Case 1 from File cr-tr.inp

## 1. Title:

Braidwood Control Rm. and ABER Transient After a Loss of the VC system

## 2. Problem Counters and Options:

Number of Nodes, NV: . . . . .	405	Number of Paths, NP: . . . . .	709
Number of Heat Transfer Functions (HTF), NH: . . . . .	16	Number of Simple Functions (SF), NF: . . . . .	38
Number of Non-condensable Gas (NCG) Species, NG: . . . . .	0	Presence of Water Option (0=no, 1=yes), NW: . . . . .	0
Choking Flow Option (0=off, 1=on), EChoke: . . . . .	0	Record Type 6a Input Option (0=no, 1=yes), IVIP: . . . . .	0
Calculation End Time (hr), XMax: . . . . .	8.000000	Number of Node Series for Initial Steady State, NISS: . . . . .	26
Pressure Conversion Factor, PCF: . . . . .	144.0000		
Number of Internal Heat Gains, NIG: . . . . .	0	Number of Mass Blowdowns, NPB: . . . . .	0

Units for all pressures unless otherwise noted: as specified by PCF psf/units

## 3. Since NG = 0, there are NO Perfect Gas Species present in the model

## 4. Times for 7 Printouts (hr):

0.000000	0.500000	1.000000	2.000000	4.000000	6.000000	8.000000
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## 5. Input data for MV #405 Volume Nodes (IVT = node type):

Node 1: IVT 1 AI V 48860.00 TP 77.00000 GB 0.2046664E-04 IV1=F(X) 25 IV2=F(T) 0 IV3=F(T) 1  
 5-1 Control Room, A-409  
 GB = 1/V is implied by entry -1.

Node 2: IVT 1 AI V 23630.00 TP 77.00000 GB 0.4231909E-04 IV1=F(X) 26 IV2=F(T) 0 IV3=F(T) 1  
 5-2 Unit 1 ARHR, A-401  
 GB = 1/V is implied by entry -1.

Node 3: IVT 1 AI V 22625.00 TP 77.00000 GB 0.4381161E-04 IV1=F(X) 27 IV2=F(T) 0 IV3=F(T) 1  
 5-3 Unit 2 ARHR, A-415  
 GB = 1/V is implied by entry -1.

Node 4: IVT 0 (null) 5-4 Corridor, A-402

Node 5: IVT 0 (null) 5-5 Stairwell A-2

Node 6: IVT 2 BI TFB 77.00000 IV1 F(X) 0 IV2 F(T) 0 5-6 Turb. Bldg. Offices

Node 7: IVT 0 (null) 5-7 Stairwell A-5

Node 8: IVT 0 (null) 5-8 East Corridor, A-416

Node 9: IVT 0 (null) 5-9 Record Storage Rm., A-405

Node 10: IVT 0 (null) 5-10 Toilet, A-411

Node 11: IVT 0 (null) 5-11 Unit 2 Computer Rm., A-410

Node 12: IVT 2 BI TFB 105.1000 IV1 F(X) 0 IV2 F(T) 0 5-12 Stairwell A-3

Node 13: IVT 2 BI TFB 105.1000 IV1 F(X) 0 IV2 F(T) 0 5-13 East Aux. Bldg. Elevator

Node 14: IVT 0 (null) 5-14 Unit 1 Computer Rm., A-406

Node 15: IVT 0 (null) 5-15 Record Storage Rm., A-403

Node 16: IVT 0 (null) 5-16 Unit 1 Cable Riser, Aux. Bldg.

Node 17: IVT 2 BI TFB 105.1000 IV1 F(X) 0 IV2 F(T) 0 5-17 Aux. Bldg. Vent. Cooling Coil Rm. Unit 1

Node 18: IVT 2 BI TFB 105.1000 IV1 F(X) 0 IV2 F(T) 0 5-18 Aux. Bldg. Intake Plenum, Unit 1

Node 19: IVT 0 (null) 5-19 Unit 1 VC Intake Plenum

Node 20: IVT 0 (null) 5-20 Cntrl Rm. HVAC Eq. Rm., Unit 1

Node 21: IVT 0 (null) 5-21 Men's Shower & Drying Rm., A-414

Node 22: IVT 0 (null) 5-22 Men's Restroom, A-407

Node 23: IVT 0 (null) 5-23 Pipe Space Betw A-406 & A-407

Node 24: IVT 0 (null) 5-24 Kitchen, A-406



Node 25: IVT 0 (null) 5-25 Security Cntrl. Center, A-417  
Node 26: IVT 0 (null) 5-26 Elect. Shop, A-404  
Node 27: IVT 0 (null) 5-27 Cntrl Rm. HVAC Eq. Rm., Unit 2  
Node 28: IVT 0 (null) 5-28 Unit 2 VC Intake Plenum  
Node 29: IVT 2 BI TFB 105.1000 IV1 F(X) 0 IV2 F(T) 0 5-29 Aux. Bldg. Intake Plenum, Unit 2  
Node 30: IVT 2 BI TFB 105.1000 IV1 F(X) 0 IV2 F(T) 0 5-30 Aux. Bldg. Vent. Cooling Coil Rm, Unit 2  
Node 31: IVT 0 (null) 5-31 Unit 2 AKEER Enclosed Rm.  
Node 32: IVT 0 (null) 5-32 Unit 2 Cable Riser, Aux. Bldg.  
Node 33: IVT 0 (null) 5-33 Corridor A-402 Ceiling Space  
Node 34: IVT 0 (null) 5-34 Corridor A-406 Ceiling Space  
Node 35: IVT 0 (null) 5-35 Record Stor. Rm. A-405 Ceiling Space  
Node 36: IVT 0 (null) 5-36 Toilet A-411 Ceiling Space  
Node 37: IVT 0 (null) 5-37 Unit 2 Computer Rm Ceiling Space  
Node 38: IVT 0 (null) 5-38 Unit 1 Computer Rm Ceiling Space  
Node 39: IVT 0 (null) 5-39 Record Stor. Rm. A-403 Ceiling Space  
Node 40: IVT 0 (null) 5-40 Men's Shower A-414 Ceiling Space  
Node 41: IVT 0 (null) 5-41 Men's Restroom A-407 Ceiling Space  
Node 42: IVT 0 (null) 5-42 Kitchen A-406 Ceiling Space  
Node 43: IVT 0 (null) 5-43 Security Control Center Ceiling Space  
Node 44: IVT 0 (null) 5-44 Elect. Shop Ceiling Space  
Node 45: IVT 0 (null) 5-45 Lower CSR Area "D"  
Node 46: IVT 0 (null) 5-46 Lower CSR Area "E"  
Node 47: IVT 0 (null) 5-47 Lower CSR Area "B"  
Node 48: IVT 0 (null) 5-48 Lower CSR Area "F"  
Node 49: IVT 1 AI V 27606.00 TF 90.00000 GB 0.3622401E-04 IV1=F(X) 35 IV2=F(T) 0 IV3=F(T) 1  
5-49 Upper CSR Area "C"  
GB = 1/V is implied by entry -1.  
Node 50: IVT 1 AI V 27606.00 TF 90.00000 GB 0.3622401E-04 IV1=F(X) 36 IV2=F(T) 0 IV3=F(T) 1  
5-50 Upper CSR Area "H"  
GB = 1/V is implied by entry -1.

Node 51: IVT 1 AI V 22615.00 TF 90.00000 GB 0.4421844E-04 IV1=F(X) 37 IV2=F(T) 0 IV3=F(T) 1  
 5-51 Upper CSR Area "B"  
 GB = 1/V is implied by entry -1.

Node 52: IVT 1 AI V 21710.00 TF 90.00000 GB 0.4606172E-04 IV1=F(X) 38 IV2=F(T) 0 IV3=F(T) 1  
 5-52 Upper CSR Area "G"  
 GB = 1/V is implied by entry -1.

Node 53: IVT 0 (null) 5-53 Upper CSR Area "F"

Node 54: IVT 0 (null) 5-54 Upper CSR Area "A"

Node 55: IVT 2 EI TFB 162.0000 IV1 F(X) 0 IV2 F(T) 0 5-55 Ambient Sol-Air

Node 56: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 5 5-56 Sld Blk Wall Betw 1 & 2

Node 57: IVT 7 WH 5-57

Node 58: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 5 5-58 Sld Blk Wall Betw 1 & 4

Node 59: IVT 7 WH 5-59

Node 60: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 5 5-60 Sld Blk Wall Betw 1 & 5

Node 61: IVT 7 WH 5-61

Node 62: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-62 Conc Wall Betw 1 & 6

Node 63: IVT 7 WH 5-63

Node 64: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 5 5-64 Sld Blk Wall Betw 1 & 7

Node 65: IVT 7 WH 5-65

Node 66: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 5 5-66 Sld Blk Wall Betw 1 & 8

Node 67: IVT 7 WH 5-67

Node 68: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 7 IV3 F(T) 5 5-68 Sld Blk Wall Betw 1 & 3

Node 69: IVT 7 WH 5-69

Node 70: IVT 6 WT GB 0.0000000 IV1 F(X) 7 IV2 F(D) 0 IV3 F(T) 5 5-70 Sld Blk Wall Betw 1 & 9

Node 71: IVT 7 WH 5-71

Node 72: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 5 5-72 Sld Blk Wall Betw 1 & 10

Node 73: IVT 7 WH 5-73

Node 74: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 5 5-74 Sld Blk Wall Betw 1 & 11

Node 75: IVT 7 WH 5-75

Node 76: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 5 5-76 Sld Blk Wall Betw 1 & 12







Node 161: IVT 7 WH 5-161  
Node 162: IVT 0 (null) 5-162 Not Used  
Node 163: IVT 0 (null) 5-163 Not Used  
Node 164: IVT 0 (null) 5-164 Not Used  
Node 165: IVT 0 (null) 5-165 Not Used  
Node 166: IVT 0 (null) 5-166 Not Used  
Node 167: IVT 0 (null) 5-167 Not Used  
Node 168: IVT 0 (null) 5-168 Not Used  
Node 169: IVT 0 (null) 5-169 Not Used  
Node 170: IVT 0 (null) 5-170 Not Used  
Node 171: IVT 0 (null) 5-171 Not Used  
Node 172: IVT 0 (null) 5-172 Not Used  
Node 173: IVT 0 (null) 5-173 Not Used  
Node 174: IVT 0 (null) 5-174 Not Used  
Node 175: IVT 0 (null) 5-175 Not Used  
Node 176: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-176 Conc Slab Betw 1 & 49  
Node 177: IVT 7 WH 5-177  
Node 178: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-178 Conc Slab Betw 1 & 50  
Node 179: IVT 7 WH 5-179  
Node 180: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-180 Conc Slab Betw 1 & 45  
Node 181: IVT 7 WH 5-181  
Node 182: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-182 Conc Slab Betw 1 & 46  
Node 183: IVT 7 WH 5-183  
Node 184: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-184 Conc Slab Betw 2 & 51  
Node 185: IVT 7 WH 5-185  
Node 186: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-186 Conc Slab Betw 2 & 47  
Node 187: IVT 7 WH 5-187  
Node 188: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-188 Conc Slab Betw 3 & 52



Node 189: IVT 7 WH 5-189

Node 190: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-190 Conc Slab Betw 3 & 48

Node 191: IVT 7 WH 5-191

Node 192: IVT 0 (null) 5-192 Not Used

Node 193: IVT 0 (null) 5-193 Not Used

Node 194: IVT 0 (null) 5-194 Not Used

Node 195: IVT 0 (null) 5-195 Not Used

Node 196: IVT 0 (null) 5-196 Not Used

Node 197: IVT 0 (null) 5-197 Not Used

Node 198: IVT 0 (null) 5-198 Not Used

Node 199: IVT 0 (null) 5-199 Not Used

Node 200: IVT 0 (null) 5-200 Not Used

Node 201: IVT 1 AI V 0.2360000 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-201 Door Betw 1 & 2, Face Sheet Adj. to 1

Node 202: IVT 0 (null) 5-202 Air Space in Door Betw 1 & 2

Node 203: IVT 1 AI V 0.2360000 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-203 Door Betw 1 & 2, Face Sheet Adj. to 2

Node 204: IVT 1 AI V 0.2360000 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-204 Door Betw 1 & 5, Face Sheet Adj. to 1

Node 205: IVT 0 (null) 5-205 Air Space in Door Betw 1 & 5

Node 206: IVT 0 (null) 5-206 Door Betw 1 & 5, Face Sheet Adj. to 5

Node 207: IVT 1 AI V 0.1220000 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-207 Door Betw 1 & 6, Face Sheet Adj. to 1

Node 208: IVT 0 (null) 5-208 Air Space in Door Betw 1 & 6

Node 209: IVT 0 (null) 5-209 Door Betw 1 & 6, Face Sheet Adj. to 6

Node 210: IVT 1 AI V 0.2360000 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-210 Door Betw 1 & 3, Face Sheet Adj. to 1

Node 211: IVT 0 (null) 5-211 Air Space in Door Betw 1 & 3

Node 212: IVT 1 AI V 0.2360000 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-212 Door Betw 1 & 3, Face Sheet Adj. to 3

Node 213: IVT 1 AI V 0.1060000 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-213 Door Betw 1 & 9, Face Sheet Adj. to 1

Node 214: IVT 0 (null) 5-214 Air Space in Door Betw 1 & 9

Node 215: IVT 0 (null) 5-215 Door Betw 1 & 9, Face Sheet Adj. to 9

Node 216: IVT 1 AI V 0.8800000E-01 TF 77.00000 GS 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-216 Door Betw 1 & 10, Face Sheet Adj. to 1

Node 217: IVT 0 (null) 5-217 Air Space in Door Betw 1 & 10

Node 218: IVT 0 (null) 5-218 Door Betw 1 & 10, Face Sheet Adj. to 10

Node 219: IVT 1 AI V 0.2510000 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-219 Door Betw 1 & 11, Face Sheet Adj. to 1

Node 220: IVT 0 (null) 5-220 Air Space in Door Betw 1 & 11

Node 221: IVT 0 (null) 5-221 Door Betw 1 & 11, Face Sheet Adj. to 11

Node 222: IVT 1 AI V 0.2510000 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-222 Door Betw 1 & 14, Face Sheet Adj. to 1

Node 223: IVT 0 (null) 5-223 Air Space in Door Betw 1 & 14

Node 224: IVT 0 (null) 5-224 Door Betw 1 & 14, Face Sheet Adj. to 14

Node 225: IVT 1 AI V 0.1060000 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-225 Door Betw 1 & 15, Face Sheet Adj. to 1

Node 226: IVT 0 (null) 5-226 Air Space in Door Betw 1 & 15

Node 227: IVT 0 (null) 5-227 Door Betw 1 & 15, Face Sheet Adj. to 15

Node 228: IVT 1 AI V 0.8800000E-01 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-228 Door Betw 2 & 16, Face Sheet Adj. to 2

Node 229: IVT 0 (null) 5-229 Air Space in Door Betw 2 & 16

Node 230: IVT 0 (null) 5-230 Door Betw 2 & 16, Face Sheet Adj. to 16

Node 231: IVT 1 AI V 0.1000000 TF 81.60000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-231 Door Betw 2 & 20, Face Sheet Adj. to 2

Node 232: IVT 0 (null) 5-232 Air Space in Door Betw 2 & 20

Node 233: IVT 0 (null) 5-233 Door Betw 2 & 20, Face Sheet Adj. to 20

Node 234: IVT 1 AI V 0.2510000 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-234 Door Betw 2 & 4, Face Sheet Adj. to 2

Node 235: IVT 0 (null) 5-235 Air Space in Door Betw 2 & 4

Node 236: IVT 0 (null) 5-236 Door Betw 2 & 4, Face Sheet Adj. to 4

Node 237: IVT 1 AI V 0.2360000 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-237 Door Betw 3 & 8, Face Sheet Adj. to 3

Node 238: IVT 0 (null) 5-238 Air Space in Door Betw 3 & 8

Node 239: IVT 0 (null) 5-239 Door Betw 3 & 8, Face Sheet Adj. to 8

Node 240: IVT 1 AI V 0.1060000 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-240 Door Betw 3 & 26, Face Sheet Adj. to 3

Node 241: IVT 0 (null) 5-241 Air Space in Door Betw 3 & 26

Node 242: IVT 0 (null) 5-242 Door Betw 3 & 26, Face Sheet Adj. to 26

Node 243: IVT 1 AI V 0.9800000E-01 TF 81.40000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-243 Door Betw 3 & 27, Face Sheet Adj. to 3

Node 244: IVT 0 (null) 5-244 Air Space in Door Betw 3 & 27

Node 245: IVT 0 (null) 5-245 Door Betw 3 & 27, Face Sheet Adj. to 27

Node 246: IVT 1 AI V 0.1020000 TF 77.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-246 Door Betw 3 & 32, Face Sheet Adj. to 3

Node 247: IVT 0 (null) 5-247 Air Space in Door Betw 3 & 32

Node 248: IVT 0 (null) 5-248 Door Betw 3 & 32, Face Sheet Adj. to 32

Node 249: IVT 0 (null) 5-249 Not Used

Node 250: IVT 0 (null) 5-250 Not Used

Node 251: IVT 1 AI V 3955.000 TF 95.00000 GB 0.2528445E-03 IV1=F(X) 29 IV2=F(T) 0 IV3=F(T) 1  
5-251 ASER 1 Cabinet Volume  
GB \* 1/V is implied by entry -1.

Node 252: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 13 5-252 ASER 1 Cabinet Outer Shell, Vert

Node 253: IVT 7 WH 5-253

Node 254: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 13 5-254 ASER 1 Cabinet Outer Shell, Horz

Node 255: IVT 7 WH 5-255

Node 256: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 13 5-256 ASER 1 Cabinet Inner Shell

Node 257: IVT 7 WH 5-257

Node 258: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 13 5-258 ASER 1 Cabinet Mt. Base Struct. Steel

Node 259: IVT 7 WH 5-259

Node 260: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 13 5-260 ASER 1 Cabinet Misc. Struct. Steel

Node 261: IVT 7 WH 5-261

Node 262: IVT 0 (null) 5-262 Not Used

Node 263: IVT 0 (null) 5-263 Not Used

Node 264: IVT 1 AI V 3759.000 TF 95.00000 GB 0.26602828-03 IV1=F(X) 33 IV2=F(T) 1  
 5-264 AER 2 Cabinet Volume  
 GB = 1/V is implied by entry -1.

Node 265: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 13 5-265 AER 2 Cabinet Outer Shell, Vert

Node 266: IVT 7 WH 5-266

Node 267: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 13 5-267 AER 2 Cabinet Outer Shell, Horz

Node 268: IVT 7 WH 5-268

Node 269: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 13 5-269 AER 2 Cabinet Inner Shell

Node 270: IVT 7 WH 5-270

Node 271: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 13 5-271 AER 2 Cabinet Mt. Base Struct. Steel

Node 272: IVT 7 WH 5-272

Node 273: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 13 5-273 AER 2 Cabinet Misc. Struct. Steel

Node 274: IVT 7 WH 5-274

Node 275: IVT 0 (null) 5-275 Not Used

Node 276: IVT 0 (null) 5-276 Not Used

Node 277: IVT 1 AI V 4716.000 TF 95.00000 GB 0.21204418-03 IV1=F(X) 34 IV2=F(T) 0 IV3=F(T) 1  
 5-277 Cntrl Rm Cabinet Air Volume  
 GB = 1/V is implied by entry -1.

Node 278: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 13 5-278 Cntrl Rm Cabinet External 0.25" Plate

Node 279: IVT 7 WH 5-279

Node 280: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 13 5-280 Cntrl Rm Cabinet Rear Doors and Access Panels

Node 281: IVT 7 WH 5-281

Node 282: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 13 5-282 Cntrl Rm Cabinet Front Louvered Access Plates

Node 283: IVT 7 WH 5-283

Node 284: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 13 5-284 Cntrl Rm Cabinet Instrumentation Mass

Node 285: IVT 7 WH 5-285

Node 286: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 13 5-286 Cntrl Rm Cabinet Top Plate

Node 287: IVT 7 WH 5-287

Node 288:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	13	5-288 Cntrl Rm Cabinet Top Access Covers, Duct Plate
Node 289:	IVT 7 WH		5-289							
Node 290:	IVT 0	(null)	5-290 Not Used							
Node 291:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	13	5-291 Non-Vent CR Cabinets, 1/4" Vertical Plate
Node 292:	IVT 7 WH		5-292							
Node 293:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	13	5-293 Non-Vent CR Cabinets, Rear Doors & Access Panels
Node 294:	IVT 7 WH		5-294							
Node 295:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	13	5-295 Non-Vent CR Cabinets, Top Plate
Node 296:	IVT 7 WH		5-296							
Node 297:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	13	5-297 Cntrl Rm Cabinet Unquantified Steel
Node 298:	IVT 7 WH		5-298							
Node 299:	IVT 0	(null)	5-299 Not Used							
Node 300:	IVT 0	(null)	5-300 Not Used							
Node 301:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-301 Conc Wall Betw S1 & 401
Node 302:	IVT 7 WH		5-302							
Node 303:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-303 Conc Wall Betw S1 & 17
Node 304:	IVT 7 WH		5-304							
Node 305:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-305 Conc Wall Betw S1 & 18
Node 306:	IVT 7 WH		5-306							
Node 307:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-307 Conc Wall Betw S1 & 19
Node 308:	IVT 7 WH		5-308							
Node 309:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-309 Conc Wall Betw S1 & 20
Node 310:	IVT 7 WH		5-310							
Node 311:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-311 Conc Wall Betw S1 & 54
Node 312:	IVT 7 WH		5-312							
Node 313:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-313 Conc Wall Betw S1 & 49
Node 314:	IVT 7 WH		5-314							
Node 315:	IVT 6 WT	GB	0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-315 Conc Wall Betw 49 & 54

Node 316:	IVT 7 WH	5-316							
Node 317:	IVT 6 WT	GB 0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-317 Conc Wall Betw 49 & 405
Node 318:	IVT 7 WH	5-318							
Node 319:	IVT 6 WT	GB 0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-319 Conc Wall Betw 49 & 50
Node 320:	IVT 7 WH	5-320							
Node 321:	IVT 6 WT	GB 0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	5	5-321 Sld Blk Wall Betw 49 & 13
Node 322:	IVT 7 WH	5-322							
Node 323:	IVT 6 WT	GB 0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-323 Conc Wall Betw 49 & 38
Node 324:	IVT 7 WH	5-324							
Node 325:	IVT 6 WT	GB 0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-325 Conc Wall Betw 49 & 401
Node 326:	IVT 7 WH	5-326							
Node 327:	IVT 6 WT	GB 0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-327 Conc Wall Betw 50 & 405
Node 328:	IVT 7 WH	5-328							
Node 329:	IVT 6 WT	GB 0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-329 Conc Wall Betw 50 & 53
Node 330:	IVT 7 WH	5-330							
Node 331:	IVT 6 WT	GB 0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-331 Conc Wall Betw 50 & 52
Node 332:	IVT 7 WH	5-332							
Node 333:	IVT 6 WT	GB 0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-333 Conc Wall Betw 50 & 402
Node 334:	IVT 7 WH	5-334							
Node 335:	IVT 6 WT	GB 0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-335 Conc Wall Betw 50 & 37
Node 336:	IVT 7 WH	5-336							
Node 337:	IVT 6 WT	GB 0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	5	5-337 Sld Blk Wall Betw 50 & 12
Node 338:	IVT 7 WH	5-338							
Node 339:	IVT 6 WT	GB 0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-339 Conc Wall Betw 52 & 53
Node 340:	IVT 7 WH	5-340							
Node 341:	IVT 6 WT	GB 0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-341 Conc Wall Betw 52 & 27
Node 342:	IVT 7 WH	5-342							
Node 343:	IVT 6 WT	GB 0.0000000	IV1 F(X)	0	IV2 F(D)	0	IV3 F(T)	9	5-343 Conc Wall Betw 52 & 28



Node 344: IVT 7 WH 5-344

Node 345: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-345 Conc Wall Betw 52 & 29

Node 346: IVT 7 WH 5-346

Node 347: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-347 Conc Wall Betw 52 & 10

Node 348: IVT 7 WH 5-348

Node 349: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 5 5-349 Sld Blk 'Wall' Betw 52 & 27

Node 350: IVT 7 WH 5-350

Node 351: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-351 Conc Wall Betw 52 & 402

Node 352: IVT 7 WH 5-352

Node 353: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-353 Conc Slab Betw 51 & 65

Node 354: IVT 7 WH 5-354

Node 355: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-355 Conc Slab Betw 49 & 55

Node 356: IVT 7 WH 5-356

Node 357: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-357 Conc Slab Betw 49 & 403

Node 358: IVT 7 WH 5-358

Node 359: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-359 Conc Slab Betw 49 & 404

Node 360: IVT 7 WH 5-360

Node 361: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-361 Conc Slab Betw 50 & 55

Node 362: IVT 7 WH 5-362

Node 363: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-363 Conc Slab Betw 50 & 403

Node 364: IVT 7 WH 5-364

Node 365: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-365 Conc Slab Betw 50 & 404

Node 366: IVT 7 WH 5-366

Node 367: IVT 6 WT GB 0.0000000 IV1 F(X) 0 IV2 F(D) 0 IV3 F(T) 9 5-367 Conc Slab Betw 52 & 55

Node 368: IVT 7 WH 5-368

Node 369: IVT 1 AI V 0.9300000E-01 TF 90.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-369 Door Betw 51 & 54, Face Sheet Adj. to 51

Node 370: IVT 0 (null) 5-370 Air Space in Door Betw 51 & 54

Node 371: IVT 0 (null) 5-371 Door Betw 51 & 54, Face Sheet Adj. to 54

Node 372: IVT 1 AI V 0.1200000 TF 90.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-372 Door Betw 49 & 54, Face Sheet Adj. to 49

Node 373: IVT 0 (null) 5-373 Air Space in Door Betw 49 & 54

Node 374: IVT 0 (null) 5-374 Door Betw 49 & 54, Face Sheet Adj. to 54

Node 375: IVT 1 AI V 0.1020000 TF 90.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-375 Door Betw 49 & 50, Face Sheet Adj. to 49

Node 376: IVT 1 AI V 2.8200000 TF 90.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 1  
5-376 Air Space in Door Betw 49 & 50

Node 377: IVT 1 AI V 0.1020000 TF 90.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-377 Door Betw 49 & 50, Face Sheet Adj. to 50

Node 378: IVT 1 AI V 0.7200000E-01 TF 90.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-378 Door Betw 49 & 50, Face Sheet Adj. to 49

Node 379: IVT 1 AI V 1.0900000 TF 90.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 1  
5-379 Air Space in Door Betw 49 & 50

Node 380: IVT 1 AI V 0.7200000E-01 TF 90.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-380 Door Betw 49 & 50, Face Sheet Adj. to 50

Node 381: IVT 1 AI V 0.1020000 TF 90.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-381 Door Betw 49 & 401, Face Sheet Adj. to 49

Node 382: IVT 0 (null) 5-382 Air Space in Door Betw 49 & 401

Node 383: IVT 0 (null) 5-383 Door Betw 49 & 401, Face Sheet Adj. to 401

Node 384: IVT 1 AI V 0.9300000E-01 TF 90.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-384 Door Betw 50 & 53, Face Sheet Adj. to 50

Node 385: IVT 0 (null) 5-385 Air Space in Door Betw 50 & 53

Node 386: IVT 0 (null) 5-386 Door Betw 50 & 53, Face Sheet Adj. to 53

Node 387: IVT 1 AI V 0.1020000 TF 90.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-387 Door Betw 50 & 402, Face Sheet Adj. to 50

Node 388: IVT 0 (null) 5-388 Air Space in Door Betw 50 & 402

Node 389: IVT 0 (null) 5-389 Door Betw 50 & 402, Face Sheet Adj. to 402

Node 390: IVT 1 AI V 0.9300000E-01 TF 90.00000 GB 0.0000000 IV1=F(X) 0 IV2=F(T) 0 IV3=F(T) 13  
5-390 Door Betw 52 & 53, Face Sheet Adj. to 52

Node 391: IVT 0 (null) 5-391 Air Space in Door Betw 52 & 53

Node 392: IVT 0 (null) 5-392 Door Betw 52 & 53, Face Sheet Adj. to 53

Node 393: IVT 0 (null) 5-393 Not Used  
Node 394: IVT 0 (null) 5-394 Not Used  
Node 395: IVT 0 (null) 5-395 Not Used  
Node 396: IVT 0 (null) 5-396 Not Used  
Node 397: IVT 0 (null) 5-397 Not Used  
Node 398: IVT 0 (null) 5-398 Not Used  
Node 399: IVT 0 (null) 5-399 Not Used  
Node 400: IVT 0 (null) 5-400 Not Used  
Node 401: IVT 0 (null) 5-401 Upper CSR Area "D"  
Node 402: IVT 0 (null) 5-402 Upper CSR Area "J"  
Node 403: IVT 2 BI TFB 122.0000 IV1 F(X) 0 IV2 F(T) 0 5-403 Aux Bldg Exhaust Tunnel  
Node 404: IVT 2 BI TFB 122.0000 IV1 F(X) 0 IV2 F(T) 0 5-404 Aux. Bldg Tank Filter Unit  
Node 405: IVT 2 BI TFB 104.0000 IV1 F(X) 0 IV2 F(T) 0 5-405 Turb. Bldg Operating Floor

6. Input data for NP = 709 Paths (IPT = path type, IT = tail node, IH = head node):

Path 1:	IPT 2 CR IT 1 IH 56 IP1=HTF 2 A 258.8000	Fp 1.000000	6-1 WV To Sur Rad Betw 1 & 56
Path 2:	IPT 2 CR IT 1 IH 56 IP1=HTF 1 A 258.8000	Fp 1.000000	6-2 NC Betw 1 & 56
Path 3:	IPT 8 WF IT 56 IH 57 IP1=ND 12 A 258.8000	DT 0.9687500	6-3 Cnd Betw 56 & 57
Path 4:	IPT 2 CR IT 57 IH 2 IP1=HTF 1 A 258.8000	Fp 1.000000	6-4 NC Betw 57 & 2
Path 5:	IPT 2 CR IT 57 IH 2 IP1=HTF 2 A 258.8000	Fp 1.000000	6-5 WV To Sur Rad Betw 57 & 2
Path 6:	IPT 2 CR IT 1 IH 58 IP1=HTF 2 A 147.9000	Fp 1.000000	6-6 WV To Sur Rad Betw 1 & 58
Path 7:	IPT 2 CR IT 1 IH 58 IP1=HTF 1 A 147.9000	Fp 1.000000	6-7 NC Betw 1 & 58
Path 8:	IPT 8 WF IT 58 IH 59 IP1=ND 6 A 147.9000	DT 0.4800000	6-8 Cnd Betw 58 & 59
Path 9:	IPT 0 (null) 6-9 NC Betw 58 & 4		
Path 10:	IPT 0 (null) 6-10 WV To Sur Rad Betw 59 & 4		
Path 11:	IPT 2 CR IT 1 IH 60 IP1=HTF 2 A 42.80000	Fp 1.000000	6-11 WV To Sur Rad Betw 1 & 60
Path 12:	IPT 2 CR IT 1 IH 60 IP1=HTF 1 A 42.80000	Fp 1.000000	6-12 NC Betw 1 & 60
Path 13:	IPT 8 WF IT 60 IH 61 IP1=ND 6 A 42.80000	DT 0.4800000	6-13 Cnd Betw 60 & 61
Path 14:	IPT 0 (null) 6-14 NC Betw 61 & 5		
Path 15:	IPT 0 (null) 6-15 WV To Sur Rad Betw 61 & 5		
Path 16:	IPT 2 CR IT 1 IH 62 IP1=HTF 2 A 1391.600	Fp 1.000000	6-16 WV To Sur Rad Betw 1 & 62
Path 17:	IPT 2 CR IT 1 IH 62 IP1=HTF 1 A 1391.600	Fp 1.000000	6-17 NC Betw 1 & 62
Path 18:	IPT 8 WF IT 62 IH 63 IP1=ND 42 A 1391.600	DT 3.500000	6-18 Cnd Betw 62 & 63
Path 19:	IPT 2 CR IT 63 IH 6 IP1=HTF 1 A 1391.600	Fp 1.000000	6-19 NC Betw 63 & 6
Path 20:	IPT 2 CR IT 63 IH 6 IP1=HTF 2 A 1391.600	Fp 1.000000	6-20 WV To Sur Rad Betw 63 & 6
Path 21:	IPT 2 CR IT 1 IH 64 IP1=HTF 2 A 120.0000	Fp 1.000000	6-21 WV To Sur Rad Betw 1 & 64
Path 22:	IPT 2 CR IT 1 IH 64 IP1=HTF 1 A 120.0000	Fp 1.000000	6-22 NC Betw 1 & 64
Path 23:	IPT 8 WF IT 64 IH 65 IP1=ND 6 A 120.0000	DT 0.4800000	6-23 Cnd Betw 64 & 65
Path 24:	IPT 0 (null) 6-24 NC Betw 65 & 7		
Path 25:	IPT 0 (null) 6-25 WV To Sur Rad Betw 65 & 7		
Path 26:	IPT 2 CR IT 1 IH 66 IP1=HTF 2 A 125.6000	Fp 1.000000	6-26 WV To Sur Rad Betw 1 & 66
Path 27:	IPT 2 CR IT 1 IH 66 IP1=HTF 1 A 125.6000	Fp 1.000000	6-27 NC Betw 1 & 66

Path 28:	IPT 8 WP IT 66 IN 67 IP1=ND 6 A 125.6000	DT 0.4800000	6-28 Cnd Betw 66 & 67
Path 29:	IPT 0 (null) 6-29 NC Betw 67 & 8		
Path 30:	IPT 0 (null) 6-30 WV To Sur Rad Betw 67 & 8		
Path 31:	IPT 2 CR IT 1 IN 68 IP1=HTF 2 A 258.2000	Fp 1.000000	6-31 WV To Sur Rad Betw 1 & 68
Path 32:	IPT 2 CR IT 1 IN 68 IP1=HTF 1 A 258.2000	Fp 1.000000	6-32 NC Betw 1 & 68
Path 33:	IPT 8 WP IT 68 IN 69 IP1=ND 12 A 258.2000	DT 0.9687500	6-33 Cnd Betw 68 & 69
Path 34:	IPT 2 CR IT 69 IN 3 IP1=HTF 1 A 258.2000	Fp 1.000000	6-34 NC Betw 69 & 3
Path 35:	IPT 2 CR IT 69 IN 3 IP1=HTF 2 A 258.2000	Fp 1.000000	6-35 WV To Sur Rad Betw 69 & 3
Path 36:	IPT 2 CR IT 1 IN 70 IP1=HTF 2 A 49.70000	Fp 1.000000	6-36 WV To Sur Rad Betw 1 & 70
Path 37:	IPT 2 CR IT 1 IN 70 IP1=HTF 1 A 49.70000	Fp 1.000000	6-37 NC Betw 1 & 70
Path 38:	IPT 8 WP IT 70 IN 71 IP1=ND 6 A 49.70000	DT 0.4800000	6-38 Cnd Betw 70 & 71
Path 39:	IPT 0 (null) 6-39 NC Betw 71 & 9		
Path 40:	IPT 0 (null) 6-40 WV To Sur Rad Betw 71 & 9		
Path 41:	IPT 2 CR IT 1 IN 72 IP1=HTF 2 A 45.70000	Fp 1.000000	6-41 WV To Sur Rad Betw 1 & 72
Path 42:	IPT 2 CR IT 1 IN 72 IP1=HTF 1 A 45.70000	Fp 1.000000	6-42 NC Betw 1 & 72
Path 43:	IPT 8 WP IT 72 IN 73 IP1=ND 6 A 45.70000	DT 0.4800000	6-43 Cnd Betw 72 & 73
Path 44:	IPT 0 (null) 6-44 NC Betw 73 & 10		
Path 45:	IPT 0 (null) 6-45 WV To Sur Rad Betw 73 & 10		
Path 46:	IPT 2 CR IT 1 IN 74 IP1=HTF 2 A 256.8000	Fp 1.000000	6-46 WV To Sur Rad Betw 1 & 74
Path 47:	IPT 2 CR IT 1 IN 74 IP1=HTF 1 A 256.8000	Fp 1.000000	6-47 NC Betw 1 & 74
Path 48:	IPT 8 WP IT 74 IN 75 IP1=ND 6 A 256.8000	DT 0.4800000	6-48 Cnd Betw 74 & 75
Path 49:	IPT 0 (null) 6-49 NC Betw 75 & 11		
Path 50:	IPT 0 (null) 6-50 WV To Sur Rad Betw 75 & 11		
Path 51:	IPT 2 CR IT 1 IN 76 IP1=HTF 2 A 115.0000	Fp 1.000000	6-51 WV To Sur Rad Betw 1 & 76
Path 52:	IPT 2 CR IT 1 IN 76 IP1=HTF 1 A 115.0000	Fp 1.000000	6-52 NC Betw 1 & 76
Path 53:	IPT 8 WP IT 76 IN 77 IP1=ND 24 A 115.0000	DT 1.968750	6-53 Cnd Betw 76 & 77
Path 54:	IPT 2 CR IT 77 IN 12 IP1=HTF 1 A 115.0000	Fp 1.000000	6-54 NC Betw 77 & 12
Path 55:	IPT 2 CR IT 77 IN 12 IP1=HTF 2 A 115.0000	Fp 1.000000	6-55 WV To Sur Rad Betw 77 & 12

Path 56: IPT 2 CR IT 1 IN 78 IP1=HTF 2 A 131.6000	Fp 1.000000	6-56 WV To Sur Rad Betw 1 & 78
Path 57: IPT 2 CR IT 1 IN 78 IP1=HTF 1 A 131.6000	Fp 1.000000	6-57 NC Betw 1 & 78
Path 58: IPT 8 WP IT 78 IN 79 IP1=ND 24 A 131.6000	DT 1.968750	6-58 Cnd Betw 78 & 79
Path 59: IPT 2 CR IT 79 IN 13 IP1=HTF 1 A 131.6000	Fp 1.000000	6-59 NC Betw 79 & 13
Path 60: IPT 2 CR IT 79 IN 13 IP1=HTF 2 A 131.6000	Fp 1.000000	6-60 WV To Sur Rad Betw 79 & 13
Path 61: IPT 2 CR IT 1 IN 80 IP1=HTF 2 A 250.8000	Fp 1.000000	6-61 WV To Sur Rad Betw 1 & 80
Path 62: IPT 2 CR IT 1 IN 80 IP1=HTF 1 A 250.8000	Fp 1.000000	6-62 NC Betw 1 & 80
Path 63: IPT 8 WP IT 80 IN 81 IP1=ND 6 A 250.8000	DT 0.4800000	6-63 Cnd Betw 80 & 81
Path 64: IPT 0 (null) 6-64 NC Betw 81 & 14		
Path 65: IPT 0 (null) 6-65 WV To Sur Rad Betw 81 & 14		
Path 66: IPT 2 CR IT 1 IN 82 IP1=HTF 2 A 104.5000	Fp 1.000000	6-66 WV To Sur Rad Betw 1 & 82
Path 67: IPT 2 CR IT 1 IN 82 IP1=HTF 1 A 104.5000	Fp 1.000000	6-67 NC Betw 1 & 82
Path 68: IPT 8 WP IT 82 IN 83 IP1=ND 6 A 104.5000	DT 0.4800000	6-68 Cnd Betw 82 & 83
Path 69: IPT 0 (null) 6-69 NC Betw 83 & 15		
Path 70: IPT 0 (null) 6-70 WV To Sur Rad Betw 83 & 15		
Path 71: IPT 2 CR IT 2 IN 84 IP1=HTF 2 A 150.4000	Fp 1.000000	6-71 WV To Sur Rad Betw 2 & 84
Path 72: IPT 2 CR IT 2 IN 84 IP1=HTF 1 A 150.4000	Fp 1.000000	6-72 NC Betw 2 & 84
Path 73: IPT 8 WP IT 84 IN 85 IP1=ND 6 A 150.4000	DT 0.4800000	6-73 Cnd Betw 84 & 85
Path 74: IPT 0 (null) 6-74 NC Betw 85 & 15		
Path 75: IPT 0 (null) 6-75 WV To Sur Rad Betw 85 & 15		
Path 76: IPT 2 CR IT 2 IN 86 IP1=HTF 2 A 95.90000	Fp 1.000000	6-76 WV To Sur Rad Betw 2 & 86
Path 77: IPT 2 CR IT 2 IN 86 IP1=HTF 1 A 95.90000	Fp 1.000000	6-77 NC Betw 2 & 86
Path 78: IPT 8 WP IT 86 IN 87 IP1=ND 6 A 95.90000	DT 0.4800000	6-78 Cnd Betw 86 & 87
Path 79: IPT 0 (null) 6-79 NC Betw 87 & 16		
Path 80: IPT 0 (null) 6-80 WV To Sur Rad Betw 87 & 16		
Path 81: IPT 2 CR IT 2 IN 88 IP1=HTF 2 A 243.4000	Fp 1.000000	6-81 WV To Sur Rad Betw 2 & 88
Path 82: IPT 2 CR IT 2 IN 88 IP1=HTF 1 A 243.4000	Fp 1.000000	6-82 NC Betw 2 & 88
Path 83: IPT 8 WP IT 88 IN 89 IP1=ND 36 A 243.4000	DT 3.000000	6-83 Cnd Betw 88 & 89



Path 84: IPT 2 CR IT 89 IN 17 IP1=HTF 1 A 243.4000	Fp 1.000000	6-84 NC Betw 89 & 17
Path 85: IPT 2 CR IT 89 IN 17 IP1=HTF 2 A 243.4000	Fp 1.000000	6-85 WV To Sur Rad Betw 89 & 17
Path 86: IPT 2 CR IT 2 IN 90 IP1=HTF 2 A 315.0000	Fp 1.000000	6-86 WV To Sur Rad Betw 2 & 90
Path 87: IPT 2 CR IT 2 IN 90 IP1=HTF 1 A 315.0000	Fp 1.000000	6-87 NC Betw 2 & 90
Path 88: IPT 8 WP IT 90 IN 91 IP1=ND 36 A 315.0000	DT 3.000000	6-88 Cnd Betw 90 & 91
Path 89: IPT 2 CR IT 91 IN 18 IP1=HTF 1 A 315.0000	Fp 1.000000	6-89 NC Betw 91 & 18
Path 90: IPT 2 CR IT 91 IN 18 IP1=HTF 2 A 315.0000	Fp 1.000000	6-90 WV To Sur Rad Betw 91 & 18
Path 91: IPT 2 CR IT 2 IN 92 IP1=HTF 2 A 90.00000	Fp 1.000000	6-91 WV To Sur Rad Betw 2 & 92
Path 92: IPT 2 CR IT 2 IN 92 IP1=HTF 1 A 90.00000	Fp 1.000000	6-92 NC Betw 2 & 92
Path 93: IPT 8 WP IT 92 IN 93 IP1=ND 18 A 90.00000	DT 1.500000	6-93 Cnd Betw 92 & 93
Path 94: IPT 0 (null) 6-94 NC Betw 93 & 19		
Path 95: IPT 0 (null) 6-95 WV To Sur Rad Betw 93 & 19		
Path 96: IPT 2 CR IT 2 IN 94 IP1=HTF 2 A 511.1000	Fp 1.000000	6-96 WV To Sur Rad Betw 2 & 94
Path 97: IPT 2 CR IT 2 IN 94 IP1=HTF 1 A 511.1000	Fp 1.000000	6-97 NC Betw 2 & 94
Path 98: IPT 8 WP IT 94 IN 95 IP1=ND 1 A 511.1000	DT 0.1250000	6-98 Cnd Betw 94 & 95
Path 99: IPT 0 (null) 6-99 NC betw 95 & 20		
Path 100: IPT 0 (null) 6-100 Rad Betw 95 & 20		
Path 101: IPT 2 CR IT 2 IN 96 IP1=HTF 2 A 49.50000	Fp 1.000000	6-101 WV To Sur Rad Betw 2 & 96
Path 102: IPT 2 CR IT 2 IN 96 IP1=HTF 1 A 49.50000	Fp 1.000000	6-102 NC Betw 2 & 96
Path 103: IPT 8 WP IT 96 IN 97 IP1=ND 1 A 49.50000	DT 0.1250000	6-103 Cnd Betw 96 & 97
Path 104: IPT 0 (null) 6-104 NC Betw 97 & 21		
Path 105: IPT 0 (null) 6-105 WV To Sur Rad Betw 97 & 21		
Path 106: IPT 2 CR IT 2 IN 98 IP1=HTF 2 A 83.60000	Fp 1.000000	6-106 WV To Sur Rad Betw 2 & 98
Path 107: IPT 2 CR IT 2 IN 98 IP1=HTF 1 A 83.60000	Fp 1.000000	6-107 NC Betw 2 & 98
Path 108: IPT 8 WP IT 98 IN 99 IP1=ND 1 A 83.60000	DT 0.1250000	6-108 Cnd Betw 98 & 99
Path 109: IPT 0 (null) 6-109 NC Betw 99 & 22		
Path 110: IPT 0 (null) 6-110 WV To Sur Rad Betw 99 & 22		
Path 111: IPT 2 CR IT 2 IN 100 IP1=HTF 2 A 22.60000	Fp 1.000000	6-111 WV To Sur Rad Betw 2 & 100

Path 112:	IPT 2 CR IT 2	IN 100	IP1=MTF	1 A	22.60000	Fp	1.000000	6-112 NC Betw 2 & 100
Path 113:	IPT 8 WP IT 100	IN 101	IP1=ND	1 A	22.60000	DT	0.1250000	6-113 Cnd Betw 100 & 101
Path 114:	IPT 0 (null)	6-114 NC Betw 101 & 23						
Path 115:	IPT 0 (null)	6-115 WV To Sur Rad Betw 101 & 23						
Path 116:	IPT 2 CR IT 2	IN 102	IP1=MTF	2 A	152.2000	Fp	1.000000	6-116 WV To Sur Rad Betw 2 & 102
Path 117:	IPT 2 CR IT 2	IN 102	IP1=MTF	1 A	152.2000	Fp	1.000000	6-117 NC Betw 2 & 102
Path 118:	IPT 8 WP IT 102	IN 103	IP1=ND	1 A	152.2000	DT	0.1250000	6-118 Cnd Betw 102 & 103
Path 119:	IPT 0 (null)	6-119 NC Betw 103 & 2						
Path 120:	IPT 0 (null)	6-120 WV To Sur Rad Betw 103 & 2						
Path 121:	IPT 2 CR IT 2	IN 104	IP1=MTF	2 A	23.90000	Fp	1.000000	6-121 WV To Sur Rad Betw 2 & 104
Path 122:	IPT 2 CR IT 2	IN 104	IP1=MTF	1 A	23.90000	Fp	1.000000	6-122 NC Betw 2 & 104
Path 123:	IPT 8 WP IT 104	IN 105	IP1=ND	1 A	23.90000	DT	0.1250000	6-123 Cnd Betw 104 & 105
Path 124:	IPT 0 (null)	6-124 NC Betw 105 & 4						
Path 125:	IPT 0 (null)	6-125 WV To Sur Rad Betw 105 & 4						
Path 126:	IPT 2 CR IT 3	IN 106	IP1=MTF	2 A	28.50000	Fp	1.000000	6-126 WV To Sur Rad Betw 3 & 106
Path 127:	IPT 2 CR IT 3	IN 106	IP1=MTF	1 A	28.50000	Fp	1.000000	6-127 NC Betw 3 & 106
Path 128:	IPT 8 WP IT 106	IN 107	IP1=ND	6 A	28.50000	DT	0.4800000	6-128 Cnd Betw 106 & 107
Path 129:	IPT 0 (null)	6-129 NC Betw 107 & 8						
Path 130:	IPT 0 (null)	6-130 WV To Sur Rad Betw 107 & 8						
Path 131:	IPT 2 CR IT 3	IN 108	IP1=MTF	2 A	158.8000	Fp	1.000000	6-131 WV To Sur Rad Betw 3 & 108
Path 132:	IPT 2 CR IT 3	IN 108	IP1=MTF	1 A	158.8000	Fp	1.000000	6-132 NC Betw 3 & 108
Path 133:	IPT 8 WP IT 108	IN 109	IP1=ND	6 A	158.8000	DT	0.4800000	6-133 Cnd Betw 108 & 109
Path 134:	IPT 0 (null)	6-134 NC Betw 109 & 25						
Path 135:	IPT 0 (null)	6-135 WV To Sur Rad Betw 109 & 25						
Path 136:	IPT 2 CR IT 3	IN 110	IP1=MTF	2 A	119.9000	Fp	1.000000	6-136 WV To Sur Rad Betw 3 & 110
Path 137:	IPT 2 CR IT 3	IN 110	IP1=MTF	1 A	119.9000	Fp	1.000000	6-137 NC Betw 3 & 110
Path 138:	IPT 8 WP IT 110	IN 111	IP1=ND	1 A	119.9000	DT	0.1250000	6-138 Cnd Betw 110 & 111
Path 139:	IPT 0 (null)	6-139 NC Betw 111 & 26						

Path 140:	IPT 0 (null)	6-140 WV To Sur Rad Betw 111 & 26			
Path 141:	IPT 2 CR IT 3	IN 112 IP1=HTF 2 A 511.4000	Fp 1.000000	6-141 WV To Sur Rad Betw 3 & 112	
Path 142:	IPT 2 CR IT 3	IN 112 IP1=HTF 1 A 511.4000	Fp 1.000000	6-142 NC Betw 3 & 112	
Path 143:	IPT 8 WF IT 112	IN 113 IP1=ND 1 A 511.4000	DT 0.1250000	6-143 Cnd Betw 112 & 113	
Path 144:	IPT 0 (null)	6-144 NC Betw 113 & 27			
Path 145:	IPT 0 (null)	6-145 WV To Sur Rad Betw 113 & 27			
Path 146:	IPT 2 CR IT 3	IN 114 IP1=HTF 2 A 90.00000	Fp 1.000000	6-146 WV To Sur Rad Betw 3 & 114	
Path 147:	IPT 2 CR IT 3	IN 114 IP1=HTF 1 A 90.00000	Fp 1.000000	6-147 NC Betw 3 & 114	
Path 148:	IPT 8 WF IT 114	IN 115 IP1=ND 16 A 90.00000	DT 1.500000	6-148 Cnd Betw 114 & 115	
Path 149:	IPT 0 (null)	6-149 NC Betw 115 & 28			
Path 150:	IPT 0 (null)	6-150 WV To Sur Rad Betw 115 & 28			
Path 151:	IPT 2 CR IT 3	IN 116 IP1=HTF 2 A 315.0000	Fp 1.000000	6-151 WV To Sur Rad Betw 3 & 116	
Path 152:	IPT 2 CR IT 3	IN 116 IP1=HTF 1 A 315.0000	Fp 1.000000	6-152 NC Betw 3 & 116	
Path 153:	IPT 8 WF IT 116	IN 117 IP1=ND 36 A 315.0000	DT 3.000000	6-153 Cnd Betw 116 & 117	
Path 154:	IPT 2 CR IT 117	IN 29 IP1=HTF 1 A 315.0000	Fp 1.000000	6-154 NC Betw 117 & 29	
Path 155:	IPT 2 CR IT 117	IN 29 IP1=HTF 2 A 315.0000	Fp 1.000000	6-155 WV To Sur Rad Betw 117 & 29	
Path 156:	IPT 2 CR IT 3	IN 118 IP1=HTF 2 A 93.60000	Fp 1.000000	6-156 WV To Sur Rad Betw 3 & 118	
Path 157:	IPT 2 CR IT 3	IN 118 IP1=HTF 1 A 93.60000	Fp 1.000000	6-157 NC Betw 3 & 118	
Path 158:	IPT 8 WF IT 118	IN 119 IP1=ND 36 A 93.60000	DT 3.000000	6-158 Cnd Betw 118 & 119	
Path 159:	IPT 2 CR IT 119	IN 30 IP1=HTF 1 A 93.60000	Fp 1.000000	6-159 NC Betw 119 & 30	
Path 160:	IPT 2 CR IT 119	IN 30 IP1=HTF 2 A 93.60000	Fp 1.000000	6-160 WV To Sur Rad Betw 119 & 30	
Path 161:	IPT 2 CR IT 3	IN 120 IP1=HTF 2 A 231.4000	Fp 1.000000	6-161 WV To Sur Rad Betw 3 & 120	
Path 162:	IPT 2 CR IT 3	IN 120 IP1=HTF 1 A 231.4000	Fp 1.000000	6-162 NC Betw 3 & 120	
Path 163:	IPT 8 WF IT 120	IN 121 IP1=ND 6 A 231.4000	DT 0.4800000	6-163 Cnd Betw 120 & 121	
Path 164:	IPT 0 (null)	6-164 NC Betw 121 & 31			
Path 165:	IPT 0 (null)	6-165 WV To Sur Rad Betw 121 & 31			
Path 166:	IPT 2 CR IT 3	IN 122 IP1=HTF 2 A 23.00000	Fp 1.000000	6-166 WV To Sur Rad Betw 3 & 122	
Path 167:	IPT 2 CR IT 3	IN 122 IP1=HTF 1 A 23.00000	Fp 1.000000	6-167 NC Betw 3 & 122	

Path 168: IPT 8 WF IT 122 IN 123 IP1=ND 6 A 23.00000	DT 0.4800000	6-168 Cnd Betw 122 & 123
Path 169: IPT 0 (null) 6-169 NC Betw 123 & 32		
Path 170: IPT 0 (null) 6-170 WV To Sur Rad Betw 123 & 32		
Path 171: IPT 2 CR IT 3 IN 124 IP1=HTF 2 A 138.30000	Fp 1.0000000	6-171 WV To Sur Rad Betw 3 & 124
Path 172: IPT 2 CR IT 3 IN 124 IP1=HTF 1 A 138.30000	Fp 1.0000000	6-172 NC Betw 3 & 124
Path 173: IPT 8 WF IT 124 IN 125 IP1=ND 6 A 138.30000	DT 0.4800000	6-173 Cnd Betw 124 & 125
Path 174: IPT 0 (null) 6-174 NC Betw 125 & 9		
Path 175: IPT 0 (null) 6-175 WV To Sur Rad Betw 125 & 9		
Path 176: IPT 2 CR IT 1 IN 126 IP1=HTF 2 A 49.30000	Fp 1.0000000	6-176 WV To Sur Rad Betw 1 & 126
Path 177: IPT 2 CR IT 1 IN 126 IP1=HTF 1 A 49.30000	Fp 1.0000000	6-177 NC Betw 1 & 126
Path 178: IPT 8 WF IT 126 IN 127 IP1=ND 6 A 49.30000	DT 0.4800000	6-178 Cnd Betw 126 & 127
Path 179: IPT 0 (null) 6-179 NC Betw 127 & 33		
Path 180: IPT 0 (null) 6-180 WV To Sur Rad Betw 127 & 33		
Path 181: IPT 2 CR IT 1 IN 128 IP1=HTF 2 A 41.90000	Fp 1.0000000	6-181 WV To Sur Rad Betw 1 & 128
Path 182: IPT 2 CR IT 1 IN 128 IP1=HTF 1 A 41.90000	Fp 1.0000000	6-182 NC Betw 1 & 128
Path 183: IPT 8 WF IT 128 IN 129 IP1=ND 6 A 41.90000	DT 0.4800000	6-183 Cnd Betw 128 & 129
Path 184: IPT 0 (null) 6-184 NC Betw 129 & 34		
Path 185: IPT 0 (null) 6-185 WV To Sur Rad Betw 129 & 34		
Path 186: IPT 2 CR IT 1 IN 130 IP1=HTF 2 A 29.30000	Fp 1.0000000	6-186 WV To Sur Rad Betw 1 & 130
Path 187: IPT 2 CR IT 1 IN 130 IP1=HTF 1 A 29.30000	Fp 1.0000000	6-187 NC Betw 1 & 130
Path 188: IPT 8 WF IT 130 IN 131 IP1=ND 6 A 29.30000	DT 0.4800000	6-188 Cnd Betw 130 & 131
Path 189: IPT 0 (null) 6-189 NC Betw 131 & 35		
Path 190: IPT 0 (null) 6-190 WV To Sur Rad Betw 131 & 35		
Path 191: IPT 2 CR IT 1 IN 132 IP1=HTF 2 A 33.80000	Fp 1.0000000	6-191 WV To Sur Rad Betw 1 & 132
Path 192: IPT 2 CR IT 1 IN 132 IP1=HTF 1 A 33.80000	Fp 1.0000000	6-192 NC Betw 1 & 132
Path 193: IPT 8 WF IT 132 IN 133 IP1=ND 6 A 33.80000	DT 0.4800000	6-193 Cnd Betw 132 & 133
Path 194: IPT 0 (null) 6-194 NC Betw 133 & 36		
Path 195: IPT 0 (null) 6-195 WV To Sur Rad Betw 133 & 36		

Path 196: IPT 2 CR IT 1 IN 134 IP1=HTF 2 A 102.6000	Fp 1.000000	6-196 WV To Sur Rad Betw 1 & 134
Path 197: IPT 2 CR IT 1 IN 134 IP1=HTF 1 A 102.6000	Fp 1.000000	6-197 NC Betw 1 & 134
Path 198: IPT 8 WP IT 134 IN 135 IP1=ND 6 A 102.6000	DT 0.4800000	6-198 Cnd Betw 134 & 135
Path 199: IPT 0 (null) 6-199 NC Betw 135 & 37		
Path 200: IPT 0 (null) 6-200 WV To Sur Rad Betw 135 & 37		
Path 201: IPT 2 CR IT 1 IN 136 IP1=HTF 2 A 100.6000	Fp 1.000000	6-201 WV To Sur Rad Betw 1 & 136
Path 202: IPT 2 CR IT 1 IN 136 IP1=HTF 1 A 100.6000	Fp 1.000000	6-202 NC Betw 1 & 136
Path 203: IPT 8 WP IT 136 IN 137 IP1=ND 6 A 100.6000	DT 0.4800000	6-203 Cnd Betw 136 & 137
Path 204: IPT 0 (null) 6-204 NC Betw 137 & 38		
Path 205: IPT 0 (null) 6-205 WV To Sur Rad Betw 137 & 38		
Path 206: IPT 2 CR IT 1 IN 138 IP1=HTF 2 A 42.00000	Fp 1.000000	6-206 WV To Sur Rad Betw 1 & 138
Path 207: IPT 2 CR IT 1 IN 138 IP1=HTF 1 A 42.00000	Fp 1.000000	6-207 NC Betw 1 & 138
Path 208: IPT 8 WP IT 138 IN 139 IP1=ND 6 A 42.00000	DT 0.4800000	6-208 Cnd Betw 138 & 139
Path 209: IPT 0 (null) 6-209 NC Betw 139 & 39		
Path 210: IPT 0 (null) 6-210 WV To Sur Rad Betw 139 & 39		
Path 211: IPT 2 CR IT 2 IN 140 IP1=HTF 2 A 50.10000	Fp 1.000000	6-211 WV To Sur Rad Betw 2 & 140
Path 212: IPT 2 CR IT 2 IN 140 IP1=HTF 1 A 50.10000	Fp 1.000000	6-212 NC Betw 2 & 140
Path 213: IPT 8 WP IT 140 IN 141 IP1=ND 6 A 50.10000	DT 0.4800000	6-213 Cnd Betw 140 & 141
Path 214: IPT 0 (null) 6-214 NC Betw 141 & 2		
Path 215: IPT 0 (null) 6-215 WV To Sur Rad Betw 141 & 2		
Path 216: IPT 2 CR IT 2 IN 142 IP1=HTF 2 A 26.40000	Fp 1.000000	6-216 WV To Sur Rad Betw 2 & 142
Path 217: IPT 2 CR IT 2 IN 142 IP1=HTF 1 A 26.40000	Fp 1.000000	6-217 NC Betw 2 & 142
Path 218: IPT 8 WP IT 142 IN 143 IP1=ND 1 A 26.40000	DT 0.1250000	6-218 Cnd Betw 142 & 143
Path 219: IPT 0 (null) 6-219 NC Betw 143 & 40		
Path 220: IPT 0 (null) 6-220 WV To Sur Rad Betw 143 & 40		
Path 221: IPT 2 CR IT 2 IN 144 IP1=HTF 2 A 44.40000	Fp 1.000000	6-221 WV To Sur Rad Betw 2 & 144
Path 222: IPT 2 CR IT 2 IN 144 IP1=HTF 1 A 44.40000	Fp 1.000000	6-222 NC Betw 2 & 144
Path 223: IPT 8 WP IT 144 IN 145 IP1=ND 1 A 44.40000	DT 0.1250000	6-223 Cnd Betw 144 & 145

Path 224: IPT 0 (null) 6-224 NC Betw 145 & 41		
Path 225: IPT 0 (null) 6-225 WV To Sur Rad Betw 145 & 41		
Path 226: IPT 2 CR IT 2 IN 146 IP1=HTF 2 A 92.00000	Fp 1.000000	6-226 WV To Sur Rad Betw 2 & 146
Path 227: IPT 2 CR IT 2 IN 146 IP1=HTF 1 A 92.00000	Fp 1.000000	6-227 NC Betw 2 & 146
Path 228: IPT 8 WP IT 146 IN 147 IP1=ND 1 A 92.00000	DT 0.1250000	6-228 Cnd Betw 146 & 147
Path 229: IPT 0 (null) 6-229 NC Betw 147 & 42		
Path 230: IPT 0 (null) 6-230 WV To Sur Rad Betw 147 & 42		
Path 231: IPT 2 CR IT 2 IN 148 IP1=HTF 2 A 25.00000	Fp 1.000000	6-231 WV To Sur Rad Betw 2 & 148
Path 232: IPT 2 CR IT 2 IN 148 IP1=HTF 1 A 25.00000	Fp 1.000000	6-232 NC Betw 2 & 148
Path 233: IPT 8 WP IT 148 IN 149 IP1=ND 1 A 25.00000	DT 0.1250000	6-233 Cnd Betw 148 & 149
Path 234: IPT 0 (null) 6-234 NC Betw 149 & 33		
Path 235: IPT 0 (null) 6-235 WV To Sur Rad Betw 149 & 33		
Path 236: IPT 2 CR IT 3 IN 150 IP1=HTF 2 A 25.50000	Fp 1.000000	6-236 WV To Sur Rad Betw 3 & 150
Path 237: IPT 2 CR IT 3 IN 150 IP1=HTF 1 A 25.50000	Fp 1.000000	6-237 NC Betw 3 & 150
Path 238: IPT 8 WP IT 150 IN 151 IP1=ND 6 A 25.50000	DT 0.4800000	6-238 Cnd Betw 150 & 151
Path 239: IPT 0 (null) 6-239 NC Betw 151 & 34		
Path 240: IPT 0 (null) 6-240 WV To Sur Rad Betw 151 & 34		
Path 241: IPT 2 CR IT 3 IN 152 IP1=HTF 2 A 92.80000	Fp 1.000000	6-241 WV To Sur Rad Betw 3 & 152
Path 242: IPT 2 CR IT 3 IN 152 IP1=HTF 1 A 92.80000	Fp 1.000000	6-242 NC Betw 3 & 152
Path 243: IPT 8 WP IT 152 IN 153 IP1=ND 6 A 92.80000	DT 0.4800000	6-243 Cnd Betw 152 & 153
Path 244: IPT 0 (null) 6-244 NC Betw 153 & 43		
Path 245: IPT 0 (null) 6-245 WV To Sur Rad Betw 153 & 43		
Path 246: IPT 2 CR IT 3 IN 154 IP1=HTF 2 A 75.20000	Fp 1.000000	6-246 WV To Sur Rad Betw 3 & 154
Path 247: IPT 2 CR IT 3 IN 154 IP1=HTF 1 A 75.20000	Fp 1.000000	6-247 NC Betw 3 & 154
Path 248: IPT 8 WP IT 154 IN 155 IP1=ND 1 A 75.20000	DT 0.1250000	6-248 Cnd Betw 154 & 155
Path 249: IPT 0 (null) 6-249 NC Betw 155 & 44		
Path 250: IPT 0 (null) 6-250 WV To Sur Rad Betw 155 & 44		
Path 251: IPT 2 CR IT 3 IN 156 IP1=HTF 2 A 56.90000	Fp 1.000000	6-251 WV To Sur Rad Betw 3 & 156



Path 252: IPT 2 CR IT 3 IH 156 IP1=HTF 1 A 56.90000	Fp 1.000000	6-252 NC Betw 3 & 156
Path 253: IPT 8 WP IT 156 IH 157 IP1=ND 6 A 56.90000	DT 0.4800000	6-253 Cnd Betw 156 & 157
Path 254: IPT 0 (null) 6-254 NC Betw 157 & 35		
Path 255: IPT 0 (null) 6-255 MV To Sur Rad Betw 157 & 35		
Path 256: IPT 2 CR IT 1 IH 176 IP1=HTF 2 A 2629.300	Fp 1.000000	6-256 MV To Sur Rad Betw 1 & 176
Path 257: IPT 2 CR IT 1 IH 176 IP1=HTF 3 A 2629.300	Fp 1.000000	6-257 NC Betw 1 & 176
Path 258: IPT 8 WP IT 176 IH 177 IP1=ND 4 A 2629.300	DT 0.3330000	6-258 Cnd Betw 176 & 177
Path 259: IPT 2 CR IT 177 IH 49 IP1=HTF 9 A 2629.300	Fp 1.000000	6-259 NC Betw 177 & 49
Path 260: IPT 2 CR IT 177 IH 49 IP1=HTF 2 A 2629.300	Fp 1.000000	6-260 MV To Sur Rad Betw 177 & 49
Path 261: IPT 2 CR IT 1 IH 178 IP1=HTF 2 A 2617.700	Fp 1.000000	6-261 MV To Sur Rad Betw 1 & 178
Path 262: IPT 2 CR IT 1 IH 178 IP1=HTF 3 A 2617.700	Fp 1.000000	6-262 NC Betw 1 & 178
Path 263: IPT 8 WP IT 178 IH 179 IP1=ND 4 A 2617.700	DT 0.3330000	6-263 Cnd Betw 178 & 179
Path 264: IPT 2 CR IT 179 IH 50 IP1=HTF 9 A 2617.700	Fp 1.000000	6-264 NC Betw 179 & 50
Path 265: IPT 2 CR IT 179 IH 50 IP1=HTF 2 A 2617.700	Fp 1.000000	6-265 MV To Sur Rad Betw 179 & 50
Path 266: IPT 2 CR IT 1 IH 180 IP1=HTF 2 A 584.3000	Fp 1.000000	6-266 MV To Sur Rad Betw 1 & 180
Path 267: IPT 2 CR IT 1 IH 180 IP1=HTF 5 A 584.3000	Fp 1.000000	6-267 NC Betw 1 & 180
Path 268: IPT 8 WP IT 180 IH 181 IP1=ND 6 A 584.3000	DT 0.5000000	6-268 Cnd Betw 180 & 181
Path 269: IPT 0 (null) 6-269 NC Betw 181 & 45		
Path 270: IPT 0 (null) 6-270 MV To Sur Rad Betw 181 & 45		
Path 271: IPT 2 CR IT 1 IH 182 IP1=HTF 2 A 581.7000	Fp 1.000000	6-271 MV To Sur Rad Betw 1 & 182
Path 272: IPT 2 CR IT 1 IH 182 IP1=HTF 5 A 581.7000	Fp 1.000000	6-272 NC Betw 1 & 182
Path 273: IPT 8 WP IT 182 IH 183 IP1=ND 6 A 581.7000	DT 0.5000000	6-273 Cnd Betw 182 & 183
Path 274: IPT 0 (null) 6-274 NC Betw 183 & 46		
Path 275: IPT 0 (null) 6-275 MV To Sur Rad Betw 183 & 46		
Path 276: IPT 2 CR IT 2 IH 184 IP1=HTF 2 A 2215.000	Fp 1.000000	6-276 MV To Sur Rad Betw 2 & 184
Path 277: IPT 2 CR IT 2 IH 184 IP1=HTF 3 A 2215.000	Fp 1.000000	6-277 NC Betw 2 & 184
Path 278: IPT 8 WP IT 184 IH 185 IP1=ND 4 A 2215.000	DT 0.3330000	6-278 Cnd Betw 184 & 185
Path 279: IPT 2 CR IT 185 IH 51 IP1=HTF 9 A 2215.000	Fp 1.000000	6-279 NC Betw 185 & 51

Path 280:	IPT 2 CR IT 185 IN 51 IP1=HTF 2 A 2215.000	Fp 1.000000	6-280 MV To Sur Rad Betw 185 & 51
Path 281:	IPT 2 CR IT 2 IN 186 IP1=HTF 2 A 1722.800	Fp 1.000000	6-281 MV To Sur Rad Betw 2 & 186
Path 282:	IPT 2 CR IT 2 IN 186 IP1=HTF 5 A 1722.800	Fp 1.000000	6-282 NC Betw 2 & 186
Path 283:	IPT 6 WP IT 186 IN 187 IP1=ND 6 A 1722.800	DT 0.5000000	6-283 Cnd Betw 186 & 187
Path 284:	IPT 0 (null) 6-284 NC Betw 187 & 47		
Path 285:	IPT 0 (null) 6-285 MV To Sur Rad Betw 187 & 47		
Path 286:	IPT 2 CR IT 3 IN 188 IP1=HTF 2 A 2131.600	Fp 1.000000	6-286 MV To Sur Rad Betw 3 & 188
Path 287:	IPT 2 CR IT 3 IN 188 IP1=HTF 3 A 2131.600	Fp 1.000000	6-287 NC Betw 3 & 188
Path 288:	IPT 6 WP IT 188 IN 189 IP1=ND 4 A 2131.600	DT 0.3330000	6-288 Cnd Betw 188 & 189
Path 289:	IPT 2 CR IT 189 IN 52 IP1=HTF 9 A 2131.600	Fp 1.000000	6-289 NC Betw 189 & 52
Path 290:	IPT 2 CR IT 189 IN 52 IP1=HTF 2 A 2131.600	Fp 1.000000	6-290 MV To Sur Rad Betw 189 & 52
Path 291:	IPT 2 CR IT 3 IN 190 IP1=HTF 2 A 1639.700	Fp 1.000000	6-291 MV To Sur Rad Betw 3 & 190
Path 292:	IPT 2 CR IT 3 IN 190 IP1=HTF 5 A 1639.700	Fp 1.000000	6-292 NC Betw 3 & 190
Path 293:	IPT 6 WP IT 190 IN 191 IP1=ND 6 A 1639.700	DT 0.5000000	6-293 Cnd Betw 190 & 191
Path 294:	IPT 0 (null) 6-294 NC Betw 191 & 48		
Path 295:	IPT 0 (null) 6-295 MV To Sur Rad Betw 191 & 48		
Path 296:	IPT 2 CR IT 1 IN 201 IP1=HTF 2 A 48.00000	Fp 1.000000	6-296 MV To Sur Rad Betw 1 & 201
Path 297:	IPT 2 CR IT 1 IN 201 IP1=HTF 1 A 48.00000	Fp 1.000000	6-297 NC Betw 1 & 201
Path 298:	IPT 0 (null) 6-298 Cnd Betw 201 & 202		
Path 299:	IPT 0 (null) 6-299 Cnd Betw 202 & 203		
Path 300:	IPT 2 CR IT 203 IN 2 IP1=HTF 2 A 48.00000	Fp 1.000000	6-300 MV To Sur Rad Betw 203 & 2
Path 301:	IPT 2 CR IT 203 IN 2 IP1=HTF 1 A 48.00000	Fp 1.000000	6-301 NC Betw 203 & 2
Path 302:	IPT 2 CR IT 1 IN 204 IP1=HTF 2 A 48.00000	Fp 1.000000	6-302 MV To Sur Rad Betw 1 & 204
Path 303:	IPT 2 CR IT 1 IN 204 IP1=HTF 1 A 48.00000	Fp 1.000000	6-303 NC Betw 1 & 204
Path 304:	IPT 0 (null) 6-304 Cnd Betw 204 & 205		
Path 305:	IPT 0 (null) 6-305 Cnd Betw 205 & 206		
Path 306:	IPT 0 (null) 6-306 MV To Sur Rad Betw 206 & 5		
Path 307:	IPT 0 (null) 6-307 NC Betw 206 & 5		

Path 308:	IPT 2 CR IT	1	IN 207	IP1=HTF	2	A	24.70000	Fp	1.000000	6-308 WV To Sur Rad Betw 1 & 207
Path 309:	IPT 2 CR IT	1	IN 207	IP1=HTF	1	A	24.70000	Fp	1.000000	6-309 NC Betw 1 & 207
Path 310:	IPT 0 (null)		6-310 Cnd Betw 207 & 208							
Path 311:	IPT 0 (null)		6-311 Cnd Betw 208 & 209							
Path 312:	IPT 0 (null)		6-312 WV To Sur Rad Betw 209 & 6							
Path 313:	IPT 0 (null)		6-313 NC Betw 209 & 6							
Path 314:	IPT 2 CR IT	1	IN 210	IP1=HTF	2	A	48.00000	Fp	1.000000	6-314 WV To Sur Rad Betw 1 & 210
Path 315:	IPT 2 CR IT	1	IN 210	IP1=HTF	1	A	48.00000	Fp	1.000000	6-315 NC Betw 1 & 210
Path 316:	IPT 0 (null)		6-316 Cnd Betw 210 & 211							
Path 317:	IPT 0 (null)		6-317 Cnd Betw 211 & 212							
Path 318:	IPT 2 CR IT 212	IN	3	IP1=HTF	2	A	48.00000	Fp	1.000000	6-318 WV To Sur Rad Betw 212 & 3
Path 319:	IPT 2 CR IT 212	IN	3	IP1=HTF	1	A	48.00000	Fp	1.000000	6-319 NC Betw 212 & 3
Path 320:	IPT 2 CR IT	1	IN 213	IP1=HTF	2	A	21.50000	Fp	1.000000	6-320 WV To Sur Rad Betw 1 & 213
Path 321:	IPT 2 CR IT	1	IN 213	IP1=HTF	1	A	21.50000	Fp	1.000000	6-321 NC Betw 1 & 213
Path 322:	IPT 0 (null)		6-322 Cnd Betw 213 & 214							
Path 323:	IPT 0 (null)		6-323 Cnd Betw 214 & 215							
Path 324:	IPT 0 (null)		6-324 WV To Sur Rad Betw 215 & 9							
Path 325:	IPT 0 (null)		6-325 NC Betw 215 & 9							
Path 326:	IPT 2 CR IT	1	IN 216	IP1=HTF	2	A	17.90000	Fp	1.000000	6-326 WV To Sur Rad Betw 1 & 216
Path 327:	IPT 2 CR IT	1	IN 216	IP1=HTF	1	A	17.90000	Fp	1.000000	6-327 NC Betw 1 & 216
Path 328:	IPT 0 (null)		6-328 Cnd Betw 216 & 217							
Path 329:	IPT 0 (null)		6-329 Cnd Betw 217 & 218							
Path 330:	IPT 0 (null)		6-330 WV To Sur Rad Betw 218 & 10							
Path 331:	IPT 0 (null)		6-331 NC Betw 218 & 10							
Path 332:	IPT 2 CR IT	1	IN 219	IP1=HTF	2	A	51.00000	Fp	1.000000	6-332 WV To Sur Rad Betw 1 & 219
Path 333:	IPT 2 CR IT	1	IN 219	IP1=HTF	1	A	51.00000	Fp	1.000000	6-333 NC Betw 1 & 219
Path 334:	IPT 0 (null)		6-334 Cnd Betw 219 & 220							
Path 335:	IPT 0 (null)		6-335 Cnd Betw 220 & 221							

Path 336:	IPT 0 (null)	6-336 WV To Sur Rad Betw 221 & 22		
Path 337:	IPT 0 (null)	6-337 NC Betw 221 & 22		
Path 338:	IPT 2 CR IT 1 IN 222 IP1=HTF 2 A 51.00000		Fp 1.000000	6-338 WV To Sur Rad Betw 1 & 222
Path 339:	IPT 2 CR IT 1 IN 222 IP1=HTF 1 A 51.00000		Fp 1.000000	6-339 NC Betw 1 & 222
Path 340:	IPT 0 (null)	6-340 Cnd Betw 222 & 223		
Path 341:	IPT 0 (null)	6-341 Cnd Betw 223 & 224		
Path 342:	IPT 0 (null)	6-342 WV To Sur Rad Betw 224 & 24		
Path 343:	IPT 0 (null)	6-343 NC Betw 224 & 24		
Path 344:	IPT 2 CR IT 1 IN 225 IP1=HTF 2 A 21.50000		Fp 1.000000	6-344 WV To Sur Rad Betw 1 & 225
Path 345:	IPT 2 CR IT 1 IN 225 IP1=HTF 1 A 21.50000		Fp 1.000000	6-345 NC Betw 1 & 225
Path 346:	IPT 0 (null)	6-346 Cnd Betw 225 & 226		
Path 347:	IPT 0 (null)	6-347 Cnd Betw 226 & 227		
Path 348:	IPT 0 (null)	6-348 WV To Sur Rad Betw 227 & 25		
Path 349:	IPT 0 (null)	6-349 NC Betw 227 & 25		
Path 350:	IPT 2 CR IT 2 IN 228 IP1=HTF 2 A 17.90000		Fp 1.000000	6-350 WV To Sur Rad Betw 2 & 228
Path 351:	IPT 2 CR IT 2 IN 228 IP1=HTF 1 A 17.90000		Fp 1.000000	6-351 NC Betw 2 & 228
Path 352:	IPT 0 (null)	6-352 Cnd Betw 228 & 229		
Path 353:	IPT 0 (null)	6-353 Cnd Betw 229 & 230		
Path 354:	IPT 0 (null)	6-354 WV To Sur Rad Betw 230 & 26		
Path 355:	IPT 0 (null)	6-355 NC Betw 230 & 26		
Path 356:	IPT 2 CR IT 2 IN 231 IP1=HTF 2 A 20.30000		Fp 1.000000	6-356 WV To Sur Rad Betw 1 & 231
Path 357:	IPT 2 CR IT 2 IN 231 IP1=HTF 1 A 20.30000		Fp 1.000000	6-357 NC Betw 1 & 231
Path 358:	IPT 0 (null)	6-358 Cnd Betw 231 & 232		
Path 359:	IPT 0 (null)	6-359 Cnd Betw 232 & 233		
Path 360:	IPT 0 (null)	6-360 WV To Sur Rad Betw 233 & 20		
Path 361:	IPT 0 (null)	6-361 NC Betw 233 & 20		
Path 362:	IPT 2 CR IT 2 IN 234 IP1=HTF 2 A 51.00000		Fp 1.000000	6-362 WV To Sur Rad Betw 2 & 234
Path 363:	IPT 2 CR IT 2 IN 234 IP1=HTF 1 A 51.00000		Fp 1.000000	6-363 NC Betw 2 & 234

Path 364:	IPT	0	(null)	6-364 Cnd Betw 234 & 235			
Path 365:	IPT	0	(null)	6-365 Cnd Betw 235 & 236			
Path 366:	IPT	0	(null)	6-366 WV To Sur Rad Betw 236 & 4			
Path 367:	IPT	0	(null)	6-367 NC Betw 236 & 4			
Path 368:	IPT	2	CR IT	3 IN 237 IP1=HTF	2	A 48.00000	Fp 1.000000 6-368 WV To Sur Rad Betw 3 & 237
Path 369:	IPT	2	CR IT	3 IN 237 IP1=HTF	1	A 48.00000	Fp 1.000000 6-369 NC Betw 3 & 237
Path 370:	IPT	0	(null)	6-370 Cnd Betw 237 & 238			
Path 371:	IPT	0	(null)	6-371 Cnd Betw 238 & 239			
Path 372:	IPT	0	(null)	6-372 WV To Sur Rad Betw 239 & 8			
Path 373:	IPT	0	(null)	6-373 NC Betw 239 & 8			
Path 374:	IPT	2	CR IT	3 IN 240 IP1=HTF	2	A 21.50000	Fp 1.000000 6-374 WV To Sur Rad Betw 3 & 240
Path 375:	IPT	2	CR IT	3 IN 240 IP1=HTF	1	A 21.50000	Fp 1.000000 6-375 NC Betw 3 & 240
Path 376:	IPT	0	(null)	6-376 Cnd Betw 240 & 241			
Path 377:	IPT	0	(null)	6-377 Cnd Betw 241 & 242			
Path 378:	IPT	0	(null)	6-378 WV To Sur Rad Betw 242 & 26			
Path 379:	IPT	0	(null)	6-379 NC Betw 242 & 26			
Path 380:	IPT	2	CR IT	3 IN 243 IP1=HTF	2	A 20.00000	Fp 1.000000 6-380 WV To Sur Rad Betw 3 & 243
Path 381:	IPT	2	CR IT	3 IN 243 IP1=HTF	1	A 20.00000	Fp 1.000000 6-381 NC Betw 3 & 243
Path 382:	IPT	0	(null)	6-382 Cnd Betw 243 & 244			
Path 383:	IPT	0	(null)	6-383 Cnd Betw 244 & 245			
Path 384:	IPT	0	(null)	6-384 WV To Sur Rad Betw 245 & 27			
Path 385:	IPT	0	(null)	6-385 NC Betw 245 & 27			
Path 386:	IPT	2	CR IT	3 IN 246 IP1=HTF	2	A 20.80000	Fp 1.000000 6-386 WV To Sur Rad Betw 3 & 246
Path 387:	IPT	2	CR IT	3 IN 246 IP1=HTF	1	A 20.80000	Fp 1.000000 6-387 NC Betw 3 & 246
Path 388:	IPT	0	(null)	6-388 Cnd Betw 246 & 247			
Path 389:	IPT	0	(null)	6-389 Cnd Betw 247 & 248			
Path 390:	IPT	0	(null)	6-390 WV To Sur Rad Betw 248 & 32			
Path 391:	IPT	0	(null)	6-391 NC Betw 248 & 32			

Path 392:	IPT 2 CR	IT 251	IN 252	IP1=HTF	13	A	3805.000	Fp	1.000000	6-392 Sur To Sur Rad Betw 251 & 252
Path 393:	IPT 2 CR	IT 251	IN 252	IP1=HTF	1	A	3805.000	Fp	1.000000	6-393 NC Betw 251 & 252
Path 394:	IPT 8 WP	IT 252	IN 253	IP1=ND	1	A	3805.000	DT	0.9966700E-02	6-394 Cnd Betw 252 & 253
Path 395:	IPT 2 CR	IT 253	IN 2	IP1=HTF	1	A	3805.000	Fp	1.000000	6-395 NC Betw 253 & 2
Path 396:	IPT 2 CR	IT 253	IN 2	IP1=HTF	2	A	3805.000	Fp	1.000000	6-396 WV To Sur Rad Betw 253 & 2
Path 397:	IPT 2 CR	IT 251	IN 254	IP1=HTF	13	A	606.0000	Fp	1.000000	6-397 Sur To Sur Rad Betw 251 & 254
Path 398:	IPT 2 CR	IT 251	IN 254	IP1=HTF	3	A	606.0000	Fp	1.000000	6-398 NC Betw 251 & 254
Path 399:	IPT 8 WP	IT 254	IN 255	IP1=ND	1	A	606.0000	DT	0.9966700E-02	6-399 Cnd Betw 254 & 255
Path 400:	IPT 2 CR	IT 255	IN 2	IP1=HTF	9	A	606.0000	Fp	1.000000	6-400 NC Betw 255 & 2
Path 401:	IPT 2 CR	IT 255	IN 2	IP1=HTF	2	A	606.0000	Fp	1.000000	6-401 WV To Sur Rad Betw 255 & 2
Path 402:	IPT 2 CR	IT 251	IN 2	IP1=HTF	11	A	67.00000	Fp	1.000000	6-402 Vent Induced Air Ex Betw 251 & 2
Path 403:	IPT 2 CR	IT 251	IN 256	IP1=HTF	13	A	1770.000	Fp	1.000000	6-403 Sur To Sur Rad Betw 251 & 256
Path 404:	IPT 2 CR	IT 251	IN 256	IP1=HTF	1	A	1770.000	Fp	1.000000	6-404 NC Betw 251 & 256
Path 405:	IPT 8 WP	IT 256	IN 257	IP1=ND	1	A	1770.000	DT	0.9966700E-02	6-405 Cnd Betw 256 & 257
Path 406:	IPT 2 CR	IT 251	IN 258	IP1=HTF	12	A	603.0000	Fp	1.000000	6-406 NC Betw 251 & 258
Path 407:	IPT 8 WP	IT 258	IN 259	IP1=ND	1	A	603.0000	DT	0.2419000E-01	6-407 Cnd Betw 258 & 259
Path 408:	IPT 2 CR	IT 251	IN 260	IP1=HTF	12	A	3487.000	Fp	1.000000	6-408 NC Betw 251 & 260
Path 409:	IPT 8 WP	IT 260	IN 261	IP1=ND	1	A	3487.000	DT	0.2023330E-01	6-409 Cnd Betw 260 & 261
Path 410:	IPT 0 (null)									6-410 Not Used
Path 411:	IPT 0 (null)									6-411 Not Used
Path 412:	IPT 2 CR	IT 264	IN 265	IP1=HTF	13	A	3780.000	Fp	1.000000	6-412 Sur To Sur Rad Betw 264 & 265
Path 413:	IPT 2 CR	IT 264	IN 265	IP1=HTF	1	A	3780.000	Fp	1.000000	6-413 NC Betw 264 & 265
Path 414:	IPT 8 WP	IT 265	IN 266	IP1=ND	1	A	3780.000	DT	0.9966700E-02	6-414 Cnd Betw 265 & 266
Path 415:	IPT 2 CR	IT 266	IN 3	IP1=HTF	1	A	3780.000	Fp	1.000000	6-415 NC Betw 266 & 3
Path 416:	IPT 2 CR	IT 266	IN 3	IP1=HTF	2	A	3780.000	Fp	1.000000	6-416 WV To Sur Rad Betw 266 & 3
Path 417:	IPT 2 CR	IT 264	IN 267	IP1=HTF	13	A	576.0000	Fp	1.000000	6-417 Sur To Sur Rad Betw 264 & 267
Path 418:	IPT 2 CR	IT 264	IN 267	IP1=HTF	3	A	576.0000	Fp	1.000000	6-418 NC Betw 264 & 267
Path 419:	IPT 8 WP	IT 267	IN 268	IP1=ND	1	A	576.0000	DT	0.9966700E-02	6-419 Cnd Betw 267 & 268



Path 420: IPT 2 CR IT 268 IN 3 IP1=MTF 9 A 576.0000	Fp 1.000000	6-420 NC Betw 268 & 3
Path 421: IPT 2 CR IT 268 IN 3 IP1=MTF 2 A 576.0000	Fp 1.000000	6-421 WV To Sur Rad Betw 268 & 3
Path 422: IPT 2 CR IT 264 IN 3 IP1=MTF 16 A 64.000000	Fp 1.000000	6-422 Vent Induced Air Ex Betw 264 & 3
Path 423: IPT 2 CR IT 264 IN 269 IP1=MTF 13 A 1400.000	Fp 1.000000	6-423 Sur To Sur Rad Betw 264 & 269
Path 424: IPT 2 CR IT 264 IN 269 IP1=MTF 1 A 1400.000	Fp 1.000000	6-424 NC Betw 264 & 269
Path 425: IPT 8 WP IT 269 IN 270 IP1=ND 1 A 1400.000	DT 0.9966700E-02	6-425 Cnd Betw 269 & 270
Path 426: IPT 2 CR IT 264 IN 271 IP1=MTF 12 A 573.0000	Fp 1.000000	6-426 NC Betw 264 & 271
Path 427: IPT 8 WP IT 271 IN 272 IP1=ND 1 A 573.0000	DT 0.2419000E-01	6-427 Cnd Betw 271 & 272
Path 428: IPT 2 CR IT 264 IN 273 IP1=MTF 12 A 3359.000	Fp 1.000000	6-428 NC Betw 264 & 273
Path 429: IPT 8 WP IT 273 IN 274 IP1=ND 1 A 3359.000	DT 0.2083330E-01	6-429 Cnd Betw 273 & 274
Path 430: IPT 0 (null) 6-430 Not Used		
Path 431: IPT 0 (null) 6-431 Not Used		
Path 432: IPT 2 CR IT 277 IN 278 IP1=MTF 13 A 1254.000	Fp 1.000000	6-432 Sur To Sur Rad Betw 277 & 278
Path 433: IPT 2 CR IT 277 IN 278 IP1=MTF 1 A 1254.000	Fp 1.000000	6-433 NC Betw 277 & 278
Path 434: IPT 8 WP IT 278 IN 279 IP1=ND 1 A 1254.000	DT 0.2083330E-01	6-434 Cnd Betw 278 & 279
Path 435: IPT 2 CR IT 279 IN 1 IP1=MTF 1 A 1254.000	Fp 1.000000	6-435 NC Betw 279 & 1
Path 436: IPT 2 CR IT 279 IN 1 IP1=MTF 2 A 1254.000	Fp 1.000000	6-436 WV To Sur Rad Betw 279 & 1
Path 437: IPT 2 CR IT 277 IN 280 IP1=MTF 13 A 1559.000	Fp 1.000000	6-437 Sur To Sur Rad Betw 277 & 280
Path 438: IPT 2 CR IT 277 IN 280 IP1=MTF 1 A 1559.000	Fp 1.000000	6-438 NC Betw 277 & 280
Path 439: IPT 8 WP IT 280 IN 281 IP1=ND 1 A 1559.000	DT 0.8716700E-02	6-439 Cnd Betw 280 & 281
Path 440: IPT 2 CR IT 281 IN 1 IP1=MTF 1 A 1559.000	Fp 1.000000	6-440 NC Betw 281 & 1
Path 441: IPT 2 CR IT 281 IN 1 IP1=MTF 2 A 1559.000	Fp 1.000000	6-441 WV To Sur Rad Betw 281 & 1
Path 442: IPT 2 CR IT 277 IN 282 IP1=MTF 13 A 136.0000	Fp 1.000000	6-442 Sur To Sur Rad Betw 277 & 282
Path 443: IPT 2 CR IT 277 IN 282 IP1=MTF 1 A 136.0000	Fp 1.000000	6-443 NC Betw 277 & 282
Path 444: IPT 8 WP IT 282 IN 283 IP1=ND 1 A 136.0000	DT 0.8716700E-02	6-444 Cnd Betw 282 & 283
Path 445: IPT 2 CR IT 283 IN 1 IP1=MTF 1 A 136.0000	Fp 1.000000	6-445 NC Betw 283 & 1
Path 446: IPT 2 CR IT 283 IN 1 IP1=MTF 2 A 136.0000	Fp 1.000000	6-446 WV To Sur Rad Betw 283 & 1
Path 447: IPT 2 CR IT 277 IN 284 IP1=MTF 13 A 371.0000	Fp 1.000000	6-447 Sur To Sur Rad Betw 277 & 284

Path 448: IPT 2 CR IT 277 IH 284 IP1=HTF 1 A 371.0000	Fp 1.000000	6-448 NC Betw 277 & 284
Path 449: IPT 8 WP IT 284 IH 285 IP1=ND 1 A 371.0000	DT 0.9966700E-02	6-449 Cnd Betw 284 & 285
Path 450: IPT 2 CR IT 285 IH 1 IP1=HTF 1 A 371.0000	Fp 1.000000	6-450 NC Betw 285 & 1
Path 451: IPT 2 CR IT 285 IH 1 IP1=HTF 2 A 371.0000	Fp 1.000000	6-451 WV To Sur Rad Betw 285 & 1
Path 452: IPT 2 CR IT 277 IH 286 IP1=HTF 13 A 663.0000	Fp 1.000000	6-452 Sur To Sur Rad Betw 277 & 286
Path 453: IPT 2 CR IT 277 IH 286 IP1=HTF 3 A 663.0000	Fp 1.000000	6-453 NC Betw 277 & 286
Path 454: IPT 8 WP IT 286 IH 287 IP1=ND 1 A 663.0000	DT 0.1120830E-01	6-454 Cnd Betw 286 & 287
Path 455: IPT 2 CR IT 287 IH 1 IP1=HTF 9 A 663.0000	Fp 1.000000	6-455 NC Betw 287 & 1
Path 456: IPT 2 CR IT 287 IH 1 IP1=HTF 2 A 663.0000	Fp 1.000000	6-456 WV To Sur Rad Betw 287 & 1
Path 457: IPT 2 CR IT 277 IH 288 IP1=HTF 13 A 33.40000	Fp 1.000000	6-457 Sur To Sur Rad Betw 277 & 288
Path 458: IPT 2 CR IT 277 IH 288 IP1=HTF 3 A 33.40000	Fp 1.000000	6-458 NC Betw 277 & 288
Path 459: IPT 8 WP IT 288 IH 289 IP1=ND 1 A 33.40000	DT 0.9966700E-02	6-459 Cnd Betw 288 & 289
Path 460: IPT 2 CR IT 289 IH 1 IP1=HTF 9 A 33.40000	Fp 1.000000	6-460 NC Betw 289 & 1
Path 461: IPT 2 CR IT 289 IH 1 IP1=HTF 2 A 33.40000	Fp 1.000000	6-461 WV To Sur Rad Betw 289 & 1
Path 462: IPT 2 CR IT 277 IH 1 IP1=HTF 14 A 14.14000	Fp 1.000000	6-462 Vent Induced Air Ex Betw 277 & 1
Path 463: IPT 2 CR IT 277 IH 297 IP1=HTF 12 A 2425.000	Fp 1.000000	6-463 NC Betw 277 & 297
Path 464: IPT 8 WP IT 297 IH 298 IP1=ND 1 A 2425.000	DT 0.2083330E-01	6-464 Cnd Betw 297 & 298
Path 465: IPT 0 (null) 6-465 Not Used		
Path 466: IPT 0 (null) 6-466 Not Used		
Path 467: IPT 0 (null) 6-467 Not Used		
Path 468: IPT 0 (null) 6-468 Not Used		
Path 469: IPT 0 (null) 6-469 Not Used		
Path 470: IPT 0 (null) 6-470 Not Used		
Path 471: IPT 2 CR IT 51 IH 301 IP1=HTF 2 A 301.9000	Fp 1.000000	6-471 WV To Sur Rad Betw 51 & 301
Path 472: IPT 2 CR IT 51 IH 301 IP1=HTF 1 A 301.9000	Fp 1.000000	6-472 NC Betw 51 & 301
Path 473: IPT 8 WP IT 301 IH 302 IP1=ND 6 A 301.9000	DT 0.5000000	6-473 Cnd Betw 301 & 302
Path 474: IPT 0 (null) 6-474 NC Betw 302 & 401		
Path 475: IPT 0 (null) 6-475 WV To Sur Rad Betw 302 & 401		

Path 476:	IPT 2 CR IT 51 IN 303 IP1=HTF 2 A 238.6000	Fp 1.000000	6-476 WV To Sur Rad Betw 51 & 303
Path 477:	IPT 2 CR IT 51 IN 303 IP1=HTF 1 A 238.6000	Fp 1.000000	6-477 NC Betw 51 & 303
Path 478:	IPT 8 WF IT 303 IN 304 IP1=ND 36 A 238.6000	DT 3.000000	6-478 Cnd Betw 303 & 304
Path 479:	IPT 2 CR IT 304 IN 17 IP1=HTF 1 A 238.6000	Fp 1.000000	6-479 NC Betw 304 & 17
Path 480:	IPT 2 CR IT 304 IN 17 IP1=HTF 2 A 238.6000	Fp 1.000000	6-480 WV To Sur Rad Betw 304 & 17
Path 481:	IPT 2 CR IT 51 IN 305 IP1=HTF 2 A 301.9000	Fp 1.000000	6-481 WV To Sur Rad Betw 51 & 305
Path 482:	IPT 2 CR IT 51 IN 305 IP1=HTF 1 A 301.9000	Fp 1.000000	6-482 NC Betw 51 & 305
Path 483:	IPT 8 WF IT 305 IN 306 IP1=ND 36 A 301.9000	DT 3.000000	6-483 Cnd Betw 305 & 306
Path 484:	IPT 2 CR IT 306 IN 18 IP1=HTF 1 A 301.9000	Fp 1.000000	6-484 NC Betw 306 & 18
Path 485:	IPT 2 CR IT 306 IN 18 IP1=HTF 2 A 301.9000	Fp 1.000000	6-485 WV To Sur Rad Betw 306 & 18
Path 486:	IPT 2 CR IT 51 IN 307 IP1=HTF 2 A 86.30000	Fp 1.000000	6-486 WV To Sur Rad Betw 51 & 307
Path 487:	IPT 2 CR IT 51 IN 307 IP1=HTF 1 A 86.30000	Fp 1.000000	6-487 NC Betw 51 & 307
Path 488:	IPT 8 WF IT 307 IN 308 IP1=ND 18 A 86.30000	DT 1.500000	6-488 Cnd Betw 307 & 308
Path 489:	IPT 0 (null) 6-489 NC Betw 308 & 19		
Path 490:	IPT 0 (null) 6-490 WV To Sur Rad Betw 308 & 19		
Path 491:	IPT 2 CR IT 51 IN 309 IP1=HTF 2 A 508.9000	Fp 1.000000	6-491 WV To Sur Rad Betw 51 & 309
Path 492:	IPT 2 CR IT 51 IN 309 IP1=HTF 1 A 508.9000	Fp 1.000000	6-492 NC Betw 51 & 309
Path 493:	IPT 8 WF IT 309 IN 310 IP1=ND 6 A 508.9000	DT 0.5000000	6-493 Cnd Betw 309 & 310
Path 494:	IPT 0 (null) 6-494 NC Betw 310 & 20		
Path 495:	IPT 0 (null) 6-495 WV To Sur Rad Betw 310 & 20		
Path 496:	IPT 2 CR IT 51 IN 311 IP1=HTF 2 A 527.4000	Fp 1.000000	6-496 WV To Sur Rad Betw 51 & 311
Path 497:	IPT 2 CR IT 51 IN 311 IP1=HTF 1 A 527.4000	Fp 1.000000	6-497 NC Betw 51 & 311
Path 498:	IPT 8 WF IT 311 IN 312 IP1=ND 6 A 527.4000	DT 0.5000000	6-498 Cnd Betw 311 & 312
Path 499:	IPT 0 (null) 6-499 NC Betw 312 & 54		
Path 500:	IPT 0 (null) 6-500 WV To Sur Rad Betw 312 & 54		
Path 501:	IPT 2 CR IT 51 IN 313 IP1=HTF 2 A 293.3000	Fp 1.000000	6-501 WV To Sur Rad Betw 51 & 313
Path 502:	IPT 2 CR IT 51 IN 313 IP1=HTF 1 A 293.3000	Fp 1.000000	6-502 NC Betw 51 & 313
Path 503:	IPT 8 WF IT 313 IN 314 IP1=ND 12 A 293.3000	DT 1.000000	6-503 Cnd Betw 313 & 314

Path 504: IPT 2 CR IT 314 IN 49 IP1=MTF 1 A 293.3000	Fp 1.000000	6-504 NC Betw 314 & 49
Path 505: IPT 2 CR IT 314 IN 49 IP1=MTF 2 A 293.3000	Fp 1.000000	6-505 WV To Sur Rad Betw 314 & 49
Path 506: IPT 2 CR 77 49 IN 315 IP1=MTF 2 A 251.6000	Fp 1.000000	6-506 WV To Sur Rad Betw 49 & 315
Path 507: IPT 2 CR IT 49 IN 315 IP1=MTF 1 A 251.6000	Fp 1.000000	6-507 NC Betw 49 & 315
Path 508: IPT 8 WP IT 315 IN 316 IP1=MD 6 A 251.6000	DT 0.5000000	6-508 Cnd Betw 315 & 316
Path 509: IPT 0 (null) 6-509 NC Betw 316 & 54		
Path 510: IPT 0 (null) 6-510 WV To Sur Rad Betw 316 & 54		
Path 511: IPT 2 CR IT 49 IN 317 IP1=MTF 2 A 672.8000	Fp 1.000000	6-511 WV To Sur Rad Betw 49 & 317
Path 512: IPT 2 CR IT 49 IN 317 IP1=MTF 1 A 672.8000	Fp 1.000000	6-512 NC Betw 49 & 317
Path 513: IPT 8 WP IT 317 IN 318 IP1=MD 42 A 672.8000	DT 3.500000	6-513 Cnd Betw 317 & 318
Path 514: IPT 2 CR IT 318 IN 405 IP1=MTF 1 A 672.8000	Fp 1.000000	6-514 NC Betw 318 & 405
Path 515: IPT 2 CR IT 318 IN 405 IP1=MTF 2 A 672.8000	Fp 1.000000	6-515 WV To Sur Rad Betw 318 & 405
Path 516: IPT 2 CR IT 49 IN 319 IP1=MTF 2 A 580.6000	Fp 1.000000	6-516 WV To Sur Rad Betw 49 & 319
Path 517: IPT 2 CR IT 49 IN 319 IP1=MTF 1 A 580.6000	Fp 1.000000	6-517 NC Betw 49 & 319
Path 518: IPT 8 WP IT 319 IN 320 IP1=MD 12 A 580.6000	DT 1.000000	6-518 Cnd Betw 319 & 320
Path 519: IPT 2 CR IT 320 IN 50 IP1=MTF 1 A 580.6000	Fp 1.000000	6-519 NC Betw 320 & 50
Path 520: IPT 2 CR IT 320 IN 50 IP1=MTF 2 A 580.6000	Fp 1.000000	6-520 WV To Sur Rad Betw 320 & 50
Path 521: IPT 2 CR IT 49 IN 321 IP1=MTF 2 A 152.7000	Fp 1.000000	6-521 WV To Sur Rad Betw 49 & 321
Path 522: IPT 2 CR IT 49 IN 321 IP1=MTF 1 A 152.7000	Fp 1.000000	6-522 NC Betw 49 & 321
Path 523: IPT 8 WP IT 321 IN 322 IP1=MD 24 A 152.7000	DT 1.968750	6-523 Cnd Betw 321 & 322
Path 524: IPT 2 CR IT 322 IN 13 IP1=MTF 1 A 152.7000	Fp 1.000000	6-524 NC Betw 322 & 13
Path 525: IPT 2 CR IT 322 IN 13 IP1=MTF 2 A 152.7000	Fp 1.000000	6-525 WV To Sur Rad Betw 322 & 13
Path 526: IPT 2 CR IT 49 IN 323 IP1=MTF 2 A 53.20000	Fp 1.000000	6-526 WV To Sur Rad Betw 49 & 323
Path 527: IPT 2 CR IT 49 IN 323 IP1=MTF 1 A 53.20000	Fp 1.000000	6-527 NC Betw 49 & 323
Path 528: IPT 8 WP IT 323 IN 324 IP1=MD 6 A 53.20000	DT 0.5000000	6-528 Cnd Betw 323 & 324
Path 529: IPT 0 (null) 6-529 NC Betw 324 & 38		
Path 530: IPT 0 (null) 6-530 WV To Sur Rad Betw 324 & 38		
Path 531: IPT 2 CR IT 49 IN 325 IP1=MTF 2 A 476.4000	Fp 1.000000	6-531 WV To Sur Rad Betw 49 & 325

Path 532:	IPT 2 CR IT 49 IN 325 IP1=MTF 1 A 476.4000	Fp 1.000000	6-532 NC Betw 49 & 325
Path 533:	IPT 8 WP IT 325 IN 326 IP1=ND 6 A 476.4000	DT 0.5000000	6-533 Cnd Betw 325 & 326
Path 534:	IPT 0 (null) 6-534 NC Betw 326 & 401		
Path 535:	IPT 0 (null) 6-535 WV To Sur Rad Betw 326 & 401		
Path 536:	IPT 2 CR IT 50 IN 327 IP1=MTF 2 A 672.8000	Fp 1.000000	6-536 WV To Sur Rad Betw 50 & 327
Path 537:	IPT 2 CR IT 50 IN 327 IP1=MTF 1 A 672.8000	Fp 1.000000	6-537 NC Betw 50 & 327
Path 538:	IPT 8 WP IT 327 IN 328 IP1=ND 42 A 672.8000	DT 3.500000	6-538 Cnd Betw 327 & 328
Path 539:	IPT 2 CR IT 328 IN 405 IP1=MTF 1 A 672.8000	Fp 1.000000	6-539 NC Betw 328 & 405
Path 540:	IPT 2 CR IT 328 IN 405 IP1=MTF 2 A 672.8000	Fp 1.000000	6-540 WV To Sur Rad Betw 328 & 405
Path 541:	IPT 2 CR IT 50 IN 329 IP1=MTF 2 A 257.1000	Fp 1.000000	6-541 WV To Sur Rad Betw 50 & 329
Path 542:	IPT 2 CR IT 50 IN 329 IP1=MTF 1 A 257.1000	Fp 1.000000	6-542 NC Betw 50 & 329
Path 543:	IPT 8 WP IT 329 IN 330 IP1=ND 6 A 257.1000	DT 0.5000000	6-543 Cnd Betw 329 & 330
Path 544:	IPT 0 (null) 6-544 NC Betw 330 & 53		
Path 545:	IPT 0 (null) 6-545 WV To Sur Rad Betw 330 & 53		
Path 546:	IPT 2 CR IT 50 IN 331 IP1=MTF 2 A 293.3000	Fp 1.000000	6-546 WV To Sur Rad Betw 50 & 331
Path 547:	IPT 2 CR IT 50 IN 331 IP1=MTF 1 A 293.3000	Fp 1.000000	6-547 NC Betw 50 & 331
Path 548:	IPT 8 WP IT 331 IN 332 IP1=ND 12 A 293.3000	DT 1.000000	6-548 Cnd Betw 331 & 332
Path 549:	IPT 2 CR IT 332 IN 52 IP1=MTF 1 A 293.3000	Fp 1.000000	6-549 NC Betw 332 & 52
Path 550:	IPT 2 CR IT 332 IN 52 IP1=MTF 2 A 293.3000	Fp 1.000000	6-550 WV To Sur Rad Betw 332 & 52
Path 551:	IPT 2 CR IT 50 IN 333 IP1=MTF 2 A 508.1000	Fp 1.000000	6-551 WV To Sur Rad Betw 50 & 333
Path 552:	IPT 2 CR IT 50 IN 333 IP1=MTF 1 A 508.1000	Fp 1.000000	6-552 NC Betw 50 & 333
Path 553:	IPT 8 WP IT 333 IN 334 IP1=ND 6 A 508.1000	DT 0.5000000	6-553 Cnd Betw 333 & 334
Path 554:	IPT 0 (null) 6-554 NC Betw 334 & 402		
Path 555:	IPT 0 (null) 6-555 WV To Sur Rad Betw 334 & 402		
Path 556:	IPT 2 CR IT 50 IN 335 IP1=MTF 2 A 58.80000	Fp 1.000000	6-556 WV To Sur Rad Betw 50 & 335
Path 557:	IPT 2 CR IT 50 IN 335 IP1=MTF 1 A 58.80000	Fp 1.000000	6-557 NC Betw 50 & 335
Path 558:	IPT 8 WP IT 335 IN 336 IP1=ND 6 A 58.80000	DT 0.5000000	6-558 Cnd Betw 335 & 336
Path 559:	IPT 0 (null) 6-559 NC Betw 336 & 37		

Path 560:	IPT 0 (null)	6-560 MV To Sur Rad Betw 336 & 37			
Path 561:	IPT 2 CR IT 50	IN 337 IP1=HTF 2 A 116.3000	Fp 1.000000	6-561 MV To Sur Rad Betw 50 & 337	
Path 562:	IPT 2 CR IT 50	IN 337 IP1=HTF 1 A 116.3000	Fp 1.000000	6-562 NC Betw 50 & 337	
Path 563:	IPT 8 WP IT 337	IN 338 IP1=ND 24 A 116.3000	DT 1.968750	6-563 Cnd Betw 337 & 338	
Path 564:	IPT 2 CR IT 338	IN 12 IP1=HTF 1 A 116.3000	Fp 1.000000	6-564 NC Betw 338 & 12	
Path 565:	IPT 2 CR IT 338	IN 12 IP1=HTF 2 A 116.3000	Fp 1.000000	6-565 MV To Sur Rad Betw 338 & 12	
Path 566:	IPT 2 CR IT 52	IN 339 IP1=HTF 2 A 527.4000	Fp 1.000000	6-566 MV To Sur Rad betw 52 & 339	
Path 567:	IPT 2 CR IT 52	IN 339 IP1=HTF 1 A 527.4000	Fp 1.000000	6-567 NC Betw 52 & 339	
Path 568:	IPT 8 WP IT 339	IN 340 IP1=ND 6 A 527.4000	DT 0.500000	6-568 Cnd Betw 339 & 340	
Path 569:	IPT 0 (null)	6-569 NC Betw 340 & 53			
Path 570:	IPT 0 (null)	6-570 MV To Sur Rad Betw 340 & 53			
Path 571:	IPT 2 CR IT 52	IN 341 IP1=HTF 2 A 508.9000	Fp 1.000000	6-571 MV To Sur Rad Betw 52 & 341	
Path 572:	IPT 2 CR IT 52	IN 341 IP1=HTF 1 A 508.9000	Fp 1.000000	6-572 NC Betw 52 & 341	
Path 573:	IPT 8 WP IT 341	IN 342 IP1=ND 6 A 508.9000	DT 0.500000	6-573 Cnd Betw 341 & 342	
Path 574:	IPT 0 (null)	6-574 NC Betw 342 & 27			
Path 575:	IPT 0 (null)	6-575 MV To Sur Rad Betw 342 & 27			
Path 576:	IPT 2 CR IT 52	IN 343 IP1=HTF 2 A 86.30000	Fp 1.000000	6-576 MV To Sur Rad Betw 52 & 343	
Path 577:	IPT 2 CR IT 52	IN 343 IP1=HTF 1 A 86.30000	Fp 1.000000	6-577 NC Betw 52 & 343	
Path 578:	IPT 8 WP IT 343	IN 344 IP1=ND 18 A 86.30000	DT 1.500000	6-578 Cnd Betw 343 & 344	
Path 579:	IPT 0 (null)	6-579 NC Betw 344 & 28			
Path 580:	IPT 0 (null)	6-580 MV To Sur Rad Betw 344 & 28			
Path 581:	IPT 2 CR IT 52	IN 345 IP1=HTF 2 A 301.9000	Fp 1.000000	6-581 MV To Sur Rad Betw 52 & 345	
Path 582:	IPT 2 CR IT 52	IN 345 IP1=HTF 1 A 301.9000	Fp 1.000000	6-582 NC Betw 52 & 345	
Path 583:	IPT 8 WP IT 345	IN 346 IP1=ND 36 A 301.9000	DT 3.000000	6-583 Cnd Betw 345 & 346	
Path 584:	IPT 2 CR IT 346	IN 29 IP1=HTF 1 A 301.9000	Fp 1.000000	6-584 NC Betw 346 & 29	
Path 585:	IPT 2 CR IT 346	IN 29 IP1=HTF 2 A 301.9000	Fp 1.000000	6-585 MV To Sur Rad Betw 346 & 29	
Path 586:	IPT 2 CR IT 52	IN 347 IP1=HTF 2 A 83.70000	Fp 1.000000	6-586 MV To Sur Rad Betw 52 & 347	
Path 587:	IPT 2 CR IT 52	IN 347 IP1=HTF 1 A 83.70000	Fp 1.000000	6-587 NC Betw 52 & 347	



Path 588: IPT 8 WP IT 347 IN 348 IP1=ND 36 A 83.70000	DT 3.000000	6-588 Cnd Betw 347 & 348
Path 589: IPT 2 CR IT 348 IN 30 IP1=HTF 1 A 83.70000	Fp 1.000000	6-589 NC Betw 348 & 30
Path 590: IPT 2 CR IT 348 IN 30 IP1=HTF 2 A 83.70000	Fp 1.000000	6-590 WV To Sur Rad Betw 348 & 30
Path 591: IPT 2 CR IT 52 IN 349 IP1=HTF 2 A 238.9000	Fp 1.000000	6-591 WV To Sur Rad Betw 52 & 349
Path 592: IPT 2 CR IT 52 IN 349 IP1=HTF 1 A 238.9000	Fp 1.000000	6-592 NC Betw 52 & 349
Path 593: IPT 8 WP IT 349 IN 350 IP1=ND 6 A 238.9000	DT 0.4800000	6-593 Cnd Betw 349 & 350
Path 594: IPT 0 (null) 6-594 NC Betw 350 & 31		
Path 595: IPT 0 (null) 6-595 WV To Sur Rad Betw 350 & 31		
Path 596: IPT 2 CR IT 52 IN 351 IP1=HTF 2 A 217.9000	Fp 1.000000	6-596 WV To Sur Rad Betw 52 & 351
Path 597: IPT 2 CR IT 52 IN 351 IP1=HTF 1 A 217.9000	Fp 1.000000	6-597 NC Betw 52 & 351
Path 598: IPT 8 WP IT 351 IN 352 IP1=ND 6 A 217.9000	DT 0.5000000	6-598 Cnd Betw 351 & 352
Path 599: IPT 0 (null) 6-599 NC Betw 352 & 402		
Path 600: IPT 0 (null) 6-600 WV To Sur Rad Betw 352 & 402		
Path 601: IPT 2 CR IT 51 IN 353 IP1=HTF 2 A 2451.000	Fp 1.000000	6-601 WV To Sur Rad Betw 51 & 353
Path 602: IPT 2 CR IT 51 IN 353 IP1=HTF 3 A 2451.000	Fp 1.000000	6-602 NC Betw 51 & 353
Path 603: IPT 8 WP IT 353 IN 354 IP1=ND 24 A 2451.000	DT 2.000000	6-603 Cnd Betw 353 & 354
Path 604: IPT 2 CR IT 354 IN 55 IP1=HTF 15 A 2451.000	Fp 1.000000	6-604 NC Betw 354 & 55
Path 605: IPT 0 (null) 6-605 WV To Sur Rad Betw 354 & 55		
Path 606: IPT 2 CR IT 49 IN 355 IP1=HTF 2 A 1349.000	Fp 1.000000	6-606 WV To Sur Rad Betw 49 & 355
Path 607: IPT 2 CR IT 49 IN 355 IP1=HTF 3 A 1349.000	Fp 1.000000	6-607 NC Betw 49 & 355
Path 608: IPT 8 WP IT 355 IN 356 IP1=ND 24 A 1349.000	DT 2.000000	6-608 Cnd Betw 355 & 356
Path 609: IPT 2 CR IT 356 IN 55 IP1=HTF 15 A 1349.000	Fp 1.000000	6-609 NC Betw 356 & 55
Path 610: IPT 0 (null) 6-610 WV To Sur Rad Betw 356 & 55		
Path 611: IPT 2 CR IT 49 IN 357 IP1=HTF 2 A 705.4000	Fp 1.000000	6-611 WV To Sur Rad Betw 49 & 357
Path 612: IPT 2 CR IT 49 IN 357 IP1=HTF 3 A 705.4000	Fp 1.000000	6-612 NC Betw 49 & 357
Path 613: IPT 8 WP IT 357 IN 358 IP1=ND 12 A 705.4000	DT 1.000000	6-613 Cnd Betw 357 & 358
Path 614: IPT 2 CR IT 358 IN 403 IP1=HTF 9 A 705.4000	Fp 1.000000	6-614 NC Betw 358 & 403
Path 615: IPT 2 CR IT 358 IN 403 IP1=HTF 2 A 705.4000	Fp 1.000000	6-615 WV To Sur Rad Betw 358 & 403

Path 616: IPT 2 CR IT 49 IN 359 IP1=MTF 2 A 838.8000	Pp 1.000000	6-616 MV To Sur Rad Betw 49 & 359
Path 617: IPT 2 CR IT 49 IN 359 IP1=MTF 3 A 838.8000	Pp 1.000000	6-617 NC Betw 49 & 359
Path 618: IPT 8 WP IT 359 IN 360 IP1=MD 12 A 838.8000	DT 1.000000	6-618 Cnd Betw 359 & 360
Path 619: IPT 2 CR IT 360 IN 404 IP1=MTF 9 A 838.8000	Pp 1.000000	6-619 NC Betw 360 & 404
Path 620: IPT 2 CR IT 360 IN 404 IP1=MTF 2 A 838.8000	Pp 1.000000	6-620 MV To Sur Rad Betw 360 & 404
Path 621: IPT 2 CR IT 50 IN 361 IP1=MTF 2 A 1349.000	Pp 1.000000	6-621 MV To Sur Rad Betw 50 & 361
Path 622: IPT 2 CR IT 50 IN 361 IP1=MTF 3 A 1349.000	Pp 1.000000	6-622 NC Betw 50 & 361
Path 623: IPT 8 WP IT 361 IN 362 IP1=MD 24 A 1349.000	DT 2.000000	6-623 Cnd Betw 361 & 362
Path 624: IPT 2 CR IT 362 IN 55 IP1=MTF 15 A 1349.000	Pp 1.000000	6-624 NC Betw 362 & 55
Path 625: IPT 0 (null) 6-625 MV To Sur Rad Betw 362 & 55		
Path 626: IPT 2 CR IT 50 IN 363 IP1=MTF 2 A 705.4000	Pp 1.000000	6-626 MV To Sur Rad Betw 50 & 363
Path 627: IPT 2 CR IT 50 IN 363 IP1=MTF 3 A 705.4000	Pp 1.000000	6-627 NC Betw 50 & 363
Path 628: IPT 8 WP IT 363 IN 364 IP1=MD 12 A 705.4000	DT 1.000000	6-628 Cnd Betw 362 & 364
Path 629: IPT 2 CR IT 364 IN 403 IP1=MTF 9 A 705.4000	Pp 1.000000	6-629 NC Betw 364 & 403
Path 630: IPT 2 CR IT 364 IN 403 IP1=MTF 2 A 705.4000	Pp 1.000000	6-630 MV To Sur Rad Betw 364 & 403
Path 631: IPT 2 CR IT 50 IN 365 IP1=MTF 2 A 839.5000	Pp 1.000000	6-631 MV To Sur Rad Betw 50 & 365
Path 632: IPT 2 CR IT 50 IN 365 IP1=MTF 3 A 839.5000	Pp 1.000000	6-632 NC Betw 50 & 365
Path 633: IPT 8 WP IT 365 IN 366 IP1=MD 12 A 839.5000	DT 1.000000	6-633 Cnd Betw 365 & 366
Path 634: IPT 2 CR IT 366 IN 404 IP1=MTF 9 A 839.5000	Pp 1.000000	6-634 NC Betw 366 & 404
Path 635: IPT 2 CR IT 366 IN 404 IP1=MTF 2 A 839.5000	Pp 1.000000	6-635 MV To Sur Rad Betw 366 & 404
Path 636: IPT 2 CR IT 52 IN 367 IP1=MTF 2 A 2352.000	Pp 1.000000	6-636 MV To Sur Rad Betw 52 & 367
Path 637: IPT 2 CR IT 52 IN 367 IP1=MTF 3 A 2352.000	Pp 1.000000	6-637 NC Betw 52 & 367
Path 638: IPT 8 WP IT 367 IN 368 IP1=MD 24 A 2352.000	DT 2.000000	6-638 Cnd Betw 367 & 368
Path 639: IPT 2 CR IT 368 IN 55 IP1=MTF 15 A 2352.000	Pp 1.000000	6-639 NC Betw 368 & 55
Path 640: IPT 0 (null) 6-640 MV To Sur Rad Betw 368 & 55		
Path 641: IPT 2 CR IT 51 IN 369 IP1=MTF 2 A 18.90000	Pp 1.000000	6-641 MV To Sur Rad Betw 51 & 369
Path 642: IPT 2 CR IT 51 IN 369 IP1=MTF 1 A 18.90000	Pp 1.000000	6-642 NC Betw 51 & 369
Path 643: IPT 0 (null) 6-643 Cnd Betw 369 & 370		

Path 644:	IPT 0 (null)	6-644 Cnd Betw 370 & 371			
Path 645:	IPT 0 (null)	6-645 WV To Sur Rad Betw 371 & 54			
Path 646:	IPT 0 (null)	6-646 NC Betw 371 & 54			
Path 647:	IPT 2 CR IT 49	IN 372 IP1=MTF 2 A 24.40000	Fp 1.000000		6-647 WV To Sur Rad Betw 49 & 372
Path 648:	IPT 2 CR IT 49	IN 372 IP1=MTF 1 A 24.40000	Fp 1.000000		6-648 NC Betw 49 & 372
Path 649:	IPT 0 (null)	6-649 Cnd Betw 372 & 373			
Path 650:	IPT 0 (null)	6-650 Cnd Betw 373 & 374			
Path 651:	IPT 0 (null)	6-651 WV To Sur Rad Betw 374 & 54			
Path 652:	IPT 0 (null)	6-652 NC Betw 374 & 54			
Path 653:	IPT 2 CR IT 49	IN 375 IP1=MTF 2 A 20.80000	Fp 1.000000		6-653 WV To Sur Rad Betw 49 & 375
Path 654:	IPT 2 CR IT 49	IN 375 IP1=MTF 1 A 20.80000	Fp 1.000000		6-654 NC Betw 49 & 375
Path 655:	IPT 1 CR IT 375	IN 376 A 20.80000 DT 0.00000000	DN 0.68000000E-01		6-655 Cnd Betw 375 & 376
Path 656:	IPT 1 CR IT 376	IN 377 A 20.80000 DT 0.68000000E-01	DN 0.00000000		6-656 Cnd Betw 376 & 377
Path 657:	IPT 2 CR IT 377	IN 50 IP1=MTF 2 A 20.80000	Fp 1.000000		6-657 WV To Sur Rad Betw 377 & 50
Path 658:	IPT 2 CR IT 377	IN 50 IP1=MTF 1 A 20.80000	Fp 1.000000		6-658 NC Betw 377 & 50
Path 659:	IPT 2 CR IT 49	IN 378 IP1=MTF 2 A 14.60000	Fp 1.000000		6-659 WV To Sur Rad Betw 49 & 378
Path 660:	IPT 2 CR IT 49	IN 378 IP1=MTF 1 A 14.60000	Fp 1.000000		6-660 NC Betw 49 & 378
Path 661:	IPT 1 CR IT 378	IN 379 A 14.60000 DT 0.00000000	DN 0.68000000E-01		6-661 Cnd Betw 378 & 379
Path 662:	IPT 1 CR IT 379	IN 380 A 14.60000 DT 0.68000000E-01	DN 0.00000000		6-662 Cnd Betw 379 & 380
Path 663:	IPT 2 CR IT 380	IN 50 IP1=MTF 2 A 14.60000	Fp 1.000000		6-663 WV To Sur Rad Betw 380 & 50
Path 664:	IPT 2 CR IT 380	IN 50 IP1=MTF 1 A 14.60000	Fp 1.000000		6-664 NC Betw 380 & 50
Path 665:	IPT 2 CR IT 49	IN 381 IP1=MTF 2 A 20.80000	Fp 1.000000		6-665 WV To Sur Rad Betw 49 & 381
Path 666:	IPT 2 CR IT 49	IN 381 IP1=MTF 1 A 20.80000	Fp 1.000000		6-666 NC Betw 49 & 381
Path 667:	IPT 0 (null)	6-667 Cnd Betw 381 & 382			
Path 668:	IPT 0 (null)	6-668 Cnd Betw 382 & 383			
Path 669:	IPT 0 (null)	6-669 WV To Sur Rad Betw 383 & 401			
Path 670:	IPT 0 (null)	6-670 NC Betw 383 & 401			
Path 671:	IPT 2 CR IT 50	IN 384 IP1=MTF 2 A 18.90000	Fp 1.000000		6-671 WV To Sur Rad Betw 50 & 384

Path 672:	IPT 2 CR IT 50	IN 384	IP1=HTF 1 A 18.90000	Fp 1.000000	6-672 NC Betw 50 & 384
Path 673:	IPT 0 (null)	6-673 Cnd Betw 384 & 385			
Path 674:	IPT 0 (null)	6-674 Cnd Betw 385 & 386			
Path 675:	IPT 0 (null)	6-675 WV To Sur Rad Betw 386 & 53			
Path 676:	IPT 0 (null)	6-676 NC Betw 386 & 53			
Path 677:	IPT 2 CR IT 50	IN 387	IP1=HTF 2 A 20.80000	Fp 1.000000	6-677 WV To Sur Rad Betw 50 & 387
Path 678:	IPT 2 CR IT 50	IN 387	IP1=HTF 1 A 20.80000	Fp 1.000000	6-678 NC Betw 50 & 387
Path 679:	IPT 0 (null)	6-679 Cnd Betw 387 & 388			
Path 680:	IPT 0 (null)	6-680 Cnd Betw 388 & 389			
Path 681:	IPT 0 (null)	6-681 WV To Sur Rad Betw 389 & 402			
Path 682:	IPT 0 (null)	6-682 NC Betw 389 & 402			
Path 683:	IPT 2 CR IT 52	IN 390	IP1=HTF 2 A 18.90000	Fp 1.000000	6-683 WV To Sur Rad Betw 52 & 390
Path 684:	IPT 2 CR IT 52	IN 390	IP1=HTF 1 A 18.90000	Fp 1.000000	6-684 NC Betw 52 & 390
Path 685:	IPT 0 (null)	6-685 Cnd Betw 390 & 391			
Path 686:	IPT 0 (null)	6-686 Cnd Betw 391 & 392			
Path 687:	IPT 0 (null)	6-687 WV To Sur Rad Betw 392 & 53			
Path 688:	IPT 0 (null)	6-688 NC Betw 392 & 53			
Path 689:	IPT 2 CR IT 1	IN 291	IP1=HTF 2 A 1369.000	Fp 1.000000	6-689 WV To Sur Rad Betw 1 & 291
Path 690:	IPT 2 CR IT 1	IN 291	IP1=HTF 1 A 1369.000	Fp 1.000000	6-690 NC Betw 1 & 291
Path 691:	IPT 8 WP IT 291	IN 292	IP1=ND 1 A 1369.000	DT 0.2083300E-01	6-691 Cnd Betw 291 & 292
Path 692:	IPT 0 (null)	6-692 NC Betw 292 & 290			
Path 693:	IPT 0 (null)	6-693 WV To Sur Rad Betw 292 & 290			
Path 694:	IPT 2 CR IT 1	IN 293	IP1=HTF 2 A 1056.000	Fp 1.000000	6-694 WV To Sur Rad Betw 1 & 293
Path 695:	IPT 2 CR IT 1	IN 293	IP1=HTF 1 A 1056.000	Fp 1.000000	6-695 NC Betw 1 & 293
Path 696:	IPT 8 WP IT 293	IN 294	IP1=ND 1 A 1056.000	DT 0.8716700E-02	6-696 Cnd Betw 293 & 294
Path 697:	IPT 0 (null)	6-697 NC Betw 294 & 290			
Path 698:	IPT 0 (null)	6-698 WV To Sur Rad Betw 294 & 290			
Path 699:	IPT 2 CR IT 1	IN 295	IP1=HTF 2 A 322.0000	Fp 1.000000	6-699 WV To Sur Rad Betw 1 & 295

Path 700: IPT 2 CR IT 1 IN 295 IP1=HTF 5 A 322.0000	Pp 1.000000	6-700 MC Betw 1 & 295
Path 701: IPT 8 WP IT 285 IN 296 IP1=ND 1 A 322.0000	DT 0.1120630E-01	6-701 Cnd Betw 295 & 296
Path 702: IPT 0 (null) 6-702 MC Betw 296 & 290		
Path 703: IPT 0 (null) 6-703 WV To Sur Rad Betw 296 & 290		
Path 704: IPT 2 CR IT 2 IN 158 IP1=HTF 2 A 549.0000	Pp 1.000000	6-704 WV To Sur Rad Betw 1 & 158
Path 705: IPT 2 CR IT 2 IN 158 IP1=HTF 1 A 549.0000	Pp 1.000000	6-705 MC Betw 1 & 158
Path 706: IPT 8 WP IT 158 IN 159 IP1=ND 1 A 549.0000	DT 0.8716700E-02	6-706 Cnd Betw 158 & 159
Path 707: IPT 2 CR IT 3 IN 160 IP1=HTF 2 A 448.0000	Pp 1.000000	6-707 WV To Sur Rad Betw 1 & 160
Path 708: IPT 2 CR IT 3 IN 160 IP1=HTF 1 A 448.0000	Pp 1.000000	6-708 MC Betw 1 & 160
Path 709: IPT 8 WP IT 160 IN 161 IP1=ND 1 A 448.0000	DT 0.8716700E-02	6-709 Cnd Betw 160 & 161

6a. Input Array Controls: IVIP = 0; there are no input arrays.

## 7. Input data for NH = 16 Heat Transfer Functions (HTF):

HTF 1: INT 3 Natural Convection: 7A-1 NC Vertical Plate, Turbulent 7B-1  
 7a. IH1, X-function 0 IH2, Direction control 0 IH3, Alternate HTF 0 IH4, T-function 0  
 7b. C1, Constant factor 0.1900000 C2, Exponent 0.3300000

HTF 2: INT 4 General Radiation: 7A-2 WV To Sur Rad (Sur Em. Given in SF 28) 7B-2 WV Emissivity & Absorbtivity  
 7a. IH1, X-function 28 IH2, Direction control 0 IH3, Alternate HTF 0 IH4, T-function 0  
 7b. C1, Constant factor 0.1500000

HTF 3: INT 3 Natural Convection: 7A-3 NC OR Cnd to a Ceiling 7B-3  
 7a. IH1, X-function 0 IH2, Direction control 1 IH3, Alternate HTF 4 IH4, T-function 0  
 7b. C1, Constant factor 0.2200000 C2, Exponent 0.3300000

HTF 4: INT 1 Specified Time (X) and/or Temperature (T) function: 7A-4 Cnd to a Ceiling 7B-4 Resistance for Cnd  
 7a. IH1, X-function 0 IH2, Direction control 0 IH3, Alternate HTF 0 IH4, T-function 0  
 7b. C1, Constant factor 1.0000000E-03

HTF 5: INT 3 Natural Convection: 7A-5 NC OR Cnd to a Floor 7B-5  
 7a. IH1, X-function 0 IH2, Direction control -1 IH3, Alternate HTF 6 IH4, T-function 0  
 7b. C1, Constant factor 0.2200000 C2, Exponent 0.3300000

HTF 6: INT 1 Specified Time (X) and/or Temperature (T) function: 7A-6 Cnd to a Floor 7B-6 Resistance for Cnd  
 7a. IH1, X-function 0 IH2, Direction control 0 IH3, Alternate HTF 0 IH4, T-function 0  
 7b. C1, Constant factor 1.0000000E-03

HTF 7: INT 3 Natural Convection: 7A-7 NC OR Cnd to a Ceiling 7B-7  
 7a. IH1, X-function 0 IH2, Direction control -1 IH3, Alternate HTF 8 IH4, T-function 0  
 7b. C1, Constant factor 0.2200000 C2, Exponent 0.3300000

HTF 8: INT 1 Specified Time (X) and/or Temperature (T) function: 7A-8 Cnd to a Ceiling 7B-8 Resistance for Cnd  
 7a. IH1, X-function 0 IH2, Direction control 0 IH3, Alternate HTF 0 IH4, T-function 0  
 7b. C1, Constant factor 1.0000000E-03

HTF 9: INT 3 Natural Convection: 7A-9 NC OR Cnd to a Floor 7B-9  
 7a. IH1, X-function 0 IH2, Direction control 1 IH3, Alternate HTF 10 IH4, T-function 0  
 7b. C1, Constant factor 0.2200000 C2, Exponent 0.3300000



MTF 10: INT 1 Specified Time (X) and/or Temperature (T) function: 7A-10 Cnd to a Floor 7B-10 Resistance for Cnd  
7a. IH1, X-function 0 IH2, Direction control 0 IH3, Alternate MTF 0 IH4, T-function 0  
7b. C1, Constant factor 1.000000E-03

MTF 11: INT 3 Natural Convection: 7A-11 Bouyancy Driven Heat Ex. From AHER 1 Cabinets 7B-11  
7a. IH1, X-function 0 IH2, Direction control 0 IH3, Alternate MTF 0 IH4, T-function 0  
7b. C1, Constant factor 21.55700 C2, Exponent 0.4607000

MTF 12: INT 1 Specified Time (X) and/or Temperature (T) function: 7A-12 NC Betw Cabinet Air and Struct. Steel 7B-12  
7a. IH1, X-function 0 IH2, Direction control 0 IH3, Alternate MTF 0 IH4, T-function 0  
7b. C1, Constant factor 0.7000000

MTF 13: INT 4 General Radiation: 7A-13 Surface to Surface Rad 7B-13 Value of Parameter F  
7a. IH1, X-function 12 IH2, Direction control 0 IH3, Alternate MTF 0 IH4, T-function 0  
7b. C1, Constant factor 0.5000000

MTF 14: INT 3 Natural Convection: 7A-14 Bouyancy Driven Heat Ex. From CR Cabinets 7B-14  
7a. IH1, X-function 0 IH2, Direction control 0 IH3, Alternate MTF 0 IH4, T-function 0  
7b. C1, Constant factor 88.85600 C2, Exponent 0.4607000

MTF 15: INT 1 Specified Time (X) and/or Temperature (T) function: 7A-15 MTC for Surfaces Exposed to Sol-Air 7B-15  
7a. IH1, X-function 0 IH2, Direction control 0 IH3, Alternate MTF 0 IH4, T-function 0  
7b. C1, Constant factor 3.000000

MTF 16: INT 3 Natural Convection: 7A-16 Bouyancy Driven Heat Ex. From AHER 2 Cabinets 7B-16  
7a. IH1, X-function 0 IH2, Direction control 0 IH3, Alternate MTF 0 IH4, T-function 0  
7b. C1, Constant factor 18.43000 C2, Exponent 0.4607000

For any Constant Factor or Dimension C1 = 0, see respective Path data for value Fp.

7.1 There are NO Internal Heat Gains (type 7.1) in the model.

7.2 There are NO Mass Blowdowns (type 7.2) in the model.

## 8. Input data for NF = 32 Simple Functions (SF):

SF No. 1	T (eF)	70.0000
1 pts.	Rho (lb/cf)	7.100000E-02
SF No. 2	T (eF)	70.0000
1 pts.	Cv (B/lbeF)	0.170000
SF No. 3	T (eF)	70.0000
1 pts.	k (B/h-feF)	1.600000E-02
SF No. 4	T (eF)	70.0000
1 pts.	FMT	0.240000
SF No. 5	T (eF)	70.0000
1 pts.	Rho (lb/cf)	125.000
SF No. 6	T (eF)	70.0000
1 pts.	FMT	0.160000
SF No. 7	T (eF)	70.0000
1 pts.	k (B/h-feF)	0.400000
SF No. 8	T (eF)	70.0000
1 pts.	FMT	0.160000
SF No. 9	T (eF)	70.0000
1 pts.	Rho (lb/cf)	145.000
SF No. 10	T (eF)	70.0000
1 pts.	FMT	0.156000
SF No. 11	T (eF)	70.0000
1 pts.	k (B/h-feF)	0.920000
SF No. 12	T (eF)	70.0000
1 pts.	Cp (B/lbeF)	0.156000
SF No. 13	T (eF)	70.0000
1 pts.	Rho (lb/cf)	490.000
SF No. 14	T (eF)	70.0000
1 pts.	Cv (B/lbeF)	0.120000
SF No. 15	T (eF)	70.0000
1 pts.	k (B/h-feF)	27.0000
SF No. 16	T (eF)	70.0000
1 pts.	Cp (B/lbeF)	0.120000
SF No. 17	T (eF)	70.0000
1 pts.	Rho (lb/cf)	100.000
SF No. 18	T (eF)	70.0000
1 pts.	Cv (B/lbeF)	0.200000

SP No. 19	T (SP)	70.0000	
1 pts.	k (B/h-fSP)	0.290000	
SP No. 20	T (SP)	70.0000	
1 pts.	Cp (B/lbeP)	0.200000	
SP No. 21	Y	70.0000	
1 pts.	F(Y)	18.1000	
SP No. 22	Y	70.0000	
1 pts.	F(Y)	0.320000	
SP No. 23	Y	70.0000	
1 pts.	F(Y)	2.350000E-02	
SP No. 24	Y	70.0000	
1 pts.	F(Y)	0.320000	
SP No. 25	X (hrs)	0.000000	
1 pts.	GB x	112424.	
SP No. 26	X (hrs)	0.000000	
1 pts.	GB x	32198.0	
SP No. 27	X (hrs)	0.000000	
1 pts.	GB x	27282.0	
SP No. 28	X (hrs)	0.000000	
1 pts.	FIX	0.950000	
SP No. 29	X (hrs)	0.000000	
1 pts.	GB x	128433.	
SP No. 30	Y	1.000000E-06	1.000000E-04
2 pts.	F(Y)	90.0000	150.000
SP No. 31	Y	1.000000E-06	1.000000E-04
2 pts.	F(Y)	104.000	110.000
SP No. 32	X (hrs)	0.000000	
1 pts.	FIX	0.900000	
SP No. 33	X (hrs)	0.000000	
1 pts.	GB x	109129.	
SP No. 34	X (hrs)	0.000000	
1 pts.	GB x	112424.	
SP No. 35	X (hrs)	0.000000	
1 pts.	GB x	34404.0	
SP No. 36	X (hrs)	0.000000	
1 pts.	GB x	34404.0	

SP No. 37 X (hrs) 0.000000  
1 pts. GB x 34404.0

SP No. 38 X (hrs) 0.000000  
1 pts. GB x 34404.0

9. Namelist NAME1 Input (\*) or Default Values: 9 NAMELIST

IPOP *	-1	IPO	0	IPOCFM *	-1	IPOCHK *	-1	IPODN	1	IPODND	1	IPOFCV *	-1	IPOHF	1
IPOP	1	IPOFA *	-1	IPOPI *	0	IPOPT7 *	-1	IPOQLT *	-1	IPOQV	1	IPOV	1	IPOVI *	0
IPOW *	-1	IPOWC *	-1	IPOWV *	-1	IPOYMF *	-1	MPOP *	20	MDNOIT	100	MxSSIT *	2000	NMAXER	15
NSTPMX *	50000	NSTPOP	1	IFTF	0	IFPA	0	IFWCIN	0	IFDN	0	IPWV	0	IPPCV	0
IPOLTY	0	IPYMF	0	IPYMFN	0	IPFW	0	IPQF	0	IPSCFM	0	IPNCIF	0	IPTY	1
IPFA	1	IPWCIN	1	IPDN	1	IPWV	1	IPPCV	1	IPOLTY	1	IPYMF	1	IPYMFN	1
IPFW	1	IPQF	1	IPSCFM	1	IPNCIF	1	IPACFM	1	IPAN	0	IPAP	0		

BKTM	16.01600	CLATM	14.69600	CGRAV	0.4169800E-09	CGSCH	1545.430	CMRFT	778.2600
CTRNF	0.1000000E-01	CTRTF	459.6700	DNBIAS	2.000000	ENI	0.3000000E-06	ELO	0.3000000E-07
FACTOR	1.010000	FIMC	1.260000	GMKXAC	0.3000000	GRAT	1.000000	PAD	100000.0
RLHMIN	0.1000000E-24	SHDMIN	0.2500000E-02	Sigma	0.1713000E-08	SSTol	0.1000000E-05	TRIAS	560.0000
TRC	1.000000	UDBIAS	100.0000	UGOMIN	0.5000000	VFGOMN	100.0000	WBIAS	1000000.
XACD	0.1000000E-01	XACMN *	0.1000000E-09	XTOL	0.1000000E-09	YMPMIN	0.1000000E-19		

For Wall 1, Path 3, IPT 8, Added Nodes 406 thru 416, Added Paths 710 thru 720  
 For Wall 2, Path 8, IPT 8, Added Nodes 417 thru 421, Added Paths 721 thru 725  
 For Wall 3, Path 13, IPT 8, Added Nodes 422 thru 426, Added Paths 726 thru 730  
 For Wall 4, Path 18, IPT 8, Added Nodes 427 thru 467, Added Paths 731 thru 771  
 For Wall 5, Path 23, IPT 8, Added Nodes 468 thru 472, Added Paths 772 thru 776  
 For Wall 6, Path 28, IPT 8, Added Nodes 473 thru 477, Added Paths 777 thru 781  
 For Wall 7, Path 33, IPT 8, Added Nodes 478 thru 488, Added Paths 782 thru 792  
 For Wall 8, Path 38, IPT 8, Added Nodes 489 thru 493, Added Paths 793 thru 797  
 For Wall 9, Path 43, IPT 8, Added Nodes 494 thru 498, Added Paths 798 thru 802  
 For Wall 10, Path 48, IPT 8, Added Nodes 499 thru 503, Added Paths 803 thru 807  
 For Wall 11, Path 53, IPT 8, Added Nodes 504 thru 526, Added Paths 808 thru 830  
 For Wall 12, Path 58, IPT 8, Added Nodes 527 thru 549, Added Paths 831 thru 853  
 For Wall 13, Path 63, IPT 8, Added Nodes 550 thru 554, Added Paths 854 thru 858  
 For Wall 14, Path 68, IPT 8, Added Nodes 555 thru 559, Added Paths 859 thru 863  
 For Wall 15, Path 73, IPT 8, Added Nodes 560 thru 564, Added Paths 864 thru 868  
 For Wall 16, Path 78, IPT 8, Added Nodes 565 thru 569, Added Paths 869 thru 873  
 For Wall 17, Path 83, IPT 8, Added Nodes 570 thru 604, Added Paths 874 thru 908  
 For Wall 18, Path 88, IPT 8, Added Nodes 605 thru 639, Added Paths 909 thru 943  
 For Wall 19, Path 93, IPT 8, Added Nodes 640 thru 656, Added Paths 944 thru 960  
 For Wall 20, Path 98, IPT 8, Added Nodes 657 thru 661, Added Paths 961 thru 965  
 For Wall 21, Path 103, IPT 8, Added Nodes 662 thru 666, Added Paths 966 thru 970  
 For Wall 22, Path 108, IPT 8, Added Nodes 667 thru 683, Added Paths 971 thru 987  
 For Wall 23, Path 113, IPT 8, Added Nodes 684 thru 718, Added Paths 988 thru 1022  
 For Wall 24, Path 118, IPT 8, Added Nodes 719 thru 753, Added Paths 1023 thru 1057  
 For Wall 25, Path 123, IPT 8, Added Nodes 754 thru 758, Added Paths 1058 thru 1062  
 For Wall 26, Path 128, IPT 8, Added Nodes 759 thru 763, Added Paths 1063 thru 1067  
 For Wall 27, Path 133, IPT 8, Added Nodes 764 thru 768, Added Paths 1068 thru 1072  
 For Wall 28, Path 138, IPT 8, Added Nodes 769 thru 773, Added Paths 1073 thru 1077  
 For Wall 29, Path 143, IPT 8, Added Nodes 774 thru 778, Added Paths 1078 thru 1082  
 For Wall 30, Path 148, IPT 8, Added Nodes 779 thru 783, Added Paths 1083 thru 1087  
 For Wall 31, Path 153, IPT 8, Added Nodes 784 thru 788, Added Paths 1088 thru 1092  
 For Wall 32, Path 158, IPT 8, Added Nodes 789 thru 793, Added Paths 1093 thru 1097  
 For Wall 33, Path 163, IPT 8, Added Nodes 794 thru 798, Added Paths 1098 thru 1102  
 For Wall 34, Path 168, IPT 8, Added Nodes 799 thru 803, Added Paths 1103 thru 1107

For Wall 43, Path 213, IPT 8, Added Nodes 806 thru 808, Added Paths 1108 thru 1112  
 For Wall 48, Path 238, IPT 8, Added Nodes 809 thru 813, Added Paths 1113 thru 1117  
 For Wall 49, Path 243, IPT 8, Added Nodes 814 thru 818, Added Paths 1118 thru 1122  
 For Wall 51, Path 253, IPT 8, Added Nodes 819 thru 823, Added Paths 1123 thru 1127  
 For Wall 52, Path 258, IPT 8, Added Nodes 824 thru 826, Added Paths 1128 thru 1130  
 For Wall 53, Path 263, IPT 8, Added Nodes 827 thru 829, Added Paths 1131 thru 1133  
 For Wall 54, Path 266, IPT 8, Added Nodes 830 thru 834, Added Paths 1134 thru 1138  
 For Wall 55, Path 273, IPT 8, Added Nodes 835 thru 839, Added Paths 1139 thru 1143  
 For Wall 56, Path 278, IPT 8, Added Nodes 840 thru 842, Added Paths 1144 thru 1146  
 For Wall 57, Path 283, IPT 8, Added Nodes 843 thru 847, Added Paths 1147 thru 1151  
 For Wall 58, Path 288, IPT 8, Added Nodes 848 thru 850, Added Paths 1152 thru 1154  
 For Wall 59, Path 293, IPT 8, Added Nodes 851 thru 855, Added Paths 1155 thru 1159  
 For Wall 77, Path 473, IPT 8, Added Nodes 856 thru 860, Added Paths 1160 thru 1164  
 For Wall 78, Path 478, IPT 8, Added Nodes 861 thru 895, Added Paths 1165 thru 1199  
 For Wall 79, Path 483, IPT 8, Added Nodes 896 thru 930, Added Paths 1200 thru 1234  
 For Wall 80, Path 488, IPT 8, Added Nodes 931 thru 947, Added Paths 1235 thru 1251  
 For Wall 81, Path 493, IPT 8, Added Nodes 948 thru 952, Added Paths 1252 thru 1256  
 For Wall 82, Path 496, IPT 8, Added Nodes 953 thru 957, Added Paths 1257 thru 1261  
 For Wall 83, Path 503, IPT 8, Added Nodes 958 thru 968, Added Paths 1262 thru 1272  
 For Wall 84, Path 508, IPT 8, Added Nodes 969 thru 973, Added Paths 1273 thru 1277  
 For Wall 85, Path 513, IPT 8, Added Nodes 974 thru 1014, Added Paths 1278 thru 1318  
 For Wall 86, Path 518, IPT 8, Added Nodes 1015 thru 1025, Added Paths 1319 thru 1329  
 For Wall 87, Path 523, IPT 8, Added Nodes 1026 thru 1048, Added Paths 1330 thru 1352  
 For Wall 88, Path 528, IPT 8, Added Nodes 1049 thru 1053, Added Paths 1353 thru 1357  
 For Wall 89, Path 533, IPT 8, Added Nodes 1054 thru 1058, Added Paths 1358 thru 1362  
 For Wall 90, Path 538, IPT 8, Added Nodes 1059 thru 1099, Added Paths 1363 thru 1403  
 For Wall 91, Path 543, IPT 8, Added Nodes 1100 thru 1104, Added Paths 1404 thru 1408  
 For Wall 92, Path 548, IPT 8, Added Nodes 1105 thru 1115, Added Paths 1409 thru 1419  
 For Wall 93, Path 553, IPT 8, Added Nodes 1116 thru 1120, Added Paths 1420 thru 1424  
 For Wall 94, Path 558, IPT 8, Added Nodes 1121 thru 1125, Added Paths 1425 thru 1429  
 For Wall 95, Path 563, IPT 8, Added Nodes 1126 thru 1148, Added Paths 1430 thru 1452  
 For Wall 96, Path 568, IPT 8, Added Nodes 1149 thru 1153, Added Paths 1453 thru 1457  
 For Wall 97, Path 573, IPT 8, Added Nodes 1154 thru 1158, Added Paths 1458 thru 1462  
 For Wall 98, Path 578, IPT 8, Added Nodes 1159 thru 1175, Added Paths 1463 thru 1479  
 For Wall 99, Path 583, IPT 8, Added Nodes 1176 thru 1210, Added Paths 1480 thru 1514  
 For Wall 100, Path 588, IPT 8, Added Nodes 1211 thru 1245, Added Paths 1515 thru 1549  
 For Wall 101, Path 593, IPT 8, Added Nodes 1246 thru 1250, Added Paths 1550 thru 1554  
 For Wall 102, Path 596, IPT 8, Added Nodes 1251 thru 1255, Added Paths 1555 thru 1559  
 For Wall 103, Path 603, IPT 8, Added Nodes 1256 thru 1278, Added Paths 1560 thru 1582  
 For Wall 104, Path 608, IPT 8, Added Nodes 1279 thru 1301, Added Paths 1583 thru 1605  
 For Wall 105, Path 613, IPT 8, Added Nodes 1302 thru 1312, Added Paths 1606 thru 1616  
 For Wall 106, Path 618, IPT 8, Added Nodes 1313 thru 1323, Added Paths 1617 thru 1627  
 For Wall 107, Path 623, IPT 8, Added Nodes 1324 thru 1346, Added Paths 1628 thru 1650  
 For Wall 108, Path 628, IPT 8, Added Nodes 1347 thru 1357, Added Paths 1651 thru 1661  
 For Wall 109, Path 633, IPT 8, Added Nodes 1358 thru 1368, Added Paths 1662 thru 1672  
 For Wall 110, Path 638, IPT 8, Added Nodes 1369 thru 1391, Added Paths 1673 thru 1695









90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000
90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000
84.65550	84.43030	84.20510	83.97990	83.75480	83.97500	84.62700	85.27890	85.93090	86.58290
87.23490	87.88690	88.53880	89.19080	89.84280	90.49480	91.14680	91.79880	92.45070	93.10270
93.75470	94.40670	95.05870	95.71060	96.36260	97.01460	97.66660	98.31860	99.00000	99.00000
90.00000	90.00000	90.00000	95.78640	96.03450	96.28450	96.53460	96.78460	94.17080	94.33910
96.50740	94.67570	94.84400	95.01230	95.18060	95.34890	95.51720	95.68550	95.85380	96.02210
96.19040	96.35870	96.52700	96.69530	96.86360	94.98570	85.34860	85.71150	86.07440	86.43730
86.80020	87.16310	87.52600	87.88890	88.25180	88.61470	88.97760	89.34050	89.70340	90.06630
90.42920	90.79210	91.15500	91.51790	91.88080	92.24370	92.60660	92.96950	93.33240	93.69520
94.05810	94.42100	94.78390	95.14680	95.50970	95.87260	96.23550	96.59840	96.96130	97.32420
84.98570	85.34860	85.71150	86.07440	86.43730	86.80020	87.16310	87.52600	87.88890	88.25180
88.61470	88.97760	89.34050	89.70340	90.06630	90.42920	90.79210	91.15500	91.51790	91.88080
92.24370	92.60660	92.96950	93.33240	93.69520	94.05810	94.42100	94.78390	95.14680	95.50970
95.87260	96.23550	96.59840	96.96130	97.32420	90.00000	90.00000	90.00000	90.00000	90.00000
91.83640	91.97020	92.10400	92.23780	92.37160	134.9863	135.9051	136.8239	137.7427	138.6615
139.5803	140.4991	141.4179	142.3368	143.2556	144.1744	145.0932	146.0120	146.9308	147.8496
148.7684	149.6872	150.6060	151.5248	152.4436	153.3624	154.2812	155.2000	156.1188	157.0376
136.8239	137.7427	138.6615	139.5803	140.4991	141.4179	142.3368	143.2556	144.1744	145.0932
146.0120	146.9308	147.8496	148.7684	149.6872	150.6060	151.5248	152.4436	153.3624	154.2812
155.2000	99.23380	99.55420	99.87460	100.1950	100.5154	100.8358	101.1562	101.4766	101.7970
102.1174	102.4378	99.23380	99.55420	99.87460	100.1950	100.5154	100.8358	101.1562	101.4766
101.7970	102.1174	102.4378	134.9863	135.9051	136.8239	137.7427	138.6615	139.5803	140.4991
141.4179	142.3368	143.2556	144.1744	145.0932	146.0120	146.9308	147.8496	148.7684	149.6872
150.6060	151.5248	152.4436	153.3624	154.2812	155.2000	99.23380	99.55420	99.87460	100.1950
100.5154	100.8358	101.1562	101.4766	101.7970	102.1174	102.4378	99.23380	99.55420	99.87460
100.1950	100.5154	100.8358	101.1562	101.4766	101.7970	102.1174	102.4378	134.9863	135.9051
136.8239	137.7427	138.6615	139.5803	140.4991	141.4179	142.3368	143.2556	144.1744	145.0932
146.0120	146.9308	147.8496	148.7684	149.6872	150.6060	151.5248	152.4436	153.3624	154.2812
155.2000									

WARNING: TFB\*F(X) has precedence over TF for boundary node 12  
 WARNING: TFB\*F(X) has precedence over TF for boundary node 13  
 WARNING: TFB\*F(X) has precedence over TF for boundary node 17  
 WARNING: TFB\*F(X) has precedence over TF for boundary node 18  
 WARNING: TFB\*F(X) has precedence over TF for boundary node 29  
 WARNING: TFB\*F(X) has precedence over TF for boundary node 30



KITTY6 03.7.481.-6.0      Project 09050-059      cr-tr.out      06/23/97 05:48:55      Page      054

Series 6, 39 Nodes:      2      90      605      606      607      608      609      610      611      612      613      614      615  
                          616      617      618      619      620      621      622      623      624      625      626      627      628  
                          629      630      631      632      633      634      635      636      637      638      639      91      18

Input Temps:      77.00      84.62      84.99      85.35      85.71      86.07      86.44      86.80      87.16      87.53      87.89      88.25      88.61  
                          88.98      89.34      89.70      90.07      90.43      90.79      91.16      91.52      91.88      92.24      92.61      92.97      93.33  
                          93.70      94.06      94.42      94.78      95.15      95.51      95.87      96.24      96.60      96.96      97.32      97.69      105.10\*

40 Paths:      86\*      87\*      88      909      910      911      912      913      914      915      916      917      918      919      920      921      922  
                          923      924      925      926      927      928      929      930      931      932      933      934      935      936      937      938      939  
                          940      941      942      943      89\*      50\*

Series 7, 27 Nodes:      1      76      504      505      506      507      508      509      510      511      512      513      514  
                          515      516      517      518      519      520      521      522      523      524      525      526      77  
                          12

Input Temps:      77.00      83.32      83.97      84.63      85.28      85.93      86.58      87.23      87.89      88.54      89.19      89.84      90.49  
                          91.15      91.80      92.45      93.10      93.75      94.41      95.06      95.71      96.36      97.01      97.67      98.32      98.97  
                          105.10\*

28 Paths:      51\*      52\*      53      808      809      810      811      812      813      814      815      816      817      818      819      820      821  
                          822      823      824      825      826      827      828      829      830      54\*      55\*

Series 8, 27 Nodes:      1      78      527      528      529      530      531      532      533      534      535      536      537  
                          538      539      540      541      542      543      544      545      546      547      548      549      79  
                          13

Input Temps:      77.00      83.32      83.97      84.63      85.28      85.93      86.58      87.23      87.89      88.54      89.19      89.84      90.49  
                          91.15      91.80      92.45      93.10      93.75      94.41      95.06      95.71      96.36      97.01      97.67      98.32      98.97  
                          105.10\*

28 Paths:      56\*      57\*      58      831      832      833      834      835      836      837      838      839      840      841      842      843      844  
                          845      846      847      848      849      850      851      852      853      59\*      60\*

Series 9, 39 Nodes:      3      116      684      685      686      687      688      689      690      691      692      693      694  
                          695      696      697      698      699      700      701      702      703      704      705      706      707  
                          708      709      710      711      712      713      714      715      716      717      718      117      29

Input Temps:      77.00      84.62      84.99      85.35      85.71      86.07      86.44      86.80      87.16      87.53      87.89      88.25      88.61  
                          88.98      89.34      89.70      90.07      90.43      90.79      91.16      91.52      91.88      92.24      92.61      92.97      93.33  
                          93.70      94.06      94.42      94.78      95.15      95.51      95.87      96.24      96.60      96.96      97.32      97.69      105.10\*

40 Paths:      151\*      152\*      153      988      989      990      991      992      993      994      995      996      997      998      999      1000      1001  
                          1002      1003      1004      1005      1006      1007      1008      1009      1010      1011      1012      1013      1014      1015      1016      1017      1018  
                          1019      1020      1021      1022      154\*      155\*

Series 10, 39 Nodes:	3	118	719	720	721	722	723	724	725	726	727	728	729
	730	731	732	733	734	735	736	737	738	739	740	741	742
	743	744	745	746	747	748	749	750	751	752	753	119	30
Input Temps:	77.00	84.62	84.99	85.35	85.71	86.07	86.44	86.80	87.16	87.53	87.89	88.25	88.61
	88.98	89.34	89.70	90.07	90.43	90.79	91.16	91.52	91.88	92.24	92.61	92.97	93.33
	93.70	94.06	94.42	94.78	95.15	95.51	95.87	96.24	96.60	96.96	97.32	97.69	105.10*
40 Paths:	156*	157*	158	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032
	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049
	1054	1055	1056	1057	159*	160*						1051	1052
												1053	
Series 11, 39 Nodes:	51	303	861	862	863	864	865	866	867	868	869	870	871
	872	873	874	875	876	877	878	879	880	881	882	883	884
	885	886	887	888	889	890	891	892	893	894	895	304	17
Input Temps:	90.00	84.62	84.97	85.35	85.71	86.07	86.44	86.80	87.16	87.53	87.89	88.25	88.61
	88.98	89.34	89.70	90.07	90.43	90.79	91.16	91.52	91.88	92.24	92.61	92.97	93.33
	93.70	94.06	94.42	94.78	95.15	95.51	95.87	96.24	96.60	96.96	97.32	97.69	105.10*
Retim Temps:	90.00	90.40	90.79	91.19	91.59	91.99	92.38	92.78	93.18	93.58	93.97	94.37	94.77
	95.17	95.56	95.96	96.36	96.76	97.15	97.55	97.95	98.34	98.74	99.14	99.54	99.93
	100.33	100.73	101.13	101.52	101.92	102.32	102.72	103.11	103.51	103.91	104.31	104.70	105.10
40 Paths:	476*	477*	478	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174
	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191
	1196	1197	1198	1199	479*	480*						1193	1194
												1195	
Series 12, 39 Nodes:	51	305	896	897	898	899	900	901	902	903	904	905	906
	907	908	909	910	911	912	913	914	915	916	917	918	919
	920	921	922	923	924	925	926	927	928	929	930	306	18
Input Temps:	90.00	84.62	84.99	85.35	85.71	86.07	86.44	86.80	87.16	87.53	87.89	88.25	88.61
	88.98	89.34	89.70	90.07	90.43	90.79	91.16	91.52	91.88	92.24	92.61	92.97	93.33
	93.70	94.06	94.42	94.78	95.15	95.51	95.87	96.24	96.60	96.96	97.32	97.69	105.10*
Retim Temps:	90.00	90.40	90.79	91.19	91.59	91.99	92.38	92.78	93.18	93.58	93.97	94.37	94.77
	95.17	95.56	95.96	96.36	96.76	97.15	97.55	97.95	98.34	98.74	99.14	99.54	99.93
	100.33	100.73	101.13	101.52	101.92	102.32	102.72	103.11	103.51	103.91	104.31	104.70	105.10
40 Paths:	481*	482*	483	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209
	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226
	1231	1232	1233	1234	484*	485*						1228	1229
												1230	

Series 13, 45 Nodes:	49	317	974	975	976	977	978	979	980	981	982	983	984
	985	986	987	988	989	990	991	992	993	994	995	996	997
	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010
	1011	1012	1013	1014	318	405							
Input Temps:	90.00	83.88	84.20	84.52	84.84	85.16	85.48	85.80	86.12	86.44	86.76	87.08	87.40
	87.72	88.04	88.36	88.68	89.00	89.32	89.64	89.96	90.28	90.60	90.92	91.23	91.55
	91.87	92.19	92.51	92.83	93.15	93.47	93.79	94.11	94.43	94.75	95.07	95.39	95.71
	96.03	96.35	96.67	96.99	97.31	104.00							
Statim Temps:	90.00	90.32	90.64	90.95	91.27	91.59	91.91	92.23	92.55	92.86	93.18	93.50	93.82
	94.14	94.45	94.77	95.09	95.41	95.73	96.05	96.36	96.68	97.00	97.32	97.64	97.95
	98.27	98.59	98.91	99.23	99.55	99.86	100.18	100.50	100.82	101.14	101.45	101.77	102.09
	102.41	102.73	103.05	103.36	103.68	104.00							
46 Paths:	511*	512*	513	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287
	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304
	1309	1310	1311	1312	1313	1314	1315	1316	1317	1318	514*	515*	
Series 14, 27 Nodes:	49	321	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036
	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	322
	13												
Input Temps:	90.00	83.32	83.97	84.63	85.28	85.93	86.58	87.23	87.89	88.54	89.19	89.84	90.49
	91.15	91.80	92.45	93.10	93.75	94.41	95.06	95.71	96.36	97.01	97.67	98.32	98.97
	105.10*												
Statim Temps:	90.00	90.58	91.16	91.74	92.32	92.90	93.48	94.07	94.65	95.23	95.81	96.39	96.97
	97.55	98.13	98.71	99.29	99.87	100.45	101.03	101.62	102.20	102.78	103.36	103.94	104.52
	105.10												
28 Paths:	521*	522*	523	1330	1331	1332	1333	1334	1335	1336	1337	1338	1339
	1344	1345	1346	1347	1348	1349	1350	1351	1352	524*	525*		
Series 15, 45 Nodes:	50	327	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069
	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082
	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095
	1096	1097	1098	1099	328	405							
Input Temps:	90.00	83.88	84.20	84.52	84.84	85.16	85.48	85.80	86.12	86.44	86.76	87.08	87.40
	87.72	88.04	88.36	88.68	89.00	89.32	89.64	89.96	90.28	90.60	90.92	91.23	91.55
	91.87	92.19	92.51	92.83	93.15	93.47	93.79	94.11	94.43	94.75	95.07	95.39	95.71
	96.03	96.35	96.67	96.99	97.31	104.00							
Statim Temps:	90.00	90.32	90.64	90.95	91.27	91.59	91.91	92.23	92.55	92.86	93.18	93.50	93.82
	94.14	94.45	94.77	95.09	95.41	95.73	96.05	96.36	96.68	97.00	97.32	97.64	97.95
	98.27	98.59	98.91	99.23	99.55	99.86	100.18	100.50	100.82	101.14	101.45	101.77	102.09
	102.41	102.73	103.05	103.36	103.68	104.00							
46 Paths:	536*	537*	538	1363	1364	1365	1366	1367	1368	1369	1370	1371	1372
	1377	1378	1379	1380	1381	1382	1383	1384	1385	1386	1387	1388	1389
	1394	1395	1396	1397	1398	1399	1400	1401	1402	1403	539*	540*	

Series 16, 27 Nodes:	50	337	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136
	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149
	12												1150
Input Temps:	90.00	83.32	83.97	84.63	85.28	85.93	86.58	87.23	87.89	88.54	89.19	89.84	90.49
	91.15	91.80	92.45	93.10	93.75	94.41	95.06	95.71	96.36	97.01	97.67	98.32	98.97
	105.10*												
Retim Temps:	90.00	90.58	91.16	91.74	92.32	92.90	93.48	94.07	94.65	95.23	95.81	96.39	96.97
	97.55	98.13	98.71	99.29	99.87	100.45	101.03	101.62	102.20	102.78	103.36	103.94	104.52
	105.10												
28 Paths:	561*	562*	563	1430	1431	1432	1433	1434	1435	1436	1437	1438	1439
	1444	1445	1446	1447	1448	1449	1450	1451	1452	564*	565*		
Series 17, 39 Nodes:	52	345	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186
	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199
	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212
Input Temps:	90.00	84.62	84.99	85.35	85.71	86.07	86.44	86.80	87.16	87.53	87.89	88.25	88.61
	88.98	89.34	89.70	90.07	90.43	90.79	91.16	91.52	91.88	92.24	92.61	92.97	93.33
	93.70	94.06	94.42	94.78	95.15	95.51	95.87	96.24	96.60	96.96	97.32	97.69	105.10*
Retim Temps:	90.00	90.40	90.79	91.19	91.59	91.99	92.38	92.78	93.18	93.58	93.97	94.37	94.77
	95.17	95.56	95.96	96.36	96.76	97.15	97.55	97.95	98.34	98.74	99.14	99.54	99.93
	100.33	100.73	101.13	101.52	101.92	102.32	102.72	103.11	103.51	103.91	104.31	104.70	105.10
40 Paths:	561*	562*	563	1480	1481	1482	1483	1484	1485	1486	1487	1488	1489
	1494	1495	1496	1497	1498	1499	1500	1501	1502	1503	1504	1505	1506
	1511	1512	1513	1514	584*	585*							
Series 18, 39 Nodes:	52	347	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221
	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234
	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247
Input Temps:	90.00	84.62	84.99	85.35	85.71	86.07	86.44	86.80	87.16	87.53	87.89	88.25	88.61
	88.98	89.34	89.70	90.07	90.43	90.79	91.16	91.52	91.88	92.24	92.61	92.97	93.33
	93.70	94.06	94.42	94.78	95.15	95.51	95.87	96.24	96.60	96.96	97.32	97.69	105.10*
Retim Temps:	90.00	90.40	90.79	91.19	91.59	91.99	92.38	92.78	93.18	93.58	93.97	94.37	94.77
	95.17	95.56	95.96	96.36	96.76	97.15	97.55	97.95	98.34	98.74	99.14	99.54	99.93
	100.33	100.73	101.13	101.52	101.92	102.32	102.72	103.11	103.51	103.91	104.31	104.70	105.10
40 Paths:	586*	587*	588	1515	1516	1517	1518	1519	1520	1521	1522	1523	1524
	1529	1530	1531	1532	1533	1534	1535	1536	1537	1538	1539	1540	1541
	1546	1547	1548	1549	589*	590*							

Series 19, 27 Nodes: 51 353 1256 1257 1258 1259 1260 1261 1262 1263 1264 1265 1266  
 1267 1268 1269 1270 1271 1272 1273 1274 1275 1276 1277 1278 1279  
 55

Input Temps: 90.00 134.07 134.99 135.91 136.82 137.74 138.66 139.58 140.50 141.42 142.34 143.26 144.17  
 145.09 146.01 146.93 147.85 148.77 149.69 150.61 151.52 152.44 153.36 154.28 155.20 156.12  
 162.00

27 Paths: 601\* 602\* 603 1560 1561 1562 1563 1564 1565 1566 1567 1568 1569 1570 1571 1572 1573  
 1574 1575 1576 1577 1578 1579 1580 1581 1582 604

Series 20, 27 Nodes: 49 355 1279 1280 1281 1282 1283 1284 1285 1286 1287 1288 1289  
 1290 1291 1292 1293 1294 1295 1296 1297 1298 1299 1300 1301 1302  
 55

Input Temps: 90.00 134.07 134.99 135.91 136.82 137.74 138.66 139.58 140.50 141.42 142.34 143.26 144.17  
 145.09 146.01 146.93 147.85 148.77 149.69 150.61 151.52 152.44 153.36 154.28 155.20 156.12  
 162.00

27 Paths: 606\* 607\* 608 1593 1594 1595 1596 1597 1598 1599 1600 1601 1602 1603 1604 1605 609

Series 21, 15 Nodes: 49 357 1302 1303 1304 1305 1306 1307 1308 1309 1310 1311 1312  
 358 403

Input Temps: 90.00 98.91 99.23 99.55 99.87 100.19 100.52 100.84 101.16 101.48 101.80 102.12 102.44  
 102.76 122.00

16 Paths: 611\* 612\* 613 1606 1607 1608 1609 1610 1611 1612 1613 1614 1615 1616 614\* 615\*

Series 22, 15 Nodes: 49 359 1313 1314 1315 1316 1317 1318 1319 1320 1321 1322 1323  
 360 404

Input Temps: 90.00 98.91 99.23 99.55 99.87 100.19 100.52 100.84 101.16 101.48 101.80 102.12 102.44  
 102.76 122.00

16 Paths: 616\* 617\* 618 1617 1618 1619 1620 1621 1622 1623 1624 1625 1626 1627 619\* 620\*

Series 23, 27 Nodes: 50 361 1324 1325 1326 1327 1328 1329 1330 1331 1332 1333 1334  
 1335 1336 1337 1338 1339 1340 1341 1342 1343 1344 1345 1346 1347  
 55

Input Temps: 90.00 134.07 134.99 135.91 136.82 137.74 138.66 139.58 140.50 141.42 142.34 143.26 144.17  
 145.09 146.01 146.93 147.85 148.77 149.69 150.61 151.52 152.44 153.36 154.28 155.20 156.12  
 162.00

27 Paths: 621\* 622\* 623 1628 1629 1630 1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641  
 1642 1643 1644 1645 1646 1647 1648 1649 1650 624







89.90620	90.58520	91.26410	91.94310	89.22720	89.90620	90.58520	91.26410	91.94310	83.52575
83.61581	83.70588	89.22720	89.90620	90.58520	91.26410	91.94310	83.52575	83.61581	83.70588
89.22720	89.90620	90.58520	91.26410	91.94310	90.00000	90.00000	90.00000	90.00000	90.00000
94.47307	94.65621	94.83935	95.02248	95.20562	95.38876	95.57189	95.75503	95.93817	96.12130
96.30444	96.48758	96.67071	96.85385	97.03699	97.22012	97.40326	97.58640	97.76953	97.95267
98.13581	98.31894	98.50208	98.68522	98.86835	99.05149	99.23463	99.41776	99.60090	99.78404
99.96717	100.1503	100.3334	100.5166	100.6997	94.47307	94.65621	94.83935	95.02248	95.20562
95.38876	95.57189	95.75503	95.93817	96.12130	96.30444	96.48758	96.67071	96.85385	97.03699
97.22012	97.40326	97.58640	97.76953	97.95267	98.13581	98.31894	98.50208	98.68522	98.86835
99.05149	99.23463	99.41776	99.60090	99.78404	99.96717	100.1503	100.3334	100.5166	100.6997
94.17080	94.33910	94.50740	94.67570	94.84400	95.01230	95.18060	95.34890	95.51720	95.68550
95.85380	96.02210	96.19040	96.35870	96.52700	96.69530	96.86360	97.03190	97.20020	97.36850
96.53460	96.70290	96.87120	97.03950	97.20780	97.37610	97.54440	97.71270	97.88100	98.04930
90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000
90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000
90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000
95.00481	95.16068	95.31655	95.47242	95.62829	95.78415	95.94002	96.09589	96.25176	96.40763
96.56350	96.71937	96.87524	97.03111	97.18698	97.34285	97.49872	97.65459	97.81046	97.96633
98.12220	98.27807	98.43394	98.58980	98.74567	98.90154	99.05741	99.21328	99.36915	99.52502
99.68089	99.83676	99.99263	100.1485	100.30437	100.46024	100.61611	100.77198	100.92785	101.08372
90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000
95.58424	95.71749	95.85074	95.98399	96.11724	96.25048	96.38373	96.51698	96.65023	96.78348
98.91672	99.04997	99.18322	99.31647	99.44972	99.58297	99.71622	99.84947	99.98272	100.11597
84.20510	84.37990	84.55470	84.72950	84.90430	85.07910	85.25390	85.42870	85.60350	85.77830
94.22546	94.38133	94.53720	94.69307	94.84894	95.00481	95.16068	95.31655	95.47242	95.62829
97.78415	97.94002	98.09589	98.25176	98.40763	98.56350	98.71937	98.87524	99.03111	99.18698
97.34285	97.49872	97.65459	97.81046	97.96633	98.12220	98.27807	98.43394	98.58980	98.74567
98.90154	99.05741	99.21328	99.36915	99.52502	99.68089	99.83676	99.99263	100.1485	100.30437
90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000
90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000
84.65550	84.83030	85.00510	85.17990	85.35470	85.52950	85.70430	85.87910	86.05390	86.22870
95.58424	95.71749	95.85074	95.98399	96.11724	96.25048	96.38373	96.51698	96.65023	96.78348
98.91672	99.04997	99.18322	99.31647	99.44972	99.58297	99.71622	99.84947	99.98272	100.11597
90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000
94.50740	94.67570	94.84400	95.01230	95.18060	95.34890	95.51720	95.68550	95.85380	96.02210
96.19040	96.35870	96.52700	96.69530	96.86360	97.03190	97.20020	97.36850	97.53680	97.70510
95.38876	95.57189	95.75503	95.93817	96.12130	96.30444	96.48758	96.67071	96.85385	97.03699
97.22012	97.40326	97.58640	97.76953	97.95267	98.13581	98.31894	98.50208	98.68522	98.86835
99.05149	99.23463	99.41776	99.60090	99.78404	99.96717	100.1503	100.3334	100.5166	100.6997
94.47307	94.65621	94.83935	95.02248	95.20562	95.38876	95.57189	95.75503	95.93817	96.12130
96.30444	96.48758	96.67071	96.85385	97.03699	97.22012	97.40326	97.58640	97.76953	97.95267
98.13581	98.31894	98.50208	98.68522	98.86835	99.05149	99.23463	99.41776	99.60090	99.78404
99.96717	100.1503	100.3334	100.5166	100.6997	90.00000	90.00000	90.00000	90.00000	90.00000
91.83640	91.97020	92.10400	92.23780	92.37160	139.9126	140.7405	141.5683	142.3962	143.2240
144.0519	144.8798	145.7076	146.5355	147.3634	148.1912	149.0191	149.8470	150.6748	151.5027
152.3305	153.1584	153.9863	154.8141	155.6420	156.4699	157.2977	158.1256	158.9535	159.7814
141.5683	142.3962	143.2240	144.0519	144.8798	145.7076	146.5355	147.3634	148.1912	149.0191
149.8470	150.6748	151.5027	152.3305	153.1584	153.9863	154.8141	155.6420	156.4699	157.2977
158.1256	158.9535	159.7814	160.6093	161.4372	162.2651	163.0930	163.9209	164.7488	165.5767
107.6087	107.8437	108.0787	108.3137	108.5487	108.7837	109.0187	109.2537	109.4887	109.7237
107.3737	107.6087	107.8437	108.0787	108.3137	108.5487	108.7837	109.0187	109.2537	109.4887
145.7076	146.5355	147.3634	148.1912	149.0191	149.8470	150.6748	151.5027	152.3305	153.1584
153.9863	154.8141	155.6420	156.4699	157.2977	158.1256	158.9535	159.7814	160.6093	161.4372
106.4337	106.6687	106.9037	107.1387	107.3737	107.6087	107.8437	108.0787	108.3137	108.5487
106.1987	106.4337	106.6687	106.9037	107.1387	107.3737	107.6087	107.8437	108.0787	108.3137
141.5683	142.3962	143.2240	144.0519	144.8798	145.7076	146.5355	147.3634	148.1912	149.0191
149.8470	150.6748	151.5027	152.3305	153.1584	153.9863	154.8141	155.6420	156.4699	157.2977

158.1256

## 12. Initial "Solution Vector" (ZA(J),J=1,NE), NE = 1256

(UI) energy, incompressible, (Mn) NCG n moles, (MW) water mass, (UC) energy, compressible, (WP) path mass flow

(UI) 316495.9	(UI) 153065.9	(UI) 147851.4	(UI) 183152.5	(UI) 183152.5	(UI) 150039.6	(UI) 144035.4
(UI) 112124.9	(UI) 112124.9	(UI) 63498.79	(UI) 63498.79	(UI) 18375.58	(UI) 18375.58	(UI) 703887.3
(UI) 703187.3	(UI) 51520.32	(UI) 51520.32	(UI) 53924.60	(UI) 53924.60	(UI) 111865.0	(UI) 111865.0
(UI) 21338.00	(UI) 21338.00	(UI) 19620.65	(UI) 19620.65	(UI) 110253.5	(UI) 110253.5	(UI) 51223.75
(UI) 52699.88	(UI) 58617.79	(UI) 60306.99	(UI) 107677.5	(UI) 107677.5	(UI) 44865.61	(UI) 44865.61
(UI) 64572.13	(UI) 64572.13	(UI) 41173.32	(UI) 41173.32	(UI) 124863.2	(UI) 127860.2	(UI) 161593.7
(UI) 165472.4	(UI) 46146.67	(UI) 46676.48	(UI) 347515.1	(UI) 348187.9	(UI) 33206.46	(UI) 33206.46
(UI) 56082.02	(UI) 56082.02	(UI) 15160.93	(UI) 15160.93	(UI) 102101.5	(UI) 102101.5	(UI) 16033.02
(UI) 16033.02	(UI) 12236.08	(UI) 12236.08	(UI) 68178.55	(UI) 68178.55	(UI) 80433.42	(UI) 80433.42
(UI) 347719.0	(UI) 348392.3	(UI) 46146.67	(UI) 46676.48	(UI) 161593.7	(UI) 165472.4	(UI) 48016.42
(UI) 49168.93	(UI) 100399.5	(UI) 101023.7	(UI) 9874.728	(UI) 9874.728	(UI) 59377.17	(UI) 59377.17
(UI) 21166.26	(UI) 21166.26	(UI) 17989.18	(UI) 17989.18	(UI) 12579.54	(UI) 12579.54	(UI) 14511.56
(UI) 14511.56	(UI) 44049.87	(UI) 44049.87	(UI) 43191.20	(UI) 43191.20	(UI) 18032.11	(UI) 18032.11
(UI) 21509.73	(UI) 21509.73	(UI) 17710.11	(UI) 17710.11	(UI) 29785.19	(UI) 29785.19	(UI) 61717.05
(UI) 61717.05	(UI) 16770.94	(UI) 16770.94	(UI) 10948.07	(UI) 10948.07	(UI) 39842.38	(UI) 39842.38
(UI) 50446.98	(UI) 50446.98	(UI) 24429.22	(UI) 24429.22	(UI) 75505.58	(UI) 75505.58	(UI) 61614.76
(UI) 61614.76	(UI) 134453.1	(UI) 134453.1	(UI) 1338601.	(UI) 1339489.	(UI) 301905.3	(UI) 304148.8
(UI) 300561.9	(UI) 302795.4	(UI) 1132674.	(UI) 1133425.	(UI) 890173.3	(UI) 896778.3	(UI) 1090026.
(UI) 1090749.	(UI) 847225.9	(UI) 853521.8	(UI) 7447.262	(UI) 7447.262	(UI) 7447.262	(UI) 3849.856
(UI) 7447.262	(UI) 7447.262	(UI) 3344.957	(UI) 2776.945	(UI) 7920.605	(UI) 7920.605	(UI) 3344.957
(UI) 2776.945	(UI) 3182.398	(UI) 7920.605	(UI) 7447.262	(UI) 3344.957	(UI) 3118.750	(UI) 3218.732
(UI) 26478.20	(UI) 610510.4	(UI) 610510.4	(UI) 97196.88	(UI) 97196.88	(UI) 287678.0	(UI) 287678.0
(UI) 237867.5	(UI) 237867.5	(UI) 1184655.	(UI) 1184655.	(UI) 25766.01	(UI) 606499.1	(UI) 606499.1
(UI) 92385.16	(UI) 92385.16	(UI) 227541.9	(UI) 227541.9	(UI) 226033.3	(UI) 226033.3	(UI) 1141169.
(UI) 1141169.	(UI) 31572.99	(UI) 410574.2	(UI) 420574.2	(UI) 218768.7	(UI) 218768.7	(UI) 19084.38
(UI) 19084.38	(UI) 59526.77	(UI) 59526.77	(UI) 119586.3	(UI) 119586.3	(UI) 5357.056	(UI) 5357.056
(UI) 460897.8	(UI) 460897.8	(UI) 148752.9	(UI) 148752.9	(UI) 58323.69	(UI) 58323.69	(UI) 823857.0
(UI) 823857.0	(UI) 156403.5	(UI) 156403.5	(UI) 124574.8	(UI) 126057.4	(UI) 157624.2	(UI) 159500.1
(UI) 45034.48	(UI) 45280.88	(UI) 266297.3	(UI) 267016.9	(UI) 273227.0	(UI) 273227.0	(UI) 151948.2
(UI) 151948.2	(UI) 130344.9	(UI) 130344.9	(UI) 350936.4	(UI) 355087.6	(UI) 300787.9	(UI) 300787.9
(UI) 69301.64	(UI) 70303.48	(UI) 27304.31	(UI) 27236.57	(UI) 246805.7	(UI) 246805.7	(UI) 350936.4
(UI) 355087.6	(UI) 133194.3	(UI) 133194.3	(UI) 151948.2	(UI) 151948.2	(UI) 263228.3	(UI) 263228.3
(UI) 30176.45	(UI) 30103.58	(UI) 52781.80	(UI) 53544.82	(UI) 273227.0	(UI) 273227.0	(UI) 266297.3
(UI) 267016.9	(UI) 45034.48	(UI) 45280.88	(UI) 157624.2	(UI) 159500.1	(UI) 43700.38	(UI) 44220.47
(UI) 105378.3	(UI) 105531.8	(UI) 112886.1	(UI) 112886.1	(UI) 1383164.	(UI) 1429062.	(UI) 761276.2
(UI) 786538.0	(UI) 375586.9	(UI) 377461.8	(UI) 446615.1	(UI) 448844.6	(UI) 761276.2	(UI) 786538.0
(UI) 375586.9	(UI) 377461.8	(UI) 446987.8	(UI) 449219.2	(UI) 1327296.	(UI) 1371340.	(UI) 3005.816
(UI) 3878.471	(UI) 3296.701	(UI) 18.70934	(UI) 3296.701	(UI) 2327.083	(UI) 13.20269	(UI) 2327.083
(UI) 3296.701	(UI) 3005.816	(UI) 3296.701	(UI) 3005.816	(UI) 224249.8	(UI) 224249.8	(UI) 224249.8
(UI) 224249.8	(UI) 224249.8	(UI) 224249.8	(UI) 224249.8	(UI) 224249.8	(UI) 224249.8	(UI) 224249.8
(UI) 224249.8	(UI) 126997.6	(UI) 126997.6	(UI) 126997.6	(UI) 126997.6	(UI) 126997.6	(UI) 36751.16
(UI) 36751.16	(UI) 36751.16	(UI) 36751.16	(UI) 36751.16	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.
(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.
(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.
(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.
(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.
(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.
(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.	(UI) 1407775.
(UI) 103040.6	(UI) 107849.2	(UI) 107849.2	(UI) 103040.6	(UI) 103040.6	(UI) 103040.6	(UI) 103040.6
(UI) 223729.9	(UI) 223729.9	(UI) 223729.9	(UI) 223729.9	(UI) 223729.9	(UI) 223729.9	(UI) 223729.9
(UI) 223729.9	(UI) 223729.9	(UI) 223729.9	(UI) 42676.00	(UI) 42676.00	(UI) 42676.00	(UI) 42676.00

(UI) 42676.00	(UI) 39241.31	(UI) 39241.31	(UI) 39241.31	(UI) 39241.31	(UI) 39241.31	(UI) 220507.0
(UI) 220507.0	(UI) 220507.0	(UI) 220507.0	(UI) 220507.0	(UI) 102570.5	(UI) 102693.5	(UI) 102816.5
(UI) 102939.5	(UI) 103062.6	(UI) 103185.6	(UI) 103308.6	(UI) 103431.6	(UI) 103554.6	(UI) 103677.6
(UI) 103800.6	(UI) 103923.6	(UI) 104046.6	(UI) 104169.7	(UI) 104292.7	(UI) 104415.7	(UI) 104538.7
(UI) 104661.7	(UI) 104784.7	(UI) 104907.7	(UI) 105030.7	(UI) 105153.7	(UI) 105276.7	(UI) 105399.7
(UI) 117517.1	(UI) 117657.9	(UI) 117798.7	(UI) 117939.4	(UI) 118080.2	(UI) 118221.0	(UI) 118361.7
(UI) 118502.5	(UI) 118643.3	(UI) 118784.0	(UI) 118924.8	(UI) 119065.6	(UI) 119206.3	(UI) 119347.1
(UI) 119487.9	(UI) 119628.6	(UI) 119769.4	(UI) 119910.2	(UI) 120050.9	(UI) 120191.7	(UI) 120332.5
(UI) 120473.2	(UI) 120614.0	(UI) 120754.8	(UI) 120895.6	(UI) 121036.4	(UI) 121177.2	(UI) 121318.0
(UI) 89731.22	(UI) 89731.22	(UI) 89731.22	(UI) 89731.22	(UI) 129144.3	(UI) 129144.3	(UI) 129144.3
(UI) 129144.3	(UI) 129144.3	(UI) 129144.3	(UI) 129144.3	(UI) 82346.64	(UI) 82346.64	(UI) 82346.64
(UI) 249893.0	(UI) 250059.5	(UI) 250226.0	(UI) 250392.5	(UI) 250559.0	(UI) 250725.5	(UI) 250892.0
(UI) 251058.5	(UI) 251225.0	(UI) 251391.5	(UI) 251558.0	(UI) 251724.5	(UI) 251891.0	(UI) 252057.5
(UI) 252224.0	(UI) 252390.5	(UI) 252557.0	(UI) 252723.5	(UI) 252890.0	(UI) 253056.5	(UI) 253223.0
(UI) 253389.5	(UI) 253556.0	(UI) 253722.5	(UI) 253889.0	(UI) 254055.5	(UI) 254222.0	(UI) 254388.5
(UI) 254555.0	(UI) 254721.5	(UI) 254888.0	(UI) 255054.5	(UI) 255221.0	(UI) 255387.5	(UI) 255554.0
(UI) 323403.0	(UI) 323618.4	(UI) 323833.9	(UI) 324049.4	(UI) 324264.9	(UI) 324480.4	(UI) 324695.8
(UI) 324911.3	(UI) 325126.8	(UI) 325342.3	(UI) 325557.8	(UI) 325773.2	(UI) 325988.7	(UI) 326204.2
(UI) 326419.7	(UI) 326635.2	(UI) 326850.6	(UI) 327066.1	(UI) 327281.6	(UI) 327497.1	(UI) 327712.5
(UI) 327928.0	(UI) 328143.5	(UI) 328359.0	(UI) 328574.5	(UI) 328789.9	(UI) 329005.4	(UI) 329220.9
(UI) 329436.4	(UI) 329651.9	(UI) 329867.3	(UI) 330082.8	(UI) 330298.3	(UI) 330513.8	(UI) 330729.3
(UI) 92352.21	(UI) 92411.07	(UI) 92469.94	(UI) 92528.81	(UI) 92587.68	(UI) 92646.55	(UI) 92705.42
(UI) 92764.28	(UI) 92823.15	(UI) 92882.02	(UI) 92940.89	(UI) 92999.76	(UI) 93058.61	(UI) 93117.48
(UI) 93176.35	(UI) 93235.22	(UI) 93294.08	(UI) 93352.95	(UI) 93411.82	(UI) 93470.69	(UI) 93529.56
(UI) 24472.15	(UI) 136357.1	(UI) 136357.1	(UI) 136357.1	(UI) 136357.1	(UI) 136357.1	(UI) 136357.1
(UI) 92411.07	(UI) 92469.94	(UI) 92528.81	(UI) 92587.68	(UI) 92646.55	(UI) 92705.42	(UI) 92764.28
(UI) 92823.15	(UI) 92882.02	(UI) 92940.89	(UI) 92999.76	(UI) 93058.61	(UI) 93117.48	(UI) 93176.35
(UI) 93235.22	(UI) 93294.08	(UI) 93352.95	(UI) 93411.82	(UI) 93470.69	(UI) 93529.56	(UI) 93588.43
(UI) 324680.4	(UI) 324695.8	(UI) 324711.3	(UI) 324726.8	(UI) 324742.3	(UI) 324757.8	(UI) 324773.2
(UI) 325988.7	(UI) 326204.2	(UI) 326419.7	(UI) 326635.2	(UI) 326850.6	(UI) 327066.1	(UI) 327281.6
(UI) 327497.1	(UI) 327712.5	(UI) 327928.0	(UI) 328143.5	(UI) 328359.0	(UI) 328574.5	(UI) 328789.9
(UI) 329005.4	(UI) 329220.9	(UI) 329436.4	(UI) 329651.9	(UI) 329867.3	(UI) 330082.8	(UI) 330298.3
(UI) 330513.8	(UI) 330729.3	(UI) 330944.8	(UI) 331160.1	(UI) 331375.4	(UI) 331590.7	(UI) 331806.0
(UI) 96417.02	(UI) 96481.05	(UI) 96545.07	(UI) 96609.10	(UI) 96673.13	(UI) 96737.16	(UI) 96801.19
(UI) 96865.21	(UI) 96929.24	(UI) 96993.27	(UI) 97057.30	(UI) 97121.33	(UI) 97185.35	(UI) 97249.38
(UI) 97313.41	(UI) 97377.44	(UI) 97441.47	(UI) 97505.49	(UI) 97569.52	(UI) 97633.55	(UI) 97697.58
(UI) 97761.61	(UI) 97825.63	(UI) 97889.66	(UI) 97953.69	(UI) 98017.72	(UI) 98081.75	(UI) 98145.78
(UI) 98209.80	(UI) 98273.83	(UI) 201007.1	(UI) 201215.2	(UI) 201423.3	(UI) 201631.3	(UI) 201839.4
(UI) 19749.46	(UI) 19749.46	(UI) 19749.46	(UI) 19749.46	(UI) 19749.46	(UI) 19749.46	(UI) 19749.46
(UI) 118754.3	(UI) 118754.3	(UI) 118754.3	(UI) 42332.53	(UI) 42332.53	(UI) 42332.53	(UI) 42332.53
(UI) 42332.53	(UI) 35978.36	(UI) 35978.36	(UI) 35978.36	(UI) 35978.36	(UI) 35978.36	(UI) 35978.36
(UI) 25159.09	(UI) 25159.09	(UI) 25159.09	(UI) 25159.09	(UI) 25159.09	(UI) 25159.09	(UI) 25159.09
(UI) 29023.11	(UI) 29023.11	(UI) 88099.74	(UI) 88099.74	(UI) 88099.74	(UI) 88099.74	(UI) 88099.74
(UI) 86382.40	(UI) 86382.40	(UI) 86382.40	(UI) 86382.40	(UI) 86382.40	(UI) 86382.40	(UI) 86382.40
(UI) 36064.22	(UI) 36064.22	(UI) 36064.22	(UI) 43019.47	(UI) 43019.47	(UI) 43019.47	(UI) 43019.47
(UI) 43019.47	(UI) 21896.14	(UI) 21896.14	(UI) 21896.14	(UI) 21896.14	(UI) 21896.14	(UI) 21896.14
(UI) 79684.76	(UI) 79684.76	(UI) 79684.76	(UI) 79684.76	(UI) 79684.76	(UI) 79684.76	(UI) 79684.76
(UI) 48858.44	(UI) 48858.44	(UI) 268951.1	(UI) 268951.1	(UI) 268951.1	(UI) 268951.1	(UI) 268951.1
(UI) 2678534.	(UI) 604558.4	(UI) 605306.3	(UI) 606054.1	(UI) 606801.9	(UI) 607549.7	(UI) 608297.5
(UI) 602612.8	(UI) 603357.4	(UI) 604101.8	(UI) 604846.3	(UI) 2265724.	(UI) 2266100.	(UI) 2266475.
(UI) 1782532.	(UI) 1784737.	(UI) 1786942.	(UI) 1789146.	(UI) 1791351.	(UI) 1793556.	(UI) 1795761.
(UI) 2181137.	(UI) 1696550.	(UI) 1698649.	(UI) 1700748.	(UI) 1702846.	(UI) 1704945.	(UI) 1707044.
(UI) 312807.0	(UI) 312807.0	(UI) 312807.0	(UI) 312807.0	(UI) 249232.0	(UI) 249314.3	(UI) 249396.7
(UI) 249479.1	(UI) 249561.4	(UI) 249643.8	(UI) 249726.2	(UI) 249808.5	(UI) 249890.9	(UI) 249973.3
(UI) 250055.6	(UI) 250138.0	(UI) 250220.4	(UI) 250302.7	(UI) 250385.1	(UI) 250467.5	(UI) 250549.8
(UI) 250632.2	(UI) 250714.6	(UI) 250796.9	(UI) 250879.3	(UI) 250961.7	(UI) 251044.0	(UI) 251126.4



(UI) 251208.8	(UI) 251291.1	(UI) 251373.5	(UI) 251455.9	(UI) 251538.2	(UI) 251620.6	(UI) 251703.0
(UI) 251785.4	(UI) 251867.7	(UI) 251950.1	(UI) 252032.5	(UI) 252114.9	(UI) 252197.3	(UI) 252279.7
(UI) 315665.2	(UI) 315749.5	(UI) 315833.7	(UI) 315917.9	(UI) 316002.1	(UI) 316086.3	(UI) 316170.6
(UI) 316394.8	(UI) 316479.0	(UI) 316563.2	(UI) 316647.4	(UI) 316731.7	(UI) 316815.9	(UI) 316899.1
(UI) 317124.3	(UI) 317208.5	(UI) 317292.8	(UI) 317377.0	(UI) 317461.2	(UI) 317545.4	(UI) 317629.6
(UI) 317853.9	(UI) 317938.1	(UI) 318022.3	(UI) 318106.5	(UI) 318190.7	(UI) 318274.9	(UI) 318359.1
(UI) 318583.4	(UI) 318667.6	(UI) 318751.8	(UI) 318836.0	(UI) 318920.2	(UI) 319004.4	(UI) 319088.6
(UI) 90178.47	(UI) 90205.85	(UI) 90233.23	(UI) 90260.61	(UI) 90287.99	(UI) 90315.36	(UI) 90342.74
(UI) 90370.12	(UI) 90397.50	(UI) 90424.88	(UI) 90452.26	(UI) 90479.63	(UI) 90507.01	(UI) 90534.39
(UI) 532834.4	(UI) 533074.3	(UI) 533314.1	(UI) 533554.0	(UI) 533793.8	(UI) 534033.6	(UI) 534273.4
(UI) 546453.9	(UI) 546453.9	(UI) 546453.9	(UI) 546453.9	(UI) 546453.9	(UI) 546453.9	(UI) 546453.9
(UI) 303896.3	(UI) 303896.3	(UI) 303896.3	(UI) 303896.3	(UI) 303896.3	(UI) 303896.3	(UI) 303896.3
(UI) 260689.8	(UI) 260689.8	(UI) 260689.8	(UI) 260689.8	(UI) 260689.8	(UI) 260689.8	(UI) 260689.8
(UI) 702465.7	(UI) 702465.7	(UI) 702465.7	(UI) 702465.7	(UI) 702465.7	(UI) 702465.7	(UI) 702465.7
(UI) 703849.5	(UI) 704047.2	(UI) 704244.9	(UI) 704442.5	(UI) 704640.2	(UI) 704837.9	(UI) 705035.6
(UI) 705233.2	(UI) 705430.9	(UI) 705628.6	(UI) 705826.3	(UI) 706024.0	(UI) 706221.6	(UI) 706419.3
(UI) 706617.0	(UI) 706814.7	(UI) 707012.3	(UI) 707210.0	(UI) 707407.7	(UI) 707605.4	(UI) 707803.1
(UI) 708000.7	(UI) 708198.4	(UI) 708396.1	(UI) 708593.8	(UI) 708791.4	(UI) 708989.1	(UI) 709186.8
(UI) 709384.5	(UI) 709582.2	(UI) 709779.9	(UI) 709977.5	(UI) 710175.2	(UI) 710372.9	(UI) 710570.6
(UI) 601575.9	(UI) 601575.9	(UI) 601575.9	(UI) 601575.9	(UI) 601575.9	(UI) 601575.9	(UI) 601575.9
(UI) 601575.9	(UI) 601575.9	(UI) 601575.9	(UI) 601575.9	(UI) 601575.9	(UI) 601575.9	(UI) 601575.9
(UI) 139187.7	(UI) 139271.2	(UI) 139354.7	(UI) 139438.1	(UI) 139521.6	(UI) 139605.1	(UI) 139688.6
(UI) 139772.1	(UI) 139855.6	(UI) 139939.1	(UI) 140022.6	(UI) 140106.0	(UI) 140189.5	(UI) 140273.0
(UI) 140356.5	(UI) 140440.0	(UI) 140523.5	(UI) 140607.0	(UI) 140690.5	(UI) 140774.0	(UI) 140857.5
(UI) 54495.73	(UI) 493611.4	(UI) 493611.4	(UI) 493611.4	(UI) 493611.4	(UI) 493611.4	(UI) 493611.4
(UI) 702268.1	(UI) 702465.7	(UI) 702663.4	(UI) 702861.1	(UI) 703058.8	(UI) 703256.5	(UI) 703454.1
(UI) 703651.8	(UI) 703849.5	(UI) 704047.2	(UI) 704244.9	(UI) 704442.5	(UI) 704640.2	(UI) 704837.9
(UI) 705035.6	(UI) 705233.2	(UI) 705430.9	(UI) 705628.6	(UI) 705826.3	(UI) 706024.0	(UI) 706221.6
(UI) 706419.3	(UI) 706617.0	(UI) 706814.7	(UI) 707012.3	(UI) 707210.0	(UI) 707407.7	(UI) 707605.4
(UI) 707803.1	(UI) 708000.7	(UI) 708198.4	(UI) 708396.1	(UI) 708593.8	(UI) 708791.4	(UI) 708989.1
(UI) 709384.5	(UI) 709582.2	(UI) 709779.9	(UI) 709977.5	(UI) 710175.2	(UI) 710372.9	(UI) 710570.6
(UI) 266388.5	(UI) 266388.5	(UI) 266388.5	(UI) 266388.5	(UI) 266388.5	(UI) 266388.5	(UI) 266388.5
(UI) 303896.3	(UI) 303896.3	(UI) 303896.3	(UI) 303896.3	(UI) 303896.3	(UI) 303896.3	(UI) 303896.3
(UI) 526456.6	(UI) 526456.6	(UI) 526456.6	(UI) 526456.6	(UI) 526456.6	(UI) 526456.6	(UI) 526456.6
(UI) 60282.03	(UI) 60257.07	(UI) 60232.12	(UI) 60207.17	(UI) 60182.22	(UI) 60157.27	(UI) 60132.32
(UI) 105881.5	(UI) 105945.1	(UI) 106008.7	(UI) 106072.3	(UI) 106135.9	(UI) 106199.5	(UI) 106263.0
(UI) 106326.6	(UI) 106390.2	(UI) 106453.8	(UI) 106517.4	(UI) 106581.0	(UI) 106644.6	(UI) 106708.1
(UI) 106771.7	(UI) 106835.3	(UI) 106898.9	(UI) 106962.5	(UI) 107026.1	(UI) 107089.7	(UI) 107153.3
(UI) 546453.9	(UI) 546453.9	(UI) 546453.9	(UI) 546453.9	(UI) 546453.9	(UI) 546453.9	(UI) 546453.9
(UI) 533793.8	(UI) 90096.34	(UI) 90123.72	(UI) 90151.09	(UI) 90178.47	(UI) 90205.85	(UI) 90233.23
(UI) 90260.61	(UI) 90287.99	(UI) 90315.36	(UI) 90342.74	(UI) 90370.12	(UI) 90397.50	(UI) 90424.88
(UI) 90452.26	(UI) 90479.63	(UI) 90507.01	(UI) 90534.39	(UI) 90561.77	(UI) 90589.15	(UI) 90616.53
(UI) 315665.2	(UI) 315749.5	(UI) 315833.7	(UI) 315917.9	(UI) 316002.1	(UI) 316086.3	(UI) 316170.6
(UI) 316394.8	(UI) 316479.0	(UI) 316563.2	(UI) 316647.4	(UI) 316731.7	(UI) 316815.9	(UI) 316899.1
(UI) 317124.3	(UI) 317208.5	(UI) 317292.8	(UI) 317377.0	(UI) 317461.2	(UI) 317545.4	(UI) 317629.6
(UI) 317853.9	(UI) 317938.1	(UI) 318022.3	(UI) 318106.5	(UI) 318190.7	(UI) 318274.9	(UI) 318359.1
(UI) 318583.4	(UI) 318667.6	(UI) 318751.8	(UI) 318836.0	(UI) 318920.2	(UI) 319004.4	(UI) 319088.6
(UI) 87516.33	(UI) 87545.23	(UI) 87574.12	(UI) 87603.01	(UI) 87631.91	(UI) 87660.80	(UI) 87689.70
(UI) 87718.59	(UI) 87747.49	(UI) 87776.38	(UI) 87805.27	(UI) 87834.17	(UI) 87863.06	(UI) 87891.96
(UI) 87920.85	(UI) 87949.75	(UI) 87978.64	(UI) 88007.53	(UI) 88036.43	(UI) 88065.32	(UI) 88094.22
(UI) 88123.11	(UI) 88152.01	(UI) 88180.90	(UI) 88209.79	(UI) 88238.69	(UI) 88267.58	(UI) 88296.48
(UI) 88325.37	(UI) 88354.27	(UI) 88383.16	(UI) 88412.05	(UI) 88440.95	(UI) 88469.84	(UI) 88498.74
(UI) 210105.9	(UI) 210105.9	(UI) 210105.9	(UI) 210105.9	(UI) 210105.9	(UI) 210105.9	(UI) 210105.9
(UI) 2770153.	(UI) 2773977.	(UI) 2777802.	(UI) 2781627.	(UI) 2785452.	(UI) 2789277.	(UI) 2793102.
(UI) 2796927.	(UI) 2800751.	(UI) 2804576.	(UI) 2808401.	(UI) 2812226.	(UI) 2816051.	(UI) 2819876.
(UI) 2823700.	(UI) 2827525.	(UI) 2831350.	(UI) 2835175.	(UI) 2839000.	(UI) 2842825.	(UI) 2846649.

(UI) 2850474.	(UI) 2854299.	(UI) 1524658.	(UI) 1526763.	(UI) 1528868.	(UI) 1530973.	(UI) 1533078.
(UI) 1535183.	(UI) 1537288.	(UI) 1539394.	(UI) 1541499.	(UI) 1543604.	(UI) 1545709.	(UI) 1547814.
(UI) 1549919.	(UI) 1552025.	(UI) 1554130.	(UI) 1556235.	(UI) 1558340.	(UI) 1560445.	(UI) 1562550.
(UI) 1564655.	(UI) 1566761.	(UI) 1568866.	(UI) 1570971.	(UI) 1573076.	(UI) 1575181.	(UI) 1577286.
(UI) 752423.7	(UI) 752736.2	(UI) 753048.7	(UI) 753361.2	(UI) 753673.7	(UI) 753986.2	(UI) 754298.7
(UI) 754611.2	(UI) 893601.7	(UI) 893973.3	(UI) 894344.9	(UI) 894716.5	(UI) 895088.1	(UI) 895459.7
(UI) 895831.2	(UI) 896202.8	(UI) 896574.4	(UI) 896946.0	(UI) 897317.6	(UI) 1524658.	(UI) 1526763.
(UI) 1528868.	(UI) 1530973.	(UI) 1533078.	(UI) 1535183.	(UI) 1537288.	(UI) 1539394.	(UI) 1541499.
(UI) 1543604.	(UI) 1545709.	(UI) 1547814.	(UI) 1549919.	(UI) 1552025.	(UI) 1554130.	(UI) 1556235.
(UI) 1558340.	(UI) 1560445.	(UI) 1562550.	(UI) 1564655.	(UI) 1566761.	(UI) 1568866.	(UI) 1570971.
(UI) 751486.3	(UI) 751798.8	(UI) 752111.3	(UI) 752423.7	(UI) 752736.2	(UI) 753048.7	(UI) 753361.2
(UI) 753673.7	(UI) 753986.2	(UI) 754298.7	(UI) 754611.2	(UI) 894347.5	(UI) 894719.4	(UI) 895091.3
(UI) 895463.2	(UI) 895835.1	(UI) 896207.0	(UI) 896578.9	(UI) 896950.7	(UI) 897322.6	(UI) 897694.5
(UI) 898066.4	(UI) 2661932.	(UI) 2661932.	(UI) 2665602.	(UI) 2669273.	(UI) 2672943.	(UI) 2676613.
(UI) 2680284.	(UI) 2683954.	(UI) 2687624.	(UI) 2691295.	(UI) 2694965.	(UI) 2698635.	(UI) 2702306.
(UI) 2705976.	(UI) 2709646.	(UI) 2713317.	(UI) 2716987.	(UI) 2720657.	(UI) 2724328.	(UI) 2727998.
(UI) 2731669.	(UI) 2735339.	(UI) 2739009.				

Plot output file: cr-tr.plt (UNformatted)

Restart output file: none

In the above input and in the following results, Node, Path, and HTC types are designated as follows:

AC: Active, Compressible	AI: Active, Incompressible	BC: Boundary, Compressible	BI: Boundary, Incompressible
CK: Conduction only	CI: Film condensation, laminar	Cr: Film condensation, ripple	Ct: Film condensation, turb.
CR: Convection or Radiation	FC: Forced Convection	Fi: Forced Convection, intern.	Fl: Forced Convection, laminar
Ft: Forced Convection, turb.	HX: Heat exchanger	MC: CFS active Mass flow	MI: Mass flow, Incompressible
MP: CFS Mass flow (delta P)	Mx: Mass flow, condensate	N: Null	NA: Not Applicable
NC: Natural Convection	NK: Natural conduction	Nl: Natural conv'n. laminar	Ne: Natural conv'n. sub-lam'r
Nt: Natural conv'n. turbulent	NX: Natural exChange	Rn: general Radiation	RV: Radiation, Vapor/surface
SX: Specified heat flux	Ta: Tagami condensation	Uc: Uchida condensation	VP: CFS Volume flow (delta P)
VZ: CFS Volume flow (delta Z)	WC: Wall, Cylindrical	WH: Wall Head node	WI: Wall, Internal node/path
WP: Wall, Planar (slab)	WS: Wall, Spherical	WT: Wall Tail node	XT: specified X/T function

1a...7e: FC/WC by Re/Ra range



Case 1 after step no. 0, time (XA) is 0.000000 hrs. 0 rejected CM steps, next time step is 1.000000E-02 hrs.

Node Results	Node 1 AI	Node 2 AI	Node 3 AI	Node 4 N	Node 5 N	Node 6 BI	Node 7 N	Node 8 N
Temperature, aF	77.00000	77.00000	77.00000	-459.6700	-459.6700	77.00000	-459.6700	-459.6700
Density, lbm/ft**3	7.1000002E-02	7.1000002E-02	7.1000002E-02	0.0000000	0.0000000	1.0000000	0.0000000	0.0000000
Node Results	Node 9 N	Node 10 N	Node 11 N	Node 12 BI	Node 13 BI	Node 14 N	Node 15 N	Node 16 N
Temperature, aF	-459.6700	-459.6700	-459.6700	105.1000	105.1000	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	1.0000000	1.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 17 BI	Node 18 BI	Node 19 N	Node 20 N	Node 21 N	Node 22 N	Node 23 N	Node 24 N
Temperature, aF	105.1000	105.1000	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	1.0000000	1.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 25 N	Node 26 N	Node 27 N	Node 28 N	Node 29 BI	Node 30 BI	Node 31 N	Node 32 N
Temperature, aF	-459.6700	-459.6700	-459.6700	-459.6700	105.1000	105.1000	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	1.0000000	1.0000000	0.0000000	0.0000000
Node Results	Node 33 N	Node 34 N	Node 35 N	Node 36 N	Node 37 N	Node 38 N	Node 39 N	Node 40 N
Temperature, aF	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 41 N	Node 42 N	Node 43 N	Node 44 N	Node 45 N	Node 46 N	Node 47 N	Node 48 N
Temperature, aF	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 49 AI	Node 50 AI	Node 51 AI	Node 52 AI	Node 53 N	Node 54 N	Node 55 BI	Node 56 WT
Temperature, aF	90.00000	90.00000	90.00000	90.00000	-459.6700	-459.6700	162.0000	77.00000
Density, lbm/ft**3	7.1000002E-02	7.1000002E-02	7.1000002E-02	7.1000002E-02	0.0000000	0.0000000	1.0000000	125.0000
Node Results	Node 57 WH	Node 58 WT	Node 59 WH	Node 60 WT	Node 61 WH	Node 62 WT	Node 63 WH	Node 64 WT
Temperature, aF	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	145.0000	145.0000	125.0000
Node Results	Node 65 WH	Node 66 WT	Node 67 WH	Node 68 WT	Node 69 WH	Node 70 WT	Node 71 WH	Node 72 WT
Temperature, aF	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 73 WH	Node 74 WT	Node 75 WH	Node 76 WT	Node 77 WH	Node 78 WT	Node 79 WH	Node 80 WT
Temperature, aF	77.00000	77.00000	77.00000	83.32299	98.97054	83.32299	98.97054	77.00000
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000

Node Results	Node 81 WH	Node 82 WT	Node 83 WH	Node 84 WT	Node 85 WH	Node 86 WT	Node 87 WH	Node 88 WT
Temperature, °F	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	84.62282
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	145.0000
Node Results	Node 89 WH	Node 90 WT	Node 91 WH	Node 92 WT	Node 93 WH	Node 94 WT	Node 95 WH	Node 96 WT
Temperature, °F	97.68711	84.62282	97.68711	84.35200	90.59790	84.27840	85.33160	77.00000
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	100.0000	100.0000	100.0000
Node Results	Node 97 WH	Node 98 WT	Node 99 WH	Node 100 WT	Node 101 WH	Node 102 WT	Node 103 WH	Node 104 WT
Temperature, °F	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000
Density, lbm/ft**3	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
Node Results	Node 105 WH	Node 106 WT	Node 107 WH	Node 108 WT	Node 109 WH	Node 110 WT	Node 111 WH	Node 112 WT
Temperature, °F	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	84.27840
Density, lbm/ft**3	100.0000	125.0000	125.0000	125.0000	125.0000	100.0000	100.0000	100.0000
Node Results	Node 113 WH	Node 114 WT	Node 115 WH	Node 116 WT	Node 117 WH	Node 118 WT	Node 119 WH	Node 120 WT
Temperature, °F	85.33160	84.35200	90.59790	84.62282	97.68711	84.62282	97.68711	82.67840
Density, lbm/ft**3	100.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	125.0000
Node Results	Node 121 WH	Node 122 WT	Node 123 WH	Node 124 WT	Node 125 WH	Node 126 WT	Node 127 WH	Node 128 WT
Temperature, °F	86.05010	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 129 WH	Node 130 WT	Node 131 WH	Node 132 WT	Node 133 WH	Node 134 WT	Node 135 WH	Node 136 WT
Temperature, °F	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 137 WH	Node 138 WT	Node 139 WH	Node 140 WT	Node 141 WH	Node 142 WT	Node 143 WH	Node 144 WT
Temperature, °F	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	100.0000	100.0000	100.0000
Node Results	Node 145 WH	Node 146 WT	Node 147 WH	Node 148 WT	Node 149 WH	Node 150 WT	Node 151 WH	Node 152 WT
Temperature, °F	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000
Density, lbm/ft**3	100.0000	100.0000	100.0000	100.0000	100.0000	125.0000	125.0000	125.0000
Node Results	Node 153 WH	Node 154 WT	Node 155 WH	Node 156 WT	Node 157 WH	Node 158 WT	Node 159 WH	Node 160 WT
Temperature, °F	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000	77.00000
Density, lbm/ft**3	125.0000	100.0000	100.0000	125.0000	125.0000	490.0000	490.0000	490.0000
Node Results	Node 161 WH	Node 162 N	Node 163 N	Node 164 N	Node 165 N	Node 166 N	Node 167 N	Node 168 N
Temperature, °F	77.00000	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Node Results	Node 169 N	Node 170 N	Node 171 N	Node 172 N	Node 173 N	Node 174 N	Node 175 N	Node 176 WT
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	83.43568
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	145.0000
Node Results	Node 177 WH	Node 178 WT	Node 179 WH	Node 180 WT	Node 181 WH	Node 182 WT	Node 183 WH	Node 184 WT
Temperature, °F	83.79595	83.43568	83.79595	88.54820	92.62210	88.54820	92.62210	83.43568
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 185 WH	Node 186 WT	Node 187 WH	Node 188 WT	Node 189 WH	Node 190 WT	Node 191 WH	Node 192 N
Temperature, °F	83.79595	88.54820	92.62210	83.43568	83.79595	88.54820	92.62210	-459.6700
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	0.0000000
Node Results	Node 193 N	Node 194 N	Node 195 N	Node 196 N	Node 197 N	Node 198 N	Node 199 N	Node 200 N
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 201 AI	Node 202 N	Node 203 AI	Node 204 AI	Node 205 N	Node 206 N	Node 207 AI	Node 208 N
Temperature, °F	77.00000	-459.6700	77.00000	77.00000	-459.6700	-459.6700	77.00000	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	490.0000	490.0000	0.0000000	0.0000000	490.0000	0.0000000
Node Results	Node 209 N	Node 210 AI	Node 211 N	Node 212 AI	Node 213 AI	Node 214 N	Node 215 N	Node 216 AI
Temperature, °F	-459.6700	77.00000	-459.6700	77.00000	77.00000	-459.6700	-459.6700	77.00000
Density, lbm/ft**3	0.0000000	490.0000	0.0000000	490.0000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 217 N	Node 218 N	Node 219 AI	Node 220 N	Node 221 N	Node 222 AI	Node 223 N	Node 224 N
Temperature, °F	-459.6700	-459.6700	77.00000	-459.6700	-459.6700	77.00000	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 225 AI	Node 226 N	Node 227 N	Node 228 AI	Node 229 N	Node 230 N	Node 231 AI	Node 232 N
Temperature, °F	77.00000	-459.6700	-459.6700	77.00000	-459.6700	-459.6700	81.55410	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000
Node Results	Node 233 N	Node 234 AI	Node 235 N	Node 236 N	Node 237 AI	Node 238 N	Node 239 N	Node 240 AI
Temperature, °F	-459.6700	77.00000	-459.6700	-459.6700	77.00000	-459.6700	-459.6700	77.00000
Density, lbm/ft**3	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 241 N	Node 242 N	Node 243 AI	Node 244 N	Node 245 N	Node 246 AI	Node 247 N	Node 248 N
Temperature, °F	-459.6700	-459.6700	81.55410	-459.6700	-459.6700	77.00000	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 249 N	Node 250 N	Node 251 AI	Node 252 WT	Node 253 WH	Node 254 WT	Node 255 WH	Node 256 WT
Temperature, °F	-459.6700	-459.6700	95.00000	87.90000	87.90000	87.70000	87.70000	95.00000
Density, lbm/ft**3	0.0000000	0.0000000	7.1000002E-02	490.0000	490.0000	490.0000	490.0000	490.0000

Node Results	Node 257 WH	Node 258 WT	Node 259 WH	Node 260 WT	Node 261 WH	Node 262 N	Node 263 N	Node 264 AI
Temperature, aF	95.00000	95.00000	95.00000	95.00000	95.00000	-459.6700	-459.6700	95.00000
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	0.0000000	0.0000000	7.1000002E-02
Node Results	Node 265 WT	Node 266 WH	Node 267 WT	Node 268 WH	Node 269 WT	Node 270 WH	Node 271 WT	Node 272 WH
Temperature, aF	87.90000	87.90000	87.70000	87.70000	95.00000	95.00000	95.00000	95.00000
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 273 WT	Node 274 WH	Node 275 N	Node 276 N	Node 277 AI	Node 278 WT	Node 279 WH	Node 280 WT
Temperature, aF	95.00000	95.00000	-459.6700	-459.6700	95.00000	87.90000	87.90000	87.90000
Density, lbm/ft**3	490.0000	490.0000	0.0000000	0.0000000	7.1000002E-02	490.0000	490.0000	490.0000
Node Results	Node 281 WH	Node 282 WT	Node 283 WH	Node 284 WT	Node 285 WH	Node 286 WT	Node 287 WH	Node 288 WT
Temperature, aF	87.90000	87.90000	87.90000	87.90000	87.90000	87.70000	87.70000	87.70000
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 289 WH	Node 290 N	Node 291 WT	Node 292 WH	Node 293 WT	Node 294 WH	Node 295 WT	Node 296 WH
Temperature, aF	87.70000	-459.6700	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000
Density, lbm/ft**3	490.0000	0.0000000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 297 WT	Node 298 WH	Node 299 N	Node 300 N	Node 301 WT	Node 302 WH	Node 303 WT	Node 304 WH
Temperature, aF	95.00000	95.00000	-459.6700	-459.6700	90.00000	90.00000	94.28994	100.8829
Density, lbm/ft**3	490.0000	490.0000	0.0000000	0.0000000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 305 WT	Node 306 WH	Node 307 WT	Node 308 WH	Node 309 WT	Node 310 WH	Node 311 WT	Node 312 WH
Temperature, aF	94.28994	100.8829	94.00250	97.03190	95.53440	97.03470	90.00000	90.00000
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 313 WT	Node 314 WH	Node 315 WT	Node 316 WH	Node 317 WT	Node 318 WH	Node 319 WT	Node 320 WH
Temperature, aF	90.00000	90.00000	90.00000	90.00000	93.75785	100.3044	90.00000	90.00000
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 321 WT	Node 322 WH	Node 323 WT	Node 324 WH	Node 325 WT	Node 326 WH	Node 327 WT	Node 328 WH
Temperature, aF	93.58476	101.5827	84.88060	83.52960	90.00000	90.00000	93.75785	100.3044
Density, lbm/ft**3	125.0000	125.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 329 WT	Node 330 WH	Node 331 WT	Node 332 WH	Node 333 WT	Node 334 WH	Node 335 WT	Node 336 WH
Temperature, aF	90.00000	90.00000	90.00000	90.00000	90.00000	90.00000	84.88060	83.52960
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 337 WT	Node 338 WH	Node 339 WT	Node 340 WH	Node 341 WT	Node 342 WH	Node 343 WT	Node 344 WH
Temperature, aF	93.58476	101.5827	90.00000	90.00000	95.53440	97.03470	94.00250	97.03190
Density, lbm/ft**3	125.0000	125.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000

Node Results	Node 345 MT	Node 346 MH	Node 347 MT	Node 348 MH	Node 349 MT	Node 350 MH	Node 351 MT	Node 352 MH
Temperature, eF	94.28994	100.8829	94.28994	100.8829	91.70260	92.50540	90.00000	90.00000
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	125.0000	125.0000	145.0000	145.0000
Node Results	Node 353 MT	Node 354 MH	Node 355 MT	Node 356 MH	Node 357 MT	Node 358 MH	Node 359 MT	Node 360 MH
Temperature, eF	139.0847	158.9535	139.0847	158.9535	105.2586	108.0787	105.2586	108.0787
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 361 MT	Node 362 MH	Node 363 MT	Node 364 MH	Node 365 MT	Node 366 MH	Node 367 MT	Node 368 MH
Temperature, eF	139.0847	158.9535	105.2586	108.0787	105.2586	108.0787	139.0847	158.9535
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 369 AI	Node 370 N	Node 371 N	Node 372 AI	Node 373 N	Node 374 N	Node 375 AI	Node 376 AI
Temperature, eF	90.00000	-459.6700	-459.6700	90.00000	-459.6700	-459.6700	90.00000	90.00000
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	7.1000002E-02
Node Results	Node 377 AI	Node 378 AI	Node 379 AI	Node 380 AI	Node 381 AI	Node 382 N	Node 383 N	Node 384 AI
Temperature, eF	90.00000	90.00000	90.00000	90.00000	90.00000	-459.6700	-459.6700	90.00000
Density, lbm/ft**3	490.0000	490.0000	7.1000002E-02	490.0000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 385 N	Node 386 N	Node 387 AI	Node 388 N	Node 389 N	Node 390 AI	Node 391 N	Node 392 N
Temperature, eF	-459.6700	-459.6700	90.00000	-459.6700	-459.6700	90.00000	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 393 N	Node 394 N	Node 395 N	Node 396 N	Node 397 N	Node 398 N	Node 399 N	Node 400 N
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 401 N	Node 402 N	Node 403 BI	Node 404 BI	Node 405 BI			
Temperature, eF	-459.6700	-459.6700	122.0000	122.0000	104.0000			
Density, lbm/ft**3	0.0000000	0.0000000	1.000000	1.000000	1.000000			

Path Results	Path 1 CR	Path 2 CR	Path 3 WP	Path 4 CR	Path 5 CR	Path 6 CR	Path 7 CR	Path 8 WP
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	0.0000	4.955 Ck	0.0000	0.0000	0.0000	0.0000	5.000 Ck
Path Results	Path 9 N	Path 10 N	Path 11 CR	Path 12 CR	Path 13 WP	Path 14 N	Path 15 N	Path 16 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.0000	0.0000	5.000 Ck	0.0000 N	0.0000 N	0.0000
Path Results	Path 17 CR	Path 18 WP	Path 19 CR	Path 20 CR	Path 21 CR	Path 22 CR	Path 23 WP	Path 24 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	11.04 Ck	0.0000	0.0000	0.0000	0.0000	5.000 Ck	0.0000 N
Path Results	Path 25 N	Path 26 CR	Path 27 CR	Path 28 WP	Path 29 N	Path 30 N	Path 31 CR	Path 32 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000	0.0000	5.000 Ck	0.0000 N	0.0000 N	0.0000	0.0000
Path Results	Path 33 WP	Path 34 CR	Path 35 CR	Path 36 CR	Path 37 CR	Path 38 WP	Path 39 N	Path 40 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	4.955 Ck	0.0000	0.0000	0.0000	0.0000	5.000 Ck	0.0000 N	0.0000 N
Path Results	Path 41 CR	Path 42 CR	Path 43 WP	Path 44 N	Path 45 N	Path 46 CR	Path 47 CR	Path 48 WP
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	0.0000	5.000 Ck	0.0000 N	0.0000 N	0.0000	0.0000	5.000 Ck
Path Results	Path 49 N	Path 50 N	Path 51 CR	Path 52 CR	Path 53 WP	Path 54 CR	Path 55 CR	Path 56 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	-111.6971	-253.9091	-365.6062	-243.6257	-121.9806	-127.8204
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1536 Rn	0.3492 NC	4.876 Ck	0.3456 NC	0.1730 Rn	0.1536 Rn
Path Results	Path 57 CR	Path 58 WP	Path 59 CR	Path 60 CR	Path 61 CR	Path 62 CR	Path 63 WP	Path 64 N
Heat Rate, Btu/hr	-290.5603	-418.3807	-278.7926	-139.5883	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.3492 NC	4.876 Ck	0.3456 NC	0.1730 Rn	0.0000	0.0000	5.000 Ck	0.0000 N
Path Results	Path 65 N	Path 66 CR	Path 67 CR	Path 68 WP	Path 69 N	Path 70 N	Path 71 CR	Path 72 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000	0.0000	5.000 Ck	0.0000 N	0.0000 N	0.0000	0.0000
Path Results	Path 73 WP	Path 74 N	Path 75 N	Path 76 CR	Path 77 CR	Path 78 WP	Path 79 N	Path 80 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000 Ck	0.0000 N	0.0000 N	0.0000	0.0000	5.000 Ck	0.0000 N	0.0000 N
Path Results	Path 81 CR	Path 82 CR	Path 83 WP	Path 84 CR	Path 85 CR	Path 86 CR	Path 87 CR	Path 88 WP
Heat Rate, Btu/hr	-286.0439	-689.1097	-975.1528	-663.9842	-311.1685	-370.1883	-891.6224	-1262.010
HTC, Btu/ft <sup>2</sup> hr°F	0.1542 Rn	0.3714 NC	11.04 Ck	0.3680 NC	0.1725 Rn	0.1542 Rn	0.3714 NC	11.04 Ck



Path Results	Path 89 CR	Path 90 CR	Path 91 CR	Path 92 CR	Path 93 WP	Path 94 N	Path 95 N	Path 96 CR
Heat Rate, Btu/hr	-859.3057	-402.7036	-101.9333	-242.8373	-344.7792	0.0000000	0.0000000	-572.9554
HTC, Btu/ft <sup>2</sup> h <sup>1/2</sup>	0.3680	NC 0.1725	Rn 0.1541	Rn 0.3670	NC 11.04	CK 0.0000	N 0.0000	N 0.1540
Path Results	Path 97 CR	Path 98 WP	Path 99 N	Path 100 N	Path 101 CR	Path 102 CR	Path 103 WP	Path 104 N
Heat Rate, Btu/hr	-1360.715	-1248.834	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> h <sup>1/2</sup>	0.3658	NC 2.320	CK 0.0000	N 0.0000	N 0.0000	0.0000	2.320	CK 0.0000
Path Results	Path 105 N	Path 106 CR	Path 107 CR	Path 108 WP	Path 109 N	Path 110 N	Path 111 CR	Path 112 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> h <sup>1/2</sup>	0.0000	N 0.0000	0.0000	2.320	CK 0.0000	N 0.0000	N 0.0000	0.0000
Path Results	Path 113 WP	Path 114 N	Path 115 N	Path 116 CR	Path 117 CR	Path 118 WP	Path 119 N	Path 120 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> h <sup>1/2</sup>	2.320	CK 0.0000	N 0.0000	N 0.0000	0.0000	2.320	CK 0.0000	N 0.0000
Path Results	Path 121 CR	Path 122 CR	Path 123 WP	Path 124 N	Path 125 N	Path 126 CR	Path 127 CR	Path 128 WP
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> h <sup>1/2</sup>	0.0000	0.0000	2.320	CK 0.0000	N 0.0000	N 0.0000	0.0000	5.000
Path Results	Path 129 N	Path 130 N	Path 131 CR	Path 132 CR	Path 133 WP	Path 134 N	Path 135 N	Path 136 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> h <sup>1/2</sup>	0.0000	N 0.0000	N 0.0000	0.0000	5.000	CK 0.0000	N 0.0000	N 0.0000
Path Results	Path 137 CR	Path 138 WP	Path 139 N	Path 140 N	Path 141 CR	Path 142 CR	Path 143 WP	Path 144 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	-573.2917	-1361.514	-1249.567	0.0000000
HTC, Btu/ft <sup>2</sup> h <sup>1/2</sup>	0.0000	2.320	CK 0.0000	N 0.0000	N 0.1540	Rn 0.3658	NC 2.320	CK 0.0000
Path Results	Path 145 N	Path 146 CR	Path 147 CR	Path 148 WP	Path 149 N	Path 150 N	Path 151 CR	Path 152 CR
Heat Rate, Btu/hr	0.0000000	-101.9333	-242.8373	-344.7792	0.0000000	0.0000000	-370.1883	-891.8224
HTC, Btu/ft <sup>2</sup> h <sup>1/2</sup>	0.0000	N 0.1541	Rn 0.3670	NC 11.04	CK 0.0000	N 0.0000	N 0.1542	Rn 0.3714
Path Results	Path 153 WP	Path 154 CR	Path 155 CR	Path 156 CR	Path 157 CR	Path 158 WP	Path 159 CR	Path 160 CR
Heat Rate, Btu/hr	-1262.010	-859.3057	-402.7036	-109.9988	-264.9986	-374.9971	-255.3366	-119.6605
HTC, Btu/ft <sup>2</sup> h <sup>1/2</sup>	11.04	CK 0.3680	NC 0.1725	Rn 0.1542	Rn 0.3714	NC 11.04	CK 0.3680	NC 0.1725
Path Results	Path 161 CR	Path 162 CR	Path 163 WP	Path 164 N	Path 165 N	Path 166 CR	Path 167 CR	Path 168 WP
Heat Rate, Btu/hr	-201.4792	-442.8305	-650.2340	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> h <sup>1/2</sup>	0.1533	Rn 0.3370	NC 5.000	CK 0.0000	N 0.0000	N 0.0000	0.0000	5.000
Path Results	Path 169 N	Path 170 N	Path 171 CR	Path 172 CR	Path 173 WP	Path 174 N	Path 175 N	Path 176 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> h <sup>1/2</sup>	0.0000	N 0.0000	N 0.0000	0.0000	5.000	CK 0.0000	N 0.0000	N 0.0000



Path Results	Path 177 CR	Path 178 WP	Path 179 N	Path 180 N	Path 181 CR	Path 182 CR	Path 183 WP	Path 184 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	5.000	Ch 0.0000	N 0.0000	N 0.0000	0.0000	5.000	Ch 0.0000
Path Results	Path 185 N	Path 186 CR	Path 187 CR	Path 188 WP	Path 189 N	Path 190 N	Path 191 CR	Path 192 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	0.0000	5.000	Ch 0.0000	N 0.0000	N 0.0000	0.0000
Path Results	Path 193 WP	Path 194 N	Path 195 N	Path 196 CR	Path 197 CR	Path 198 WP	Path 199 N	Path 200 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000	Ch 0.0000	N 0.0000	N 0.0000	0.0000	5.000	Ch 0.0000	N 0.0000
Path Results	Path 201 CR	Path 202 CR	Path 203 WP	Path 204 N	Path 205 N	Path 206 CR	Path 207 CR	Path 208 WP
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	0.0000	5.000	Ch 0.0000	N 0.0000	N 0.0000	0.0000	5.000
Path Results	Path 209 N	Path 210 N	Path 211 CR	Path 212 CR	Path 213 WP	Path 214 N	Path 215 N	Path 216 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	0.0000	5.000	Ch 0.0000	N 0.0000	N 0.0000
Path Results	Path 217 CR	Path 218 WP	Path 219 N	Path 220 N	Path 221 CR	Path 222 CR	Path 223 WP	Path 224 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	2.320	Ch 0.0000	N 0.0000	N 0.0000	0.0000	2.320	Ch 0.0000
Path Results	Path 225 N	Path 226 CR	Path 227 CR	Path 228 WP	Path 229 N	Path 230 N	Path 231 CR	Path 232 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	0.0000	2.320	Ch 0.0000	N 0.0000	N 0.0000	0.0000
Path Results	Path 233 WP	Path 234 N	Path 235 N	Path 236 CR	Path 237 CR	Path 238 WP	Path 239 N	Path 240 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	2.320	Ch 0.0000	N 0.0000	N 0.0000	0.0000	5.000	Ch 0.0000	N 0.0000
Path Results	Path 241 CR	Path 242 CR	Path 243 WP	Path 244 N	Path 245 N	Path 246 CR	Path 247 CR	Path 248 WP
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	0.0000	5.000	Ch 0.0000	N 0.0000	N 0.0000	0.0000	2.320
Path Results	Path 249 N	Path 250 N	Path 251 CR	Path 252 CR	Path 253 WP	Path 254 N	Path 255 N	Path 256 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-2600.117
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	0.0000	5.000	Ch 0.0000	N 0.0000	N 0.1537
Path Results	Path 257 CR	Path 258 WP	Path 259 CR	Path 260 CR	Path 261 CR	Path 262 CR	Path 263 WP	Path 264 CR
Heat Rate, Btu/hr	-16.92133	-2617.037	-16.31232	-2600.725	-2588.645	-16.84668	-2605.491	-16.24035
HTC, Btu/ft <sup>2</sup> hr°F	1.0000E-03 XT	11.05	Ch 1.0000E-03 XT	0.1594	Rn 0.1537	Rn 1.0000E-03 XT	11.05	Ch 1.0000E-03 XT

Path Results	Path 265 CR	Path 266 CR	Path 267 CR	Path 268 WP	Path 269 N	Path 270 N	Path 271 CR	Path 272 CR
Heat Rate, Btu/hr	-2589.251	-1051.711	-3328.148	-4380.006	0.0000000	0.0000000	-1047.032	-3311.338
HTC, Btu/ft <sup>2</sup> hr°F	0.1594	Rn 0.1559	Rn 0.4932	NC 11.04	Ck 0.0000	N 0.0000	N 0.1559	Rn 0.4932
Path Results	Path 273 WP	Path 274 N	Path 275 N	Path 276 CR	Path 277 CR	Path 278 WP	Path 279 CR	Path 280 CR
Heat Rate, Btu/hr	-4360.516	0.0000000	0.0000000	-2190.415	-14.25503	-2204.670	-13.74198	-2190.926
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.0000	N 0.0000	N 0.1537	Rn 1.0000E-03 XT	11.05	Ck 1.0000E-03 XT	0.1594
Path Results	Path 281 CR	Path 282 CR	Path 283 WP	Path 284 N	Path 285 N	Path 286 CR	Path 287 CR	Path 288 WP
Heat Rate, Btu/hr	-3100.956	-9812.995	-12914.38	0.0000000	0.0000000	-2107.941	-13.71829	-2121.659
HTC, Btu/ft <sup>2</sup> hr°F	0.1559	Rn 0.4932	NC 11.04	Ck 0.0000	N 0.0000	N 0.1537	Rn 1.0000E-03 XT	11.05
Path Results	Path 289 CR	Path 290 CR	Path 291 CR	Path 292 CR	Path 293 WP	Path 294 N	Path 295 N	Path 296 CR
Heat Rate, Btu/hr	-13.22456	-2108.434	-2951.380	-9339.661	-12291.45	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	1.0000E-03 XT	0.1594	Rn 0.1559	Rn 0.4932	NC 11.04	Ck 0.0000	N 0.0000	N 0.0000
Path Results	Path 297 CR	Path 298 N	Path 299 N	Path 300 CR	Path 301 CR	Path 302 CR	Path 303 CR	Path 304 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	0.0000	N 0.0000	N 0.0000	0.0000	0.0000	0.0000	0.0000
Path Results	Path 305 N	Path 306 N	Path 307 N	Path 308 CR	Path 309 CR	Path 310 N	Path 311 N	Path 312 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.0000	0.0000	0.0000	N 0.0000	N 0.0000
Path Results	Path 313 N	Path 314 CR	Path 315 CR	Path 316 N	Path 317 N	Path 318 CR	Path 319 CR	Path 320 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	0.0000	0.0000	N 0.0000	N 0.0000	0.0000	0.0000
Path Results	Path 321 CR	Path 322 N	Path 323 N	Path 324 N	Path 325 N	Path 326 CR	Path 327 CR	Path 328 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000	0.0000	0.0000
Path Results	Path 329 N	Path 330 N	Path 331 N	Path 332 CR	Path 333 CR	Path 334 N	Path 335 N	Path 336 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.0000	0.0000	0.0000	N 0.0000	N 0.0000
Path Results	Path 337 N	Path 338 CR	Path 339 CR	Path 340 N	Path 341 N	Path 342 N	Path 343 N	Path 344 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	0.0000	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000
Path Results	Path 345 CR	Path 346 N	Path 347 N	Path 348 N	Path 349 N	Path 350 CR	Path 351 CR	Path 352 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	0.0700	N 0.0000	N 0.0000	N 0.0000	N 0.0000	0.0000	0.0000

Path Results	Path 353 N	Path 354 N	Path 355 N	Path 356 CR	Path 357 CR	Path 358 N	Path 359 N	Path 360 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	-14.13113	-28.96844	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1529	Rn 0.3133	NC 0.0000	N 0.0000	N 0.0000
Path Results	Path 361 N	Path 362 CR	Path 363 CR	Path 364 N	Path 365 N	Path 366 N	Path 367 N	Path 368 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	0.0000	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000
Path Results	Path 369 CR	Path 370 N	Path 371 N	Path 372 N	Path 373 N	Path 374 CR	Path 375 CR	Path 376 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000	0.0000	0.0000
Path Results	Path 377 N	Path 378 N	Path 379 N	Path 380 CR	Path 381 CR	Path 382 N	Path 383 N	Path 384 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	-13.92230	-28.94033	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1529	Rn 0.3133	NC 0.0000	N 0.0000	N 0.0000
Path Results	Path 385 N	Path 386 CR	Path 387 CR	Path 388 N	Path 389 N	Path 390 N	Path 391 N	Path 392 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	13944.39
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	0.0000	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.5162
Path Results	Path 393 CR	Path 394 WP	Path 395 CR	Path 396 CR	Path 397 CR	Path 398 CR	Path 399 WP	Path 400 CR
Heat Rate, Btu/hr	9801.259	0.0000000	17333.47	6452.731	2282.162	1875.490	0.0000000	3118.715
HTC, Btu/ft <sup>2</sup> hr°F	0.3628	NC 2709.	Ck 0.4179	NC 0.1556	Rn 0.5159	Rn 0.4240	NC 2709.	Ck 0.4610
Path Results	Path 401 CR	Path 402 CR	Path 403 CR	Path 404 CR	Path 405 WP	Path 406 CR	Path 407 WP	Path 408 CR
Heat Rate, Btu/hr	1008.270	98455.43	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.1555	Rn 81.64	NC 0.0000	0.0000	2709.	Ck 0.0000	1116.	Ck 0.0000
Path Results	Path 409 WP	Path 410 N	Path 411 N	Path 412 CR	Path 413 CR	Path 414 WP	Path 415 CR	Path 416 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	13852.77	9736.862	0.0000000	17219.58	6410.335
HTC, Btu/ft <sup>2</sup> hr°F	1296.	Ck 0.0000	N 0.0000	N 0.5162	Rn 0.3628	NC 2709.	Ck 0.4179	NC 0.1556
Path Results	Path 417 CR	Path 418 CR	Path 419 WP	Path 420 CR	Path 421 CR	Path 422 CR	Path 423 CR	Path 424 CR
Heat Rate, Btu/hr	2169.184	1782.644	0.0000000	2964.324	958.3558	80404.78	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5159	Rn 0.4240	NC 2709.	Ck 0.4610	NC 0.1555	Rn 69.80	NC 0.0000	0.0000
Path Results	Path 425 WP	Path 426 CR	Path 427 WP	Path 428 CR	Path 429 WP	Path 430 N	Path 431 N	Path 432 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	4595.601
HTC, Btu/ft <sup>2</sup> hr°F	2709.	Ck 0.0000	1116.	Ck 0.0000	1296.	Ck 0.0000	N 0.0000	N 0.5162
Path Results	Path 433 CR	Path 434 WP	Path 435 CR	Path 436 CR	Path 437 CR	Path 438 CR	Path 439 WP	Path 440 CR
Heat Rate, Btu/hr	3230.165	0.0000000	5712.529	2126.603	5713.351	4015.812	0.0000000	7101.939
HTC, Btu/ft <sup>2</sup> hr°F	0.3628	NC 1296.	Ck 0.4179	NC 0.1556	Rn 0.5162	Rn 0.3628	NC 3099.	Ck 0.4179

Path Results	Path 441 CR	Path 442 CR	Path 443 CR	Path 444 WP	Path 445 CR	Path 446 CR	Path 447 CR	Path 448 CR
Heat Rate, Btu/hr	2643.839	498.4065	350.3210	0.0000000	619.5406	230.6364	1359.624	955.6550
HTC, Btu/ft <sup>2</sup> hr°F	0.1556	Rn 0.5162	Rn 0.3628	NC	3098.	Ck 0.4179	NC 0.1556	Rn 0.5162
Path Results	Path 449 WP	Path 450 CR	Path 451 CR	Path 452 CR	Path 453 CR	Path 454 WP	Path 455 CR	Path 456 CR
Heat Rate, Btu/hr	0.0000000	1690.070	629.1625	2496.821	2051.897	0.0000000	3412.060	1102.107
HTC, Btu/ft <sup>2</sup> hr°F	2709.	Ck 0.4179	NC 0.1556	Rn 0.5159	Rn 0.4240	NC	2409.	Ck 0.4810
Path Results	Path 457 CR	Path 458 CR	Path 459 WP	Path 460 CR	Path 461 CR	Path 462 CR	Path 463 CR	Path 464 WP
Heat Rate, Btu/hr	125.7825	103.3686	0.0000000	171.8896	55.57133	65647.12	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5159	Rn 0.4240	NC	2709.	Ck 0.4810	NC 0.1556	Rn	336.5
Path Results	Path 465 N	Path 466 N	Path 467 N	Path 468 N	Path 469 N	Path 470 N	Path 471 CR	Path 472 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000	0.0000
Path Results	Path 473 WP	Path 474 N	Path 475 N	Path 476 CR	Path 477 CR	Path 478 WP	Path 479 CR	Path 480 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	-167.9347	-314.4732	-482.4083	-307.3962	-175.0133
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.0000	N 0.0000	N 0.1641	Rn 0.3072	NC	11.04	Ck 0.3055
Path Results	Path 481 CR	Path 482 CR	Path 483 WP	Path 484 CR	Path 485 CR	Path 486 CR	Path 487 CR	Path 488 WP
Heat Rate, Btu/hr	-212.4874	-397.9022	-610.1900	-388.9676	-221.4426	-56.62665	-103.7206	-160.3482
HTC, Btu/ft <sup>2</sup> hr°F	0.1641	Rn 0.3072	NC	11.04	Ck 0.3055	NC 0.1739	Rn 0.1639	Rn 0.3003
Path Results	Path 489 N	Path 490 N	Path 491 CR	Path 492 CR	Path 493 WP	Path 494 N	Path 495 N	Path 496 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	-463.6549	-911.1739	-1404.564	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1646	Rn 0.3342	NC	11.04	Ck 0.0000	N 0.0000
Path Results	Path 497 CR	Path 498 WP	Path 499 N	Path 500 N	Path 501 CR	Path 502 CR	Path 503 WP	Path 504 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	11.04	Ck 0.0000	N 0.0000	N 0.0000	0.0000	11.04	Ck 0.0000
Path Results	Path 505 CR	Path 506 CR	Path 507 CR	Path 508 WP	Path 509 N	Path 510 N	Path 511 CR	Path 512 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-414.2046	-747.5483
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	0.0000	0.0000	11.04	Ck 0.0000	N 0.0000	N 0.1638	Rn 0.2941
Path Results	Path 513 WP	Path 514 CR	Path 515 CR	Path 516 CR	Path 517 CR	Path 518 WP	Path 519 CR	Path 520 CR
Heat Rate, Btu/hr	-1157.754	-727.2193	-430.5347	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.2925	NC 0.1732	Rn 0.0000	0.0000	11.04	Ck 0.0000	0.0000
Path Results	Path 521 CR	Path 522 CR	Path 523 WP	Path 524 CR	Path 525 CR	Path 526 CR	Path 527 CR	Path 528 WP
Heat Rate, Btu/hr	-89.63618	-158.4981	-248.1344	-154.5432	-93.59130	43.55090	88.70061	132.2075
HTC, Btu/ft <sup>2</sup> hr°F	0.1638	Rn 0.2896	NC	4.876	Ck 0.2877	NC 0.1743	Rn 0.1599	Rn 0.3257

Path Results	Path 529 N	Path 530 N	Path 531 CR	Path 532 CR	Path 533 WP	Path 534 N	Path 535 N	Path 536 CR
Heat Rate, Btu/hr	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-414.2046
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	0.0000	11.04 Ck	0.0000	N 0.0000	N 0.1638 Rn
Path Results	Path 537 CR	Path 538 WP	Path 539 CR	Path 540 CR	Path 541 CR	Path 542 CR	Path 543 WP	Path 544 N
Heat Rate, Btu/hr	-743.5483	-1157.754	-727.2193	-430.5347	0.000000	0.000000	0.000000	0.000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2941 NC	11.04 Ck	0.2925 NC	0.1732 Rn	0.0000	0.0000	11.04 Ck	0.0000 N
Path Results	Path 545 N	Path 546 CR	Path 547 CR	Path 548 WP	Path 549 CR	Path 550 CR	Path 551 CR	Path 552 CR
Heat Rate, Btu/hr	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	0.0000	11.04 Ck	0.0000	0.0000	0.0000	0.0000
Path Results	Path 553 WP	Path 554 N	Path 555 N	Path 556 CR	Path 557 CR	Path 558 WP	Path 559 N	Path 560 N
Heat Rate, Btu/hr	0.000000	0.000000	0.000000	48.13520	98.03751	146.1241	0.000000	0.000000
HTC, Btu/ft <sup>2</sup> hr°F	11.04 Ck	0.0000	N 0.0000	N 0.1599	Rn 0.3257	NC 11.04	Ck 0.0000	N 0.0000
Path Results	Path 561 CR	Path 562 CR	Path 563 WP	Path 564 CR	Path 565 CR	Path 566 CR	Path 567 CR	Path 568 WP
Heat Rate, Btu/hr	-68.26908	-120.7160	-188.9852	-117.7038	-71.28139	0.000000	0.000000	0.000000
HTC, Btu/ft <sup>2</sup> hr°F	0.1638 Rn	0.2896 NC	4.876 Ck	0.2877 NC	0.1743 Rn	0.0000	0.0000	11.04 Ck
Path Results	Path 569 N	Path 570 N	Path 571 CR	Path 572 CR	Path 573 WP	Path 574 N	Path 575 N	Path 576 CR
Heat Rate, Btu/hr	0.70000	0.000000	-463.6549	-941.1739	-1404.564	0.000000	0.000000	-56.62669
HTC, Btu/ft <sup>2</sup> hr°F	0.7000	N 0.0000	N 0.1646	Rn 0.3342	NC 11.04	Ck 0.0000	N 0.0000	N 0.1639 Rn
Path Results	Path 577 CR	Path 578 WP	Path 579 N	Path 580 N	Path 581 CR	Path 582 CR	Path 583 WP	Path 584 CR
Heat Rate, Btu/hr	-103.7206	-160.3482	0.000000	0.000000	-212.4874	-397.9022	-610.3900	-388.9476
HTC, Btu/ft <sup>2</sup> hr°F	0.3003 NC	11.04 Ck	0.0000	N 0.0000	N 0.1641	Rn 0.3072	NC 11.04	Ck 0.3055 NC
Path Results	Path 585 CR	Path 586 CR	Path 587 CR	Path 588 WP	Path 589 CR	Path 590 CR	Path 591 CR	Path 592 CR
Heat Rate, Btu/hr	-221.4426	-58.91088	-110.3160	-169.2270	-107.8234	-61.39347	-66.26504	-92.11907
HTC, Btu/ft <sup>2</sup> hr°F	0.1739 Rn	0.1641 Rn	0.3072 NC	11.04 Ck	0.3055 NC	0.1739 Rn	0.1629 Rn	0.2265 NC
Path Results	Path 593 WP	Path 594 N	Path 595 N	Path 596 CR	Path 597 CR	Path 598 WP	Path 599 N	Path 600 N
Heat Rate, Btu/hr	2033.756	0.000000	0.000000	0.000000	0.000000	-4417.673	0.000000	0.000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000 Ck	0.0000	N 0.0000	N 0.0000	0.0000	11.04 Ck	0.0000	N 0.0000
Path Results	Path 601 CR	Path 602 CR	Path 603 WP	Path 604 CR	Path 605 N	Path 606 CR	Path 607 CR	Path 608 WP
Heat Rate, Btu/hr	-22280.87	-120.3067	-22401.20	-22401.20	0.000000	-12263.12	-66.21530	-12329.34
HTC, Btu/ft <sup>2</sup> hr°F	0.1852 Rn	1.0000E-03 XT	11.04 Ck	3.000 XT	0.0000	N 0.1852	Rn 1.0000E-03 XT	11.04 Ck
Path Results	Path 609 CR	Path 610 N	Path 611 CR	Path 612 CR	Path 613 WP	Path 614 CR	Path 615 CR	Path 616 CR
Heat Rate, Btu/hr	-12329.34	0.000000	-1819.406	-10.76343	-1830.170	-9.820059	-1820.350	-2163.479
HTC, Btu/ft <sup>2</sup> hr°F	3.000 XT	0.0000	N 0.1690	Rn 1.0000E-03 XT	11.04 Ck	1.0000E-03 XT	0.1854 Rn	0.1690 Rn



Path Results	Path 617 CR	Path 618 WP	Path 619 CR	Path 620 CR	Path 621 CR	Path 622 CR	Path 623 WP	Path 624 CR
Heat Rate, Btu/hr	-12.79893	-2176.278	-11.67715	-2164.601	-12263.12	-66.21530	-12329.34	-12329.34
HTC, Btu/ft <sup>2</sup> hr°F	0.0000E-03 XT	11.04 Ck	1.0000E-03 XT	0.1854 Rn	0.1852 Rn	1.0000E-03 XT	11.04 Ck	3.000 XT
Path Results	Path 625 N	Path 626 CR	Path 627 CR	Path 628 WP	Path 629 CR	Path 630 CR	Path 631 CR	Path 632 CR
Heat Rate, Btu/hr	0.0000000	-1819.406	-10.76343	-1830.170	-9.820059	-1820.350	-2165.284	-12.80961
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1690 Rn	1.0000E-03 XT	11.04 Ck	1.0000E-03 XT	0.1854 Rn	0.1690 Rn	1.0000E-03 XT
Path Results	Path 633 WP	Path 634 CR	Path 635 CR	Path 636 CR	Path 637 CR	Path 638 WP	Path 639 CR	Path 640 N
Heat Rate, Btu/hr	-2178.094	-11.68690	-2164.407	-21380.91	-115.4473	-21496.38	-21496.38	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	11.04 Ck	1.0000E-03 XT	0.1854 Rn	0.1852 Rn	1.0000E-03 XT	11.04 Ck	3.000 XT	0.0000 N
Path Results	Path 641 CR	Path 642 CR	Path 643 N	Path 644 N	Path 645 N	Path 646 N	Path 647 CR	Path 648 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	0.0000	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.0000	0.0000
Path Results	Path 649 N	Path 650 N	Path 651 N	Path 652 N	Path 653 CR	Path 654 CR	Path 655 Ck	Path 656 Ck
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.0000	0.0000	0.2353 Ck	0.2353 Ck
Path Results	Path 657 CR	Path 658 CR	Path 659 CR	Path 660 CR	Path 661 Ck	Path 662 Ck	Path 663 CR	Path 664 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	0.0000	0.0000	0.0000	0.2353 Ck	0.2353 Ck	0.0000	0.0000
Path Results	Path 665 CR	Path 666 CR	Path 667 N	Path 668 N	Path 669 N	Path 670 N	Path 671 CR	Path 672 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	0.0000	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.0000	0.0000
Path Results	Path 673 N	Path 674 N	Path 675 N	Path 676 N	Path 677 CR	Path 678 CR	Path 679 N	Path 680 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.0000	0.0000	0.0000 N	0.0000 N
Path Results	Path 681 N	Path 682 N	Path 683 CR	Path 684 CR	Path 685 N	Path 686 N	Path 687 N	Path 688 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.0000	0.0000	0.0000 N	0.0000 N	0.0000 N	0.0000 N
Path Results	Path 689 CR	Path 690 CR	Path 691 WP	Path 692 N	Path 693 N	Path 694 CR	Path 695 CR	Path 696 WP
Heat Rate, Btu/hr	-2785.150	-7883.185	0.0000000	0.0000000	0.0000000	-2148.370	-6080.621	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.1565 Rn	0.4430 NC	1296 Ck	0.0000 N	0.0000 N	0.1565 Rn	0.4430 NC	3098 Ck
Path Results	Path 697 N	Path 698 N	Path 699 CR	Path 700 CR	Path 701 WP	Path 702 N	Path 703 N	Path 704 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	-655.0900	-2146.956	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1565 Rn	0.5129 NC	2409 Ck	0.0000 N	0.0000 N	0.0000



Path Results	Path 705 CR	Path 706 WP	Path 707 CR	Path 708 CR	Path 709 WP
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	3098.	0.0000	0.0000	3098.      Ck

(WLOOP(I),I=1,2): 0.00000000E+00 0.00000000E+00

Case 1 after step no. 642, time (XA) is 0.500000 hrs, 5 rejected CH steps, next time step is 9.924365E-04 hrs.

Node Results	Node 1 AI	Node 2 AI	Node 3 AI	Node 4 N	Node 5 N	Node 6 BI	Node 7 N	Node 8 N
Temperature, #F	102.2439	101.0393	99.23724	-459.6700	-459.6700	77.00000	-459.6700	-459.6700
Density, lbm/ft**3	7.1000002E-02	7.1000002E-02	7.1000002E-02	0.0000000	0.0000000	1.0000000	0.0000000	0.0000000
Node Results	Node 9 N	Node 10 N	Node 11 N	Node 12 BI	Node 13 BI	Node 14 N	Node 15 N	Node 16 N
Temperature, #F	-459.6700	-459.6700	-459.6700	105.1000	105.1000	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	1.0000000	1.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 17 BI	Node 18 BI	Node 19 N	Node 20 N	Node 21 N	Node 22 N	Node 23 N	Node 24 N
Temperature, #F	105.1000	105.1000	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	1.0000000	1.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 25 N	Node 26 N	Node 27 N	Node 28 N	Node 29 BI	Node 30 BI	Node 31 N	Node 32 N
Temperature, #F	-459.6700	-459.6700	-459.6700	-459.6700	105.1000	105.1000	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	1.0000000	1.0000000	0.0000000	0.0000000
Node Results	Node 33 N	Node 34 N	Node 35 N	Node 36 N	Node 37 N	Node 38 N	Node 39 N	Node 40 N
Temperature, #F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 41 N	Node 42 N	Node 43 N	Node 44 N	Node 45 N	Node 46 N	Node 47 N	Node 48 N
Temperature, #F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 49 AI	Node 50 AI	Node 51 AI	Node 52 AI	Node 53 N	Node 54 N	Node 55 BI	Node 56 WT
Temperature, #F	109.3990	109.3611	115.6438	115.6798	-459.6700	-459.6700	162.0000	80.61903
Density, lbm/ft**3	7.1000002E-02	7.1000002E-02	7.1000002E-02	7.1000002E-02	0.0000000	0.0000000	1.0000000	125.0000
Node Results	Node 57 WH	Node 58 WT	Node 59 WH	Node 60 WT	Node 61 WH	Node 62 WT	Node 63 WH	Node 64 WT
Temperature, #F	80.36925	80.62225	77.00278	80.62225	77.00278	79.42453	77.00000	80.62225
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	145.0000	145.0000	125.0000
Node Results	Node 65 WH	Node 66 WT	Node 67 WH	Node 68 WT	Node 69 WH	Node 70 WT	Node 71 WH	Node 72 WT
Temperature, #F	77.00278	80.62225	77.00278	80.61902	80.06845	80.62225	77.00278	80.62225
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 73 WH	Node 74 WT	Node 75 WH	Node 76 WT	Node 77 WH	Node 78 WT	Node 79 WH	Node 80 WT
Temperature, #F	77.00278	80.62225	77.00278	86.50770	98.97054	86.50770	98.97054	80.62225
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000

Node Results	Node 81 WH	Node 82 WT	Node 83 WH	Node 84 WT	Node 85 WH	Node 86 WT	Node 87 WH	Node 88 WT
Temperature, °F	77.00278	80.62225	77.00278	80.37236	77.00277	80.37236	77.00277	86.57706
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	145.0000
Node Results	Node 89 WH	Node 90 WT	Node 91 WH	Node 92 WT	Node 93 WH	Node 94 WT	Node 95 WH	Node 96 WT
Temperature, °F	97.68711	86.57706	97.68711	86.30999	89.94269	86.77041	85.55024	80.54192
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	100.0000	100.0000	100.0000
Node Results	Node 97 WH	Node 98 WT	Node 99 WH	Node 100 WT	Node 101 WH	Node 102 WT	Node 103 WH	Node 104 WT
Temperature, °F	78.22167	80.54192	78.22167	80.54192	78.22167	80.54192	78.22167	80.54192
Density, lbm/ft**3	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
Node Results	Node 105 WH	Node 106 WT	Node 107 WH	Node 108 WT	Node 109 WH	Node 110 WT	Node 111 WH	Node 112 WT
Temperature, °F	78.22167	80.07128	77.00251	80.07128	77.00251	80.22563	78.11200	86.48622
Density, lbm/ft**3	100.0000	125.0000	125.0000	125.0000	125.0000	100.0000	100.0000	100.0000
Node Results	Node 113 WH	Node 114 WT	Node 115 WH	Node 116 WT	Node 117 WH	Node 118 WT	Node 119 WH	Node 120 WT
Temperature, °F	85.45334	86.12777	89.94269	86.39580	97.68711	86.39580	97.68711	85.38731
Density, lbm/ft**3	100.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	125.0000
Node Results	Node 121 WH	Node 122 WT	Node 123 WH	Node 124 WT	Node 125 WH	Node 126 WT	Node 127 WH	Node 128 WT
Temperature, °F	85.29397	80.07128	77.00251	80.07128	77.00251	80.62225	77.00278	80.62225
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 129 WH	Node 130 WT	Node 131 WH	Node 132 WT	Node 133 WH	Node 134 WT	Node 135 WH	Node 136 WT
Temperature, °F	77.00278	80.62225	77.00278	80.62225	77.00278	80.62225	77.00278	80.62225
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 137 WH	Node 138 WT	Node 139 WH	Node 140 WT	Node 141 WH	Node 142 WT	Node 143 WH	Node 144 WT
Temperature, °F	77.00278	80.62225	77.00278	80.37236	77.00277	80.54192	78.22167	80.54192
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	100.0000	100.0000	100.0000
Node Results	Node 145 WH	Node 146 WT	Node 147 WH	Node 148 WT	Node 149 WH	Node 150 WT	Node 151 WH	Node 152 WT
Temperature, °F	78.22167	80.54192	78.22167	80.54192	78.22167	80.07128	77.00251	80.07128
Density, lbm/ft**3	100.0000	100.0000	100.0000	100.0000	100.0000	125.0000	125.0000	125.0000
Node Results	Node 153 WH	Node 154 WT	Node 155 WH	Node 156 WT	Node 157 WH	Node 158 WT	Node 159 WH	Node 160 WT
Temperature, °F	77.00251	80.22563	78.11200	80.07128	77.00251	86.39736	86.39588	85.58967
Density, lbm/ft**3	125.0000	100.0000	100.0000	125.0000	125.0000	490.0000	490.0000	490.0000
Node Results	Node 161 WH	Node 162 N	Node 163 N	Node 164 N	Node 165 N	Node 166 N	Node 167 N	Node 168 N
Temperature, °F	85.58832	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Node Results	Node 169 N	Node 170 N	Node 171 N	Node 172 N	Node 173 N	Node 174 N	Node 175 N	Node 176 WT
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	85.42029
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	145.0000
Node Results	Node 177 WH	Node 178 WT	Node 179 WH	Node 180 WT	Node 181 WH	Node 182 WT	Node 183 WH	Node 184 WT
Temperature, eF	84.42013	85.42024	84.41924	90.08015	91.35666	90.08015	91.35666	85.25935
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 185 WH	Node 186 WT	Node 187 WH	Node 188 WT	Node 189 WH	Node 190 WT	Node 191 WH	Node 192 N
Temperature, eF	84.57698	90.04791	91.35688	85.05334	84.56310	90.00192	91.35632	-459.6700
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	0.0000000
Node Results	Node 193 N	Node 194 N	Node 195 N	Node 196 N	Node 197 N	Node 198 N	Node 199 N	Node 200 N
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 201 AI	Node 202 N	Node 203 AI	Node 204 AI	Node 205 N	Node 206 N	Node 207 AI	Node 208 N
Temperature, eF	91.42452	-459.6700	90.48534	91.42452	-459.6700	-459.6700	91.38830	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	490.0000	490.0000	0.0000000	0.0000000	490.0000	0.0000000
Node Results	Node 209 N	Node 210 AI	Node 211 N	Node 212 AI	Node 213 AI	Node 214 N	Node 215 N	Node 216 AI
Temperature, eF	-459.6700	91.42452	-459.6700	89.36559	91.40276	-459.6700	-459.6700	91.42526
Density, lbm/ft**3	0.0000000	490.0000	0.0000000	490.0000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 217 N	Node 218 N	Node 219 AI	Node 220 N	Node 221 N	Node 222 AI	Node 223 N	Node 224 N
Temperature, eF	-459.6700	-459.6700	91.41665	-459.6700	-459.6700	91.41665	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 225 AI	Node 226 N	Node 227 N	Node 228 AI	Node 229 N	Node 230 N	Node 231 AI	Node 232 N
Temperature, eF	91.40276	-459.6700	-459.6700	90.48604	-459.6700	-459.6700	91.78486	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000
Node Results	Node 233 N	Node 234 AI	Node 235 N	Node 236 N	Node 237 AI	Node 238 N	Node 239 N	Node 240 AI
Temperature, eF	-459.6700	90.47795	-459.6700	-459.6700	89.36559	-459.6700	-459.6700	89.36665
Density, lbm/ft**3	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 241 N	Node 242 N	Node 243 AI	Node 244 N	Node 245 N	Node 246 AI	Node 247 N	Node 248 N
Temperature, eF	-459.6700	-459.6700	90.72911	-459.6700	-459.6700	89.38353	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 249 N	Node 250 N	Node 251 AI	Node 252 WT	Node 253 WH	Node 254 WT	Node 255 WH	Node 256 WT
Temperature, eF	-459.6700	-459.6700	109.6698	99.10811	99.10637	98.96286	98.96088	101.1579
Density, lbm/ft**3	0.0000000	0.0000000	7.1000002E-02	490.0000	490.0000	490.0000	490.0000	490.0000

Node Results	Node 257 WH	Node 258 WT	Node 259 WH	Node 260 WT	Node 261 WH	Node 262 N	Node 263 N	Node 264 AI
Temperature, eF	101.1564	97.36400	97.36014	97.70078	97.69755	-459.6700	-459.6700	107.9236
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	0.0000000	0.0000000	7.1000002E-02
Node Results	Node 265 WT	Node 266 WH	Node 267 WT	Node 268 WH	Node 269 WT	Node 270 WH	Node 271 WT	Node 272 WH
Temperature, eF	97.96865	97.96699	97.93324	97.93140	100.3023	100.3010	97.06145	97.05805
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 273 WT	Node 274 WH	Node 275 N	Node 276 N	Node 277 AI	Node 278 WT	Node 279 WH	Node 280 WT
Temperature, eF	97.35539	97.35254	-459.6700	-459.6700	112.1451	95.87499	95.86981	101.4580
Density, lbm/ft**3	490.0000	490.0000	0.0000000	0.0000000	7.1000002E-02	490.0000	490.0000	490.0000
Node Results	Node 281 WH	Node 282 WT	Node 283 WH	Node 284 WT	Node 285 WH	Node 286 WT	Node 287 WH	Node 288 WT
Temperature, eF	101.4564	101.4580	101.4564	100.5705	100.5685	99.52683	99.52414	100.3903
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 289 WH	Node 290 N	Node 291 WT	Node 292 WH	Node 293 WT	Node 294 WH	Node 295 WT	Node 296 WH
Temperature, eF	100.3881	-459.6700	91.67377	91.67140	93.52268	93.52189	90.82412	90.82372
Density, lbm/ft**3	490.0000	0.0000000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 297 WT	Node 298 WH	Node 299 N	Node 300 N	Node 301 WT	Node 302 WH	Node 303 WT	Node 304 WH
Temperature, eF	98.19170	98.18793	-459.6700	-459.6700	92.43671	90.01689	96.49631	100.8629
Density, lbm/ft**3	490.0000	490.0000	0.0000000	0.0000000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 305 WT	Node 306 WH	Node 307 WT	Node 308 WH	Node 309 WT	Node 310 WH	Node 311 WT	Node 312 WH
Temperature, eF	96.49631	100.8629	96.21900	96.71411	97.69727	96.57746	92.43671	90.01689
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 313 WT	Node 314 WH	Node 315 WT	Node 316 WH	Node 317 WT	Node 318 WH	Node 319 WT	Node 320 WH
Temperature, eF	92.43671	91.71598	91.71598	90.01154	95.29925	100.3044	91.71598	91.71220
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 321 WT	Node 322 WH	Node 323 WT	Node 324 WH	Node 325 WT	Node 326 WH	Node 327 WT	Node 328 WH
Temperature, eF	95.89659	101.5827	86.86076	83.96874	91.71598	90.01154	95.29568	100.3044
Density, lbm/ft**3	125.0000	125.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 329 WT	Node 330 WH	Node 331 WT	Node 332 WH	Node 333 WT	Node 334 WH	Node 335 WT	Node 336 WH
Temperature, eF	91.71220	90.01152	91.71220	92.44798	91.71220	90.01152	86.85673	83.96872
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 337 WT	Node 338 WH	Node 339 WT	Node 340 WH	Node 341 WT	Node 342 WH	Node 343 WT	Node 344 WH
Temperature, eF	95.89122	101.5827	92.44798	90.01715	97.70762	96.57769	96.22962	96.71411
Density, lbm/ft**3	125.0000	125.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000

Node Results	Node 345 WT	Node 346 WH	Node 347 WT	Node 348 WH	Node 349 WT	Node 350 WH	Node 351 WT	Node 352 WH
Temperature, °F	96.50688	100.8829	96.50688	100.8829	93.95269	90.60103	93.88459	91.82199
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	125.0000	125.0000	145.0000	145.0000
Node Results	Node 353 WT	Node 354 WH	Node 355 WT	Node 356 WH	Node 357 WT	Node 358 WH	Node 359 WT	Node 360 WH
Temperature, °F	139.7258	158.9535	139.5598	158.9535	105.1538	108.0787	105.8538	108.0787
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 361 WT	Node 362 WH	Node 363 WT	Node 364 WH	Node 365 WT	Node 366 WH	Node 367 WT	Node 368 WH
Temperature, °F	139.5589	158.9535	105.8512	108.0787	105.8512	108.0787	139.7285	158.9535
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 369 AI	Node 370 N	Node 371 N	Node 372 AI	Node 373 N	Node 374 N	Node 375 AI	Node 376 AI
Temperature, °F	104.2904	-459.6700	-459.6700	100.3104	-459.6700	-459.6700	100.3095	100.2378
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	7.1000002E-02
Node Results	Node 377 AI	Node 378 AI	Node 379 AI	Node 380 AI	Node 381 AI	Node 382 N	Node 383 N	Node 384 AI
Temperature, °F	100.2912	100.2753	100.2034	100.2571	100.3279	-459.6700	-459.6700	100.2865
Density, lbm/ft**3	490.0000	490.0000	7.1000002E-02	490.0000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 385 N	Node 386 N	Node 387 AI	Node 388 N	Node 389 N	Node 390 AI	Node 391 N	Node 392 N
Temperature, °F	-459.6700	-459.6700	100.3072	-459.6700	-459.6700	104.3624	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 393 N	Node 394 N	Node 395 N	Node 396 N	Node 397 N	Node 398 N	Node 399 N	Node 400 N
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 401 N	Node 402 N	Node 403 BI	Node 404 BI	Node 405 BI			
Temperature, °F	-459.6700	-459.6700	122.0000	122.0000	104.0000			
Density, lbm/ft**3	0.0000000	0.0000000	1.000000	1.000000	1.000000			



Path Results	Path 1 CR	Path 2 CR	Path 3 WP	Path 4 CR	Path 5 CR	Path 6 CR	Path 7 CR	Path 8 WP
Heat Rate, Btu/hr	914.9622	2932.291	2778.821	-2761.355	-871.0953	522.8238	1675.423	1599.128
HTC, Btu/ft <sup>2</sup> h <sup>0.5</sup>	0.1635	Rn 0.5239	NC	4.955	Ck 0.5162	NC	0.1628	Rn 0.1635
Path Results	Path 9 N	Path 10 N	Path 11 CR	Path 12 CR	Path 13 WP	Path 14 N	Path 15 N	Path 16 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	151.2972	464.8412	451.2178	0.0000000	0.0000000	5175.106
HTC, Btu/ft <sup>2</sup> h <sup>0.5</sup>	0.0000	N	0.0000	N	0.1635	Rn 0.5239	NC	5.000
Path Results	Path 17 CR	Path 18 WP	Path 19 CR	Path 20 CR	Path 21 CR	Path 22 CR	Path 23 WP	Path 24 N
Heat Rate, Btu/hr	16936.06	17617.10	0.0000000	0.0000000	424.1978	1359.370	1293.134	0.0000000
HTC, Btu/ft <sup>2</sup> h <sup>0.5</sup>	0.5333	NC	11.04	Ck 0.0000	0.0000	0.1635	Rn 0.5239	NC
Path Results	Path 25 N	Path 26 CR	Path 27 CR	Path 28 WP	Path 29 N	Path 30 N	Path 31 CR	Path 32 CR
Heat Rate, Btu/hr	0.0000000	443.9937	1422.807	1353.480	0.0000000	0.0000000	912.8610	2925.493
HTC, Btu/ft <sup>2</sup> h <sup>0.5</sup>	0.0000	N	0.1635	Rn 0.5239	NC	5.000	Ck 0.0000	N
Path Results	Path 33 WP	Path 34 CR	Path 35 CR	Path 36 CR	Path 37 CR	Path 38 WP	Path 39 N	Path 40 N
Heat Rate, Btu/hr	2772.379	-2492.073	-801.3058	175.6886	563.0057	535.5730	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> h <sup>0.5</sup>	4.955	Ck 0.5035	NC	0.1619	Rn 0.1635	Rn 0.5239	NC	5.000
Path Results	Path 41 CR	Path 42 CR	Path 43 WP	Path 44 N	Path 45 N	Path 46 CR	Path 47 CR	Path 48 WP
Heat Rate, Btu/hr	161.5487	517.6934	492.4686	0.0000000	0.0000000	907.7833	2909.052	2767.307
HTC, Btu/ft <sup>2</sup> h <sup>0.5</sup>	0.1635	Rn 0.5239	NC	5.000	Ck 0.0000	N	0.0000	N
Path Results	Path 49 N	Path 50 N	Path 51 CR	Path 52 CR	Path 53 WP	Path 54 CR	Path 55 CR	Path 56 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	300.5767	853.7472	718.6526	-243.6257	-121.9806	343.9643
HTC, Btu/ft <sup>2</sup> h <sup>0.5</sup>	0.0000	N	0.0000	N	0.1661	Rn 0.4718	NC	4.876
Path Results	Path 57 CR	Path 58 WP	Path 59 CR	Path 60 CR	Path 61 CR	Path 62 CR	Path 63 WP	Path 64 N
Heat Rate, Btu/hr	976.9838	822.3885	-278.7925	-139.5883	886.5735	2841.083	2702.650	0.0000000
HTC, Btu/ft <sup>2</sup> h <sup>0.5</sup>	0.4718	NC	4.876	Ck 0.3456	NC	0.1730	Rn 0.1635	Rn 0.5239
Path Results	Path 65 N	Path 66 CR	Path 67 CR	Path 68 WP	Path 69 N	Path 70 N	Path 71 CR	Path 72 CR
Heat Rate, Btu/hr	0.0000000	369.4056	1183.785	1126.104	0.0000000	0.0000000	506.1597	1604.423
HTC, Btu/ft <sup>2</sup> h <sup>0.5</sup>	0.0000	N	0.1635	Rn 0.5239	NC	5.000	Ck 0.0000	N
Path Results	Path 73 WP	Path 74 N	Path 75 N	Path 76 CR	Path 77 CR	Path 78 WP	Path 79 N	Path 80 N
Heat Rate, Btu/hr	1507.798	0.0000000	0.0000000	322.7441	1023.033	961.4217	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> h <sup>0.5</sup>	5.000	Ck 0.0000	N	0.0000	N	0.1628	Rn 0.5162	NC
Path Results	Path 81 CR	Path 82 CR	Path 83 WP	Path 84 CR	Path 85 CR	Path 86 CR	Path 87 CR	Path 88 WP
Heat Rate, Btu/hr	582.8600	1615.057	1517.668	-663.9842	-311.1685	754.3176	2090.152	1966.115
HTC, Btu/ft <sup>2</sup> h <sup>0.5</sup>	0.1656	Rn 0.4588	NC	11.04	Ck 0.3680	NC	0.1725	Rn 0.1656

Path Results	Path 89 CR	Path 90 CR	Path 91 CR	Path 92 CR	Path 93 WP	Path 94 N	Path 95 N	Path 96 CR
Heat Rate, Btu/hr	-859.3058	-402.7037	219.3418	611.8978	578.9988	0.0000000	0.0000000	1208.175
HTC, Btu/ft <sup>2</sup> hr°F	0.3680	NC	0.1725	Rn 0.1655	Rn 0.4616	NC	11.04	Ck 0.0000
Path Results	Path 97 CR	Path 98 WP	Path 99 N	Path 100 N	Path 101 CR	Path 102 CR	Path 103 WP	Path 104 N
Heat Rate, Btu/hr	3331.185	1446.822	0.0000000	0.0000000	165.2971	522.2974	266.4579	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4568	NC	2.320	Ck 0.0000	N 0.0000	N 0.1629	Rn 0.5148	NC
Path Results	Path 105 N	Path 106 CR	Path 107 CR	Path 108 WP	Path 109 N	Path 110 N	Path 111 CR	Path 112 CR
Heat Rate, Btu/hr	0.0000000	279.1684	882.1022	450.0178	0.0000000	0.0000000	75.46898	238.4630
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1629	Rn 0.5148	NC	2.320	Ck 0.0000	N 0.0000	N 0.1629
Path Results	Path 113 WP	Path 114 N	Path 115 N	Path 116 CR	Path 117 CR	Path 118 WP	Path 119 N	Path 120 N
Heat Rate, Btu/hr	121.6555	0.0000000	0.0000000	508.2468	1605.913	819.2907	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	2.320	Ck 0.0000	N 0.0000	N 0.1629	Rn 0.5148	NC	2.320	Ck 0.0000
Path Results	Path 121 CR	Path 122 CR	Path 123 WP	Path 124 N	Path 125 N	Path 126 CR	Path 127 CR	Path 128 WP
Heat Rate, Btu/hr	79.81011	252.1799	128.6534	0.0000000	0.0000000	88.43538	275.0198	260.1709
HTC, Btu/ft <sup>2</sup> hr°F	0.1629	Rn 0.5148	NC	2.320	Ck 0.0000	N 0.0000	N 0.1619	Rn 0.5035
Path Results	Path 129 N	Path 130 N	Path 131 CR	Path 132 CR	Path 133 WP	Path 134 N	Path 135 N	Path 136 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	492.7557	1532.391	1449.654	0.0000000	0.0000000	369.2068
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1619	Rn 0.5035	NC	5.000	Ck 0.0000	N 0.0000
Path Results	Path 137 CR	Path 138 WP	Path 139 N	Path 140 N	Path 141 CR	Path 142 CR	Path 143 WP	Path 144 N
Heat Rate, Btu/hr	1144.637	587.9448	0.0000000	0.0000000	1074.156	2870.046	1225.463	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5021	NC	2.320	Ck 0.0000	N 0.0000	N 0.1647	Rn 0.4401	NC
Path Results	Path 145 N	Path 146 CR	Path 147 CR	Path 148 WP	Path 149 N	Path 150 N	Path 151 CR	Path 152 CR
Heat Rate, Btu/hr	0.0000000	194.1645	524.0637	491.5342	0.0000000	0.0000000	666.1626	1784.516
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1646	Rn 0.4442	NC	11.04	Ck 0.0000	N 0.0000	N 0.1647
Path Results	Path 153 WP	Path 154 CR	Path 155 CR	Path 156 CR	Path 157 CR	Path 158 WP	Path 159 CR	Path 160 CR
Heat Rate, Btu/hr	1660.739	-859.3058	-402.7037	197.9454	530.2561	493.4767	-255.3366	-119.6605
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.3680	NC	0.1725	Rn 0.1647	Rn 0.4412	NC	11.04
Path Results	Path 161 CR	Path 162 CR	Path 163 WP	Path 164 N	Path 165 N	Path 166 CR	Path 167 CR	Path 168 WP
Heat Rate, Btu/hr	526.3646	1449.579	1220.578	0.0000000	0.0000000	71.36890	221.9458	209.9625
HTC, Btu/ft <sup>2</sup> hr°F	0.1642	Rn 0.4523	NC	5.000	Ck 0.0000	N 0.0000	N 0.1619	Rn 0.5035
Path Results	Path 169 N	Path 170 N	Path 171 CR	Path 172 CR	Path 173 WP	Path 174 N	Path 175 N	Path 176 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	429.1443	1334.570	1262.514	0.0000000	0.0000000	174.2746
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1619	Rn 0.5035	NC	5.000	Ck 0.0000	N 0.0000

Path Results	Path 177 CR	Path 178 WP	Path 179 N	Path 180 N	Path 181 CR	Path 182 CR	Path 183 WP	Path 184 N
Heat Rate, Btu/hr	558.4745	531.2626	0.0000000	0.0000000	148.1157	474.6467	451.5193	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5239 NC	5.000 Ck	0.0000 N	0.0000 N	0.1635 Rn	0.5239 NC	5.000 Ck	0.0000 N
Path Results	Path 185 N	Path 186 CR	Path 187 CR	Path 188 WP	Path 189 N	Path 190 N	Path 191 CR	Path 192 CR
Heat Rate, Btu/hr	0.0000000	103.5750	331.9128	315.7402	0.0000000	0.0000000	119.4824	382.8892
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1635 Rn	0.5239 NC	5.000 Ck	0.0000 N	0.0000 N	0.1635 Rn	0.5239 NC
Path Results	Path 193 WP	Path 194 N	Path 195 N	Path 196 CR	Path 197 CR	Path 198 WP	Path 199 N	Path 200 N
Heat Rate, Btu/hr	364.2328	0.0000000	0.0000000	362.6891	1162.261	1105.630	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000 Ck	0.0000 N	0.0000 N	0.1635 Rn	0.5239 NC	5.000 Ck	0.0000 N	0.0000 N
Path Results	Path 201 CR	Path 202 CR	Path 203 WP	Path 204 N	Path 205 N	Path 206 CR	Path 207 CR	Path 208 WP
Heat Rate, Btu/hr	355.6192	1139.605	1084.077	0.0000000	0.0000000	148.6692	475.7795	452.5969
HTC, Btu/ft <sup>2</sup> hr°F	0.1635 Rn	0.5239 NC	5.000 Ck	0.0000 N	0.0000 N	0.1635 Rn	0.5239 NC	5.000 Ck
Path Results	Path 209 N	Path 210 N	Path 211 CR	Path 212 CR	Path 213 WP	Path 214 N	Path 215 N	Path 216 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	168.6077	534.4522	502.2651	0.0000000	0.0000000	88.15845
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1628 Rn	0.5162 NC	5.000 Ck	0.0000 N	0.0000 N	0.1629 Rn
Path Results	Path 217 CR	Path 218 WP	Path 219 N	Path 220 N	Path 221 CR	Path 222 CR	Path 223 WP	Path 224 N
Heat Rate, Btu/hr	278.5586	142.1109	0.0000000	0.0000000	148.2665	468.4849	239.0047	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5148 NC	2.320 Ck	0.0000 N	0.0000 N	0.1629 Rn	0.5148 NC	2.320 Ck	0.0000 N
Path Results	Path 225 N	Path 226 CR	Path 227 CR	Path 228 WP	Path 229 N	Path 230 N	Path 231 CR	Path 232 CR
Heat Rate, Btu/hr	0.0000000	307.2189	970.7345	495.2349	0.0000000	0.0000000	83.48339	263.7866
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1629 Rn	0.5148 NC	2.320 Ck	0.0000 N	0.0000 N	0.1629 Rn	0.5148 NC
Path Results	Path 233 WP	Path 234 N	Path 235 N	Path 236 CR	Path 237 CR	Path 238 WP	Path 239 N	Path 240 N
Heat Rate, Btu/hr	134.5747	0.0000000	0.0000000	79.12639	246.0704	232.7845	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	2.320 Ck	0.0000 N	0.0000 N	0.1619 Rn	0.5035 NC	5.000 Ck	0.0000 N	0.0000 N
Path Results	Path 241 CR	Path 242 CR	Path 243 WP	Path 244 N	Path 245 N	Path 246 CR	Path 247 CR	Path 248 WP
Heat Rate, Btu/hr	287.9580	895.5031	847.1531	0.0000000	0.0000000	231.5625	717.9042	368.7527
HTC, Btu/ft <sup>2</sup> hr°F	0.1619 Rn	0.5035 NC	5.000 Ck	0.0000 N	0.0000 N	0.1620 Rn	0.5021 NC	2.320 Ck
Path Results	Path 249 N	Path 250 N	Path 251 CR	Path 252 CR	Path 253 WP	Path 254 N	Path 255 N	Path 256 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	176.5605	549.0746	519.4290	0.0000000	0.0000000	7325.721
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1619 Rn	0.5035 NC	5.000 Ck	0.0000 N	0.0000 N	0.1656 Rn
Path Results	Path 257 CR	Path 258 WP	Path 259 CR	Path 260 CR	Path 261 CR	Path 262 CR	Path 263 WP	Path 264 CR
Heat Rate, Btu/hr	24702.24	24117.06	-65.67703	-11062.32	7293.422	24593.35	24011.59	-65.29025
HTC, Btu/ft <sup>2</sup> hr°F	0.5584 NC	11.05 Ck	1.0000E-03 XT	0.1684 Rn	0.1656 Rn	0.5584 NC	11.05 Ck	1.0000E-03 XT

Path Results	Path 265 CR	Path 266 CR	Path 267 CR	Path 268 WP	Path 269 N	Path 270 N	Path 271 CR	Path 272 CR
Heat Rate, Btu/hr	-10996.00	1191.843	7.107292	238.9527	0.0000000	0.0000000	1186.540	7.075666
HTC, Btu/ft <sup>2</sup> hr°F	0.1684	Rn 0.1677	Rn 1.0000E-03 XT	11.04	Ch 0.0000	N 0.0000	N 0.1677	Rn 1.0000E-03 XT
Path Results	Path 273 WP	Path 274 N	Path 275 N	Path 276 CR	Path 277 CR	Path 278 WP	Path 279 CR	Path 280 CR
Heat Rate, Btu/hr	277.8894	0.0000000	0.0000000	5767.001	19110.73	18202.75	-68.81293	-11794.77
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ch 0.0000	N 0.0000	N 0.1650	Rn 0.5698	NC 11.05	Ch 1.0000E-03 XT	0.1714 Rn
Path Results	Path 281 CR	Path 282 CR	Path 283 WP	Path 284 N	Path 285 N	Path 286 CR	Path 287 CR	Path 288 WP
Heat Rate, Btu/hr	3164.776	18.93599	388.8225	0.0000000	0.0000000	4961.196	15959.40	15183.34
HTC, Btu/ft <sup>2</sup> hr°F	0.1671	Rn 1.0000E-03 XT	11.04	Ch 0.0000	N 0.0000	N 0.1641	Rn 0.5279	NC 11.05 Ch
Path Results	Path 289 CR	Path 290 CR	Path 291 CR	Path 292 CR	Path 293 WP	Path 294 N	Path 295 N	Path 296 CR
Heat Rate, Btu/hr	-66.32827	-11369.60	2518.192	15.14315	-16.56392	0.0000000	0.0000000	87.40242
HTC, Btu/ft <sup>2</sup> hr°F	1.0000E-03 XT	0.1714	Rn 0.1663	Rn 1.0000E-03 XT	11.04	Ch 0.0000	N 0.0000	N 0.1683 Rn
Path Results	Path 297 CR	Path 298 N	Path 299 N	Path 300 CR	Path 301 CR	Path 302 CR	Path 303 CR	Path 304 N
Heat Rate, Btu/hr	216.5138	0.0000000	0.0000000	-84.76604	-209.4777	87.40242	216.5138	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4169	NC 0.0000	N 0.0000	N 0.1673	Rn 0.4135	NC 0.1683	Rn 0.4169	NC 0.0000 N
Path Results	Path 305 N	Path 306 N	Path 307 N	Path 308 CR	Path 309 CR	Path 310 N	Path 311 N	Path 312 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	45.12201	111.9107	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1683	Rn 0.4174	NC 0.0000	N 0.0000	N 0.0000 N
Path Results	Path 313 N	Path 314 CR	Path 315 CR	Path 316 N	Path 317 N	Path 318 CR	Path 319 CR	Path 320 CR
Heat Rate, Btu/hr	0.0000000	87.40242	216.5138	0.0000000	0.0000000	-78.66104	-191.6607	39.22544
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1683	Rn 0.4169	NC 0.0000	N 0.0000	N 0.1660	Rn 0.4045	NC 0.1683 Rn
Path Results	Path 321 CR	Path 322 N	Path 323 N	Path 324 N	Path 325 N	Path 326 CR	Path 327 CR	Path 328 N
Heat Rate, Btu/hr	97.23958	0.0000000	0.0000000	0.0000000	0.0000000	32.59163	80.73418	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4172	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1683	Rn 0.4169	NC 0.0000 N
Path Results	Path 329 N	Path 330 N	Path 331 N	Path 332 CR	Path 333 CR	Path 334 N	Path 335 N	Path 336 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	92.93064	230.2684	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1683	Rn 0.4170	NC 0.0000	N 0.0000	N 0.0000 N
Path Results	Path 337 N	Path 338 CR	Path 339 CR	Path 340 N	Path 341 N	Path 342 N	Path 343 N	Path 344 CR
Heat Rate, Btu/hr	0.0000000	92.93064	230.2684	0.0000000	0.0000000	0.0000000	0.0000000	39.22544
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1683	Rn 0.4170	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1683 Rn
Path Results	Path 345 CR	Path 346 N	Path 347 N	Path 348 N	Path 349 N	Path 350 CR	Path 351 CR	Path 352 N
Heat Rate, Btu/hr	97.23958	0.0000000	0.0000000	0.0000000	0.0000000	31.60863	78.11082	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4172	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1673	Rn 0.4135	NC 0.0000 N

Path Results	Path 353 N	Path 354 N	Path 355 N	Path 356 CR	Path 357 CR	Path 358 N	Path 359 N	Path 360 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	31.54463	74.38675	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1679	Rn 0.3960	NC 0.0000	N 0.0000	N 0.0000
Path Results	Path 361 N	Path 362 CR	Path 363 CR	Path 364 N	Path 365 N	Path 366 N	Path 367 N	Path 368 CR
Heat Rate, Btu/hr	0.0000000	90.12515	222.7772	0.0000000	0.0000000	0.0000000	0.0000000	78.66104
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1673	Rn 0.4136	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1660
Path Results	Path 369 CR	Path 370 N	Path 371 N	Path 372 N	Path 373 N	Path 374 CR	Path 375 CR	Path 376 N
Heat Rate, Btu/hr	191.6607	0.0000000	0.0000000	0.0000000	0.0000000	35.29937	86.06709	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4045	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1660	Rn 0.4047	NC 0.0000
Path Results	Path 377 N	Path 378 N	Path 379 N	Path 380 CR	Path 381 CR	Path 382 N	Path 383 N	Path 384 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	28.35215	65.53337	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1666	Rn 0.3851	NC 0.0000	N 0.0000	N 0.0000
Path Results	Path 385 N	Path 386 CR	Path 387 CR	Path 388 N	Path 389 N	Path 390 N	Path 391 N	Path 392 CR
Heat Rate, Btu/hr	0.0000000	34.02514	82.85226	0.0000000	0.0000000	0.0000000	0.0000000	22239.72
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1660	Rn 0.4042	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.5534
Path Results	Path 393 CR	Path 394 WP	Path 395 CR	Path 396 CR	Path 397 CR	Path 398 CR	Path 399 WP	Path 400 CR
Heat Rate, Btu/hr	16621.63	17932.72	-1736.907	-1259.420	3589.326	3121.408	3247.427	-1.259529
HTC, Btu/ft <sup>2</sup> hr°F	0.4136	NC 2709.	Ck 0.2362	NC 0.1712	Rn 0.5532	Rn 0.4811	NC 2709.	Ck 1.0000E-03
Path Results	Path 401 CR	Path 402 CR	Path 403 CR	Path 404 CR	Path 405 WP	Path 406 CR	Path 407 WP	Path 408 CR
Heat Rate, Btu/hr	-215.5947	33645.76	8382.884	5803.136	7093.083	5194.280	2596.674	29215.17
HTC, Btu/ft <sup>2</sup> hr°F	0.1712	Rn 58.19	NC 0.5564	Rn 0.3852	NC 2709.	Ck 0.7000	XT 1116.	Ck 0.7000
Path Results	Path 409 WP	Path 410 N	Path 411 N	Path 412 CR	Path 413 CR	Path 414 WP	Path 415 CR	Path 416 CR
Heat Rate, Btu/hr	14605.82	0.0000000	0.0000000	20664.90	15263.01	17062.68	-987.2305	-815.7405
HTC, Btu/ft <sup>2</sup> hr°F	1296.	Ck 0.0000	N 0.0000	N 0.5492	Rn 0.4056	NC 2709.	Ck 0.2056	NC 0.1699
Path Results	Path 417 CR	Path 418 CR	Path 419 WP	Path 420 CR	Path 421 CR	Path 422 CR	Path 423 CR	Path 424 CR
Heat Rate, Btu/hr	3159.842	2705.769	2868.966	-0.7521601	-127.7731	27737.64	5895.837	3962.634
HTC, Btu/ft <sup>2</sup> hr°F	0.5491	Rn 0.4702	NC 2709.	Ck 1.0000E-03	XT 0.1699	Rn 49.89	NC 0.5526	Rn 0.3714
Path Results	Path 425 WP	Path 426 CR	Path 427 WP	Path 428 CR	Path 429 WP	Path 430 N	Path 431 N	Path 432 CR
Heat Rate, Btu/hr	4929.236	4356.827	2178.004	24849.15	12422.98	0.0000000	0.0000000	11269.57
HTC, Btu/ft <sup>2</sup> hr°F	2709.	Ck 0.7000	XT 1116.	Ck 0.7000	XT 1296.	Ck 0.0000	N 0.0000	N 0.5524
Path Results	Path 433 CR	Path 434 WP	Path 435 CR	Path 436 CR	Path 437 CR	Path 438 CR	Path 439 WP	Path 440 CR
Heat Rate, Btu/hr	9731.997	8420.682	-2798.528	-1361.327	9339.203	6918.064	7914.820	-215.5984
HTC, Btu/ft <sup>2</sup> hr°F	0.4770	NC 1296.	Ck 0.3501	NC 0.1703	Rn 0.5605	Rn 0.4152	NC 3098.	Ck 0.1756



Path Results	Path 441 CR	Path 442 CR	Path 443 CR	Path 444 WP	Path 445 CR	Path 446 CR	Path 447 CR	Path 448 CR
Heat Rate, Btu/hr	-212.2510	814.7092	603.5002	690.4526	-18.80782	-18.51581	2401.434	1830.600
MTC, Btu/ft <sup>2</sup> hr	0.1729	Rn 0.5605	Rn 0.4152	NC 3098	Ch 0.1756	NC 0.1729	Rn 0.5592	Rn 0.4263
Path Results	Path 449 WP	Path 450 CR	Path 451 CR	Path 452 CR	Path 453 CR	Path 454 WP	Path 455 CR	Path 456 CR
Heat Rate, Btu/hr	1992.050	-140.0275	-107.2006	4665.629	4248.816	4301.442	-1.803217	-310.1240
MTC, Btu/ft <sup>2</sup> hr	2709	Ch 0.2253	NC 0.1725	Rn 0.5577	Rn 0.5079	NC 2409	Ch 1.0000E-03	XT 0.1720
Path Results	Path 457 CR	Path 458 CR	Path 459 WP	Path 460 CR	Path 461 CR	Path 462 CR	Path 463 CR	Path 464 WP
Heat Rate, Btu/hr	219.4554	194.7861	201.7234	-6.198576E-02	-10.68517	35771.61	23685.97	11842.01
MTC, Btu/ft <sup>2</sup> hr	0.5590	Rn 0.4961	NC 2709	Ch 1.0000E-03	XT 0.1724	Rn 255.5	NC 0.7000	XT 1126
Path Results	Path 465 N	Path 466 N	Path 467 N	Path 468 N	Path 469 N	Path 470 N	Path 471 CR	Path 472 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	1225.934	3757.434
MTC, Btu/ft <sup>2</sup> hr	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1750	Rn 0.5363
Path Results	Path 473 WP	Path 474 N	Path 475 N	Path 476 CR	Path 477 CR	Path 478 WP	Path 479 CR	Path 480 CR
Heat Rate, Btu/hr	3967.291	0.0000000	0.0000000	807.9583	2299.492	2367.583	-307.3962	-175.0123
MTC, Btu/ft <sup>2</sup> hr	11.04	Ch 0.0000	N 0.0000	N 0.1769	Rn 0.5033	NC 11.04	Ch 0.3055	NC 0.1739
Path Results	Path 481 CR	Path 482 CR	Path 483 WP	Path 484 CR	Path 485 CR	Path 486 CR	Path 487 CR	Path 488 WP
Heat Rate, Btu/hr	1022.308	2909.541	2995.696	-388.9476	-221.4426	296.2500	847.7692	875.2522
MTC, Btu/ft <sup>2</sup> hr	0.1769	Rn 0.5033	NC 11.04	Ch 0.3055	NC 0.1739	Rn 0.1767	Rn 0.5057	NC 11.04
Path Results	Path 489 N	Path 490 N	Path 491 CR	Path 492 CR	Path 493 WP	Path 494 N	Path 495 N	Path 496 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1620.265	4499.651	4589.853	0.0000000	0.0000000	2141.629
MTC, Btu/ft <sup>2</sup> hr	0.0000	N 0.0000	N 0.1774	Rn 0.4927	NC 11.04	Ch 0.0000	N 0.0000	N 0.1750
Path Results	Path 497 CR	Path 498 WP	Path 499 N	Path 500 N	Path 501 CR	Path 502 CR	Path 503 WP	Path 504 CR
Heat Rate, Btu/hr	6563.998	6930.605	0.0000000	0.0000000	1191.012	2650.399	3854.282	-2542.825
MTC, Btu/ft <sup>2</sup> hr	0.5363	NC 11.04	Ch 0.0000	N 0.0000	N 0.1750	Rn 0.5363	NC 11.04	Ch 0.4903
Path Results	Path 505 CR	Path 506 CR	Path 507 CR	Path 508 WP	Path 509 N	Path 510 N	Path 511 CR	Path 512 CR
Heat Rate, Btu/hr	-890.6412	764.0142	2181.299	2339.997	0.0000000	0.0000000	1644.570	4316.106
MTC, Btu/ft <sup>2</sup> hr	0.1717	Rn 0.1717	Rn 0.4903	NC 11.04	Ch 0.0000	N 0.0000	N 0.1734	Rn 0.4550
Path Results	Path 513 WP	Path 514 CR	Path 515 CR	Path 516 CR	Path 517 CR	Path 518 WP	Path 519 CR	Path 520 CR
Heat Rate, Btu/hr	4482.253	-727.2193	-430.5347	.763.063	5033.633	5399.851	-5020.700	-1759.458
MTC, Btu/ft <sup>2</sup> hr	11.04	Ch 0.2925	NC 0.1732	Rn 0.1717	Rn 0.4903	NC 11.04	Ch 0.4900	NC 0.1717
Path Results	Path 521 CR	Path 522 CR	Path 523 WP	Path 524 CR	Path 525 CR	Path 526 CR	Path 527 CR	Path 528 WP
Heat Rate, Btu/hr	358.0070	924.7851	832.2071	-154.5432	-93.59130	203.2717	636.8682	695.1258
MTC, Btu/ft <sup>2</sup> hr	0.1736	Rn 0.4485	NC 4.876	Ch 0.2877	NC 0.1743	Rn 0.1695	Rn 0.5312	NC 11.04



Path Results	Path 529 N	Path 530 N	Path 531 CR	Path 532 CR	Path 533 WP	Path 534 N	Path 535 N	Path 536 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1466.647	4130.249	4430.742	0.0000000	0.0000000	1640.376
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1717	Rn 0.4903	NC 11.04	Ch 0.0000	N 0.0000	N 0.1733
Path Results	Path 537 CR	Path 538 WP	Path 539 CR	Path 540 CR	Path 541 CR	Path 542 CR	Path 543 WP	Path 544 N
Heat Rate, Btu/hr	4302.111	4468.600	-727.2153	-430.5347	779.1192	2223.255	2385.640	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4546	NC 11.04	Ch 0.2925	NC 0.1732	Rn 0.1717	Rn 0.4900	NC 11.04	Ch 0.0000
Path Results	Path 545 N	Path 546 CR	Path 547 CR	Path 548 WP	Path 549 CR	Path 550 CR	Path 551 CR	Path 552 CR
Heat Rate, Btu/hr	0.0000000	888.8200	2536.292	2721.536	-3655.573	-1192.432	1539.753	4393.762
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1717	Rn 0.4900	NC 11.04	Ch 0.5365	NC 0.1750	Rn 0.1717	Rn 0.4900
Path Results	Path 553 WP	Path 554 N	Path 555 N	Path 556 CR	Path 557 CR	Path 558 WP	Path 559 N	Path 560 N
Heat Rate, Btu/hr	4714.677	0.0000000	0.0000000	224.3050	702.4981	766.9602	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ch 0.0000	N 0.0000	N 0.1695	Rn 0.5309	NC 11.04	Ch 0.0000	N 0.0000
Path Results	Path 561 CR	Path 562 CR	Path 563 WP	Path 564 CR	Path 565 CR	Path 566 CR	Path 567 CR	Path 568 WP
Heat Rate, Btu/hr	271.9753	702.0721	631.0935	-117.7038	-71.38139	2144.182	6573.301	6948.104
HTC, Btu/ft <sup>2</sup> hr°F	0.1736	Rn 0.4482	NC 4.876	Ch 0.2877	NC 0.1743	Rn 0.1750	Rn 0.5365	NC 11.04
Path Results	Path 569 N	Path 570 N	Path 571 CR	Path 572 CR	Path 573 WP	Path 574 N	Path 575 N	Path 576 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1622.781	4508.207	4605.769	0.0000000	0.0000000	296.6739
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1774	Rn 0.4929	NC 11.04	Ch 0.0000	N 0.0000	N 0.1767
Path Results	Path 577 CR	Path 578 WP	Path 579 N	Path 580 N	Path 581 CR	Path 582 CR	Path 583 WP	Path 584 CR
Heat Rate, Btu/hr	849.2425	878.0013	0.0000000	0.0000000	1023.792	2914.681	3005.282	-388.9476
HTC, Btu/ft <sup>2</sup> hr°F	0.5059	NC 11.04	Ch 0.0000	N 0.0000	N 0.1769	Rn 0.5035	NC 11.04	Ch 0.3055
Path Results	Path 585 CR	Path 586 CR	Path 587 CR	Path 588 WP	Path 589 CR	Path 590 CR	Path 591 CR	Path 592 CR
Heat Rate, Btu/hr	-227.4436	283.8404	808.0782	833.1967	-107.8334	-61.39367	911.9487	2723.838
HTC, Btu/ft <sup>2</sup> hr°F	0.1739	Rn 0.1769	Rn 0.5035	NC 11.04	Ch 0.3055	NC 0.1739	Rn 0.1757	Rn 0.5248
Path Results	Path 593 WP	Path 594 N	Path 595 N	Path 596 CR	Path 597 CR	Path 598 WP	Path 599 N	Path 600 N
Heat Rate, Btu/hr	2684.765	0.0000000	0.0000000	834.2439	2494.767	2578.344	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000	Ch 0.0000	N 0.0000	N 0.1757	Rn 0.5253	NC 11.04	Ch 0.0000	N 0.0000
Path Results	Path 601 CR	Path 602 CR	Path 603 WP	Path 604 CR	Path 605 N	Path 606 CR	Path 607 CR	Path 608 WP
Heat Rate, Btu/hr	-11682.94	-59.02499	-13500.74	-22401.20	0.0000000	-7924.066	-40.68690	-8871.501
HTC, Btu/ft <sup>2</sup> hr°F	0.1979	Rn 1.0000E-03	XT 11.04	Ch 3.000	XT 0.0000	N 0.1948	Rn 1.0000E-03	XT 11.04
Path Results	Path 609 CR	Path 610 N	Path 611 CR	Path 612 CR	Path 613 WP	Path 614 CR	Path 615 CR	Path 616 CR
Heat Rate, Btu/hr	-12329.34	0.0000000	445.8026	835.3722	547.9255	-9.820059	-1820.350	530.1094
HTC, Btu/ft <sup>2</sup> hr°F	3.000	XT 0.0000	N 0.1783	Rn 0.3340	NC 11.04	Ch 1.0000E-03	XT 0.1854	Rn 0.1783

Path Results	Path 617 CR	Path 618 WP	Path 619 CR	Path 620 CR	Path 621 CR	Path 622 CR	Path 623 WP	Path 624 CR
Heat Rate, Btu/hr	993.3515	651.5451	-11.67715	-2164.601	-7933.027	-40.73691	-6878.248	-12329.34
HTC, Btu/ft <sup>2</sup> hr°F	0.3340 NC	11.04 Ck	1.0000E-03 XT	0.1854 Rn	0.1947 Rn	1.0000E-03 XT	11.04 Ck	3.000 XT
Path Results	Path 625 N	Path 626 CR	Path 627 CR	Path 628 WP	Path 629 CR	Path 630 CR	Path 631 CR	Path 632 CR
Heat Rate, Btu/hr	0.0000000	441.3095	824.3106	536.6786	-9.820059	-1820.350	525.2045	981.0161
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1782 Rn	0.3329 NC	11.04 Ck	1.0000E-03 XT	0.1854 Rn	0.1782 Rn	0.3329 NC
Path Results	Path 633 WP	Path 634 CR	Path 635 CR	Path 636 CR	Path 637 CR	Path 638 WP	Path 639 CR	Path 640 N
Heat Rate, Btu/hr	628.7038	-11.68690	-2166.407	-11196.65	-56.56261	-13367.58	-21496.38	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	11.04 Ck	1.0000E-03 XT	0.1854 Rn	0.1980 Rn	1.0000E-03 XT	11.04 Ck	3.000 XT	0.0000 N
Path Results	Path 641 CR	Path 642 CR	Path 643 N	Path 644 N	Path 645 N	Path 646 N	Path 647 CR	Path 648 CR
Heat Rate, Btu/hr	38.73081	90.89314	0.0000000	0.0000000	0.0000000	0.0000000	38.95823	87.28681
HTC, Btu/ft <sup>2</sup> hr°F	0.1805 Rn	0.4236 NC	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.1757 Rn	0.3936 NC
Path Results	Path 649 N	Path 650 N	Path 651 N	Path 652 N	Path 653 CR	Path 654 CR	Path 655 Ck	Path 656 Ck
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	33.21325	74.41746	0.3509415	-0.2614058
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.1757 Rn	0.3936 NC	0.2353 Ck	0.2353 Ck
Path Results	Path 657 CR	Path 658 CR	Path 659 CR	Path 660 CR	Path 661 Ck	Path 662 Ck	Path 663 CR	Path 664 CR
Heat Rate, Btu/hr	-33.13646	-74.20348	23.39876	52.49692	0.2471805	-0.1844900	-23.34473	-52.34619
HTC, Btu/ft <sup>2</sup> hr°F	0.1756 Rn	0.3933 NC	0.1757 Rn	0.3941 NC	0.2353 Ck	0.2353 Ck	0.1756 Rn	0.3938 NC
Path Results	Path 665 CR	Path 666 CR	Path 667 N	Path 668 N	Path 669 N	Path 670 N	Path 671 CR	Path 672 CR
Heat Rate, Btu/hr	33.14759	74.21706	0.0000000	0.0000000	0.0000000	0.0000000	30.12502	67.47244
HTC, Btu/ft <sup>2</sup> hr°F	0.1757 Rn	0.3934 NC	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.1756 Rn	0.3934 NC
Path Results	Path 673 N	Path 674 N	Path 675 N	Path 676 N	Path 677 CR	Path 678 CR	Path 679 N	Path 680 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	33.07943	74.02952	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.1757 Rn	0.3931 NC	0.0000 N	0.0000 N
Path Results	Path 681 N	Path 682 N	Path 683 CR	Path 684 CR	Path 685 N	Path 686 N	Path 687 N	Path 688 N
Heat Rate, Btu/hr	0.0000000	0.0000000	38.61893	90.50996	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1805 Rn	0.4231 NC	0.0000 N	0.0000 N	0.0000 N	0.0000 N
Path Results	Path 689 CR	Path 690 CR	Path 691 WP	Path 692 N	Path 693 N	Path 694 CR	Path 695 CR	Path 696 WP
Heat Rate, Btu/hr	2436.987	5986.668	4211.375	0.0000000	0.0000000	1558.693	3575.913	2567.338
HTC, Btu/ft <sup>2</sup> hr°F	0.1684 Rn	0.4137 NC	1296. Ck	0.0000 N	0.0000 N	0.1692 Rn	0.3883 NC	3098. Ck
Path Results	Path 697 N	Path 698 N	Path 699 CR	Path 700 CR	Path 701 WP	Path 702 N	Path 703 N	Path 704 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	617.8668	3.677177	310.7365	0.0000000	0.0000000	1330.361
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1680 Rn	1.0000E-03 XT	2409. Ck	0.0000 N	0.0000 N	0.1655 Rn

Path Results	Path 705 CR	Path 706 WP	Path 707 CR	Path 708 CR	Path 709 WP
Heat Rate, Btu/hr	3703.159	2516.817	1004.722	2752.042	1878.426
HTC, Btu/ft <sup>2</sup> hr°F	0.4607	NC 3098.	Cr 0.1643	Rn 0.4501	NC 3098. Cr

(MLOOP(I),I=1,2): 0.00000000E+00 0.00000000E+00

Case 1 after step no. 1148, time (XA) is 1.00000 hrs. 7 rejected CM steps, next time step is 9.928096E-04 hrs.

Node Results	Node 1 AI	Node 2 AI	Node 3 AI	Node 4 N	Node 5 N	Node 6 BI	Node 7 N	Node 8 N
Temperature, eF	106.0023	105.8454	103.5253	-459.6700	-459.6700	77.00000	-459.6700	-459.6700
Density, lbm/ft**3	7.1000002E-02	7.1000002E-02	7.1000002E-02	0.0000000	0.0000000	1.0000000	0.0000000	0.0000000
Node Results	Node 9 N	Node 10 N	Node 11 N	Node 12 BI	Node 13 BI	Node 14 N	Node 15 N	Node 16 N
Temperature, eF	-459.6700	-459.6700	-459.6700	105.1000	105.1000	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	1.0000000	1.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 17 BI	Node 18 BI	Node 19 N	Node 20 N	Node 21 N	Node 22 N	Node 23 N	Node 24 N
Temperature, eF	105.1000	105.1000	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	1.0000000	1.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 25 N	Node 26 N	Node 27 N	Node 28 N	Node 29 BI	Node 30 BI	Node 31 N	Node 32 N
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	105.1000	105.1000	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	1.0000000	1.0000000	0.0000000	0.0000000
Node Results	Node 33 N	Node 34 N	Node 35 N	Node 36 N	Node 37 N	Node 38 N	Node 39 N	Node 40 N
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 41 N	Node 42 N	Node 43 N	Node 44 N	Node 45 N	Node 46 N	Node 47 N	Node 48 N
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 49 AI	Node 50 AI	Node 51 AI	Node 52 AI	Node 53 N	Node 54 N	Node 55 BI	Node 56 MT
Temperature, eF	110.4138	110.3650	117.0197	117.0786	-459.6700	-459.6700	162.0000	82.81154
Density, lbm/ft**3	7.1000002E-02	7.1000002E-02	7.1000002E-02	7.1000002E-02	0.0000000	0.0000000	1.0000000	125.0000
Node Results	Node 57 WH	Node 58 MT	Node 59 WH	Node 60 MT	Node 61 WH	Node 62 MT	Node 63 WH	Node 64 MT
Temperature, eF	82.63071	82.81355	77.07230	82.81355	77.07230	80.93769	77.0	82.81355
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	145.0000	60	125.0000
Node Results	Node 65 WH	Node 66 MT	Node 67 WH	Node 68 MT	Node 69 WH	Node 70 MT	Node 71 WH	Node 72 MT
Temperature, eF	77.07230	82.81355	77.07230	82.81154	82.10069	82.81355	77.07230	82.81355
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 73 WH	Node 74 MT	Node 75 WH	Node 76 MT	Node 77 WH	Node 78 MT	Node 79 WH	Node 80 MT
Temperature, eF	77.07230	82.81355	77.07230	88.50522	98.97054	88.50522	98.97054	82.81355
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000

Node Results	Node 81 WH	Node 82 WT	Node 83 WH	Node 84 WT	Node 85 WH	Node 86 WT	Node 87 WH	Node 88 WT
Temperature, eP	77.07230	82.81355	77.07230	82.63290	77.06840	82.63290	77.06840	87.96319
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	145.0000
Node Results	Node 89 WH	Node 90 WT	Node 91 WH	Node 92 WT	Node 93 WH	Node 94 WT	Node 95 WH	Node 96 WT
Temperature, eP	97.68711	87.96319	97.68711	87.69997	89.66062	89.17216	87.12377	81.84425
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	100.0000	100.0000	100.0000
Node Results	Node 97 WH	Node 98 WT	Node 99 WH	Node 100 WT	Node 101 WH	Node 102 WT	Node 103 WH	Node 104 WT
Temperature, eP	80.78175	83.84425	80.78175	83.84425	80.78175	83.84425	80.78175	83.84425
Density, lbm/ft**3	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
Node Results	Node 105 WH	Node 106 WT	Node 107 WH	Node 108 WT	Node 109 WH	Node 110 WT	Node 111 WH	Node 112 WT
Temperature, eP	80.78175	82.10267	77.06221	82.10267	77.06221	83.20825	80.43592	88.58439
Density, lbm/ft**3	100.0000	125.0000	125.0000	125.0000	125.0000	100.0000	100.0000	100.0000
Node Results	Node 113 WH	Node 114 WT	Node 115 WH	Node 116 WT	Node 117 WH	Node 118 WT	Node 119 WH	Node 120 WT
Temperature, eP	86.80842	87.36727	89.66062	87.63186	97.68711	87.63186	97.68711	87.22534
Density, lbm/ft**3	100.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	125.0000
Node Results	Node 121 WH	Node 122 WT	Node 123 WH	Node 124 WT	Node 125 WH	Node 126 WT	Node 127 WH	Node 128 WT
Temperature, eP	85.00699	82.10267	77.06221	82.10267	77.06221	82.81355	77.07230	82.81355
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 129 WH	Node 130 WT	Node 131 WH	Node 132 WT	Node 133 WH	Node 134 WT	Node 135 WH	Node 136 WT
Temperature, eP	77.07230	82.81355	77.07230	82.81355	77.07230	82.81355	77.07230	82.81355
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 137 WH	Node 138 WT	Node 139 WH	Node 140 WT	Node 141 WH	Node 142 WT	Node 143 WH	Node 144 WT
Temperature, eP	77.07230	82.81355	77.07230	82.63290	77.06840	83.84425	80.78175	83.84425
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	100.0000	100.0000	100.0000
Node Results	Node 145 WH	Node 146 WT	Node 147 WH	Node 148 WT	Node 149 WH	Node 150 WT	Node 151 WH	Node 152 WT
Temperature, eP	80.78175	83.84425	80.78175	83.84425	80.78175	82.10267	77.06221	82.10267
Density, lbm/ft**3	100.0000	100.0000	100.0000	100.0000	100.0000	125.0000	125.0000	125.0000
Node Results	Node 153 WH	Node 154 WT	Node 155 WH	Node 156 WT	Node 157 WH	Node 158 WT	Node 159 WH	Node 160 WT
Temperature, eP	77.06221	83.20825	80.43592	82.10267	77.06221	94.20647	94.20534	92.70839
Density, lbm/ft**3	125.0000	100.0000	100.0000	125.0000	125.0000	490.0000	490.0000	490.0000
Node Results	Node 161 WH	Node 162 N	Node 163 N	Node 164 N	Node 165 N	Node 166 N	Node 167 N	Node 168 N
Temperature, eP	92.70737	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Node Results	Node 169 N	Node 170 N	Node 171 N	Node 172 N	Node 173 N	Node 174 N	Node 175 N	Node 176 WT
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	86.94698
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	145.0000
Node Results	Node 177 WH	Node 178 WT	Node 179 WH	Node 180 WT	Node 181 WH	Node 182 WT	Node 183 WH	Node 184 WT
Temperature, °F	85.36295	86.94665	85.36122	90.74451	90.95951	90.74451	90.95951	86.87783
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 185 WH	Node 186 WT	Node 187 WH	Node 188 WT	Node 189 WH	Node 190 WT	Node 191 WH	Node 192 N
Temperature, °F	85.57211	90.71812	90.95732	86.50144	85.48878	90.63638	90.95209	-459.6700
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	0.0000000
Node Results	Node 193 N	Node 194 N	Node 195 N	Node 196 N	Node 197 N	Node 198 N	Node 199 N	Node 200 N
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 201 AI	Node 202 N	Node 203 AI	Node 204 AI	Node 205 N	Node 206 N	Node 207 AI	Node 208 N
Temperature, °F	99.45523	-459.6700	98.77089	99.45523	-459.6700	-459.6700	99.42320	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	490.0000	490.0000	0.0000000	0.0000000	490.0000	0.0000000
Node Results	Node 209 N	Node 210 AI	Node 211 N	Node 212 AI	Node 213 AI	Node 214 N	Node 215 N	Node 216 AI
Temperature, °F	-459.6700	99.45523	-459.6700	96.94148	99.43600	-459.6700	-459.6700	99.45589
Density, lbm/ft**3	0.0000000	490.0000	0.0000000	490.0000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 217 N	Node 218 N	Node 219 AI	Node 220 N	Node 221 N	Node 222 AI	Node 223 N	Node 224 N
Temperature, °F	-459.6700	-459.6700	99.44828	-459.6700	-459.6700	99.44828	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 225 AI	Node 226 N	Node 227 N	Node 228 AI	Node 229 N	Node 230 N	Node 231 AI	Node 232 N
Temperature, °F	99.43600	-459.6700	-459.6700	98.77155	-459.6700	-459.6700	99.16888	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000
Node Results	Node 233 N	Node 234 AI	Node 235 N	Node 236 N	Node 237 AI	Node 238 N	Node 239 N	Node 240 AI
Temperature, °F	-459.6700	98.76393	-459.6700	-459.6700	96.94148	-459.6700	-459.6700	96.92355
Density, lbm/ft**3	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 241 N	Node 242 N	Node 243 AI	Node 244 N	Node 245 N	Node 246 AI	Node 247 N	Node 248 N
Temperature, °F	-459.6700	-459.6700	97.39127	-459.6700	-459.6700	96.95843	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 249 N	Node 250 N	Node 251 AI	Node 252 WT	Node 253 WH	Node 254 WT	Node 255 WH	Node 256 WT
Temperature, °F	-459.6700	-459.6700	115.3864	106.9234	106.9218	107.1176	107.1159	107.7252
Density, lbm/ft**3	0.0000000	0.0000000	7.1000002E-02	490.0000	490.0000	490.0000	490.0000	490.0000



Node Results	Node 257 WH	Node 258 WH	Node 259 WH	Node 260 WH	Node 261 WH	Node 262 H	Node 263 H	Node 264 AI
Temperature, eF	107.7239	100.7221	100.7175	101.4476	101.4439	-459.6700	-459.6700	113.1039
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	0.0000000	0.0000000	7.1000002E-02
Node Results	Node 265 WH	Node 266 WH	Node 267 WH	Node 268 WH	Node 269 WH	Node 270 WH	Node 271 WH	Node 272 WH
Temperature, eF	105.0763	105.0748	105.2943	105.2927	106.1272	106.1260	100.0418	100.0369
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 273 WH	Node 274 WH	Node 275 H	Node 276 H	Node 277 AI	Node 278 WH	Node 279 WH	Node 280 WH
Temperature, eF	100.6811	100.6778	-459.6700	-459.6700	117.5216	103.2075	103.2033	109.4277
Density, lbm/ft**3	490.0000	490.0000	0.0000000	0.0000000	7.1000002E-02	490.0000	490.0000	490.0000
Node Results	Node 281 WH	Node 282 WH	Node 283 WH	Node 284 WH	Node 285 WH	Node 286 WH	Node 287 WH	Node 288 WH
Temperature, eF	109.4262	109.4277	109.4262	108.6694	108.6676	108.0935	108.0912	108.8691
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 289 WH	Node 290 H	Node 291 WH	Node 292 WH	Node 293 WH	Node 294 WH	Node 295 WH	Node 296 WH
Temperature, eF	108.8672	-459.6700	94.37994	94.37726	98.05198	98.05128	92.45105	92.45057
Density, lbm/ft**3	490.0000	0.0000000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 297 WH	Node 298 WH	Node 299 H	Node 300 H	Node 301 WH	Node 302 WH	Node 303 WH	Node 304 WH
Temperature, eF	102.3959	102.3918	-459.6700	-459.6700	93.80263	90.24294	97.75695	100.8829
Density, lbm/ft**3	490.0000	490.0000	0.0000000	0.0000000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 305 WH	Node 306 WH	Node 307 WH	Node 308 WH	Node 309 WH	Node 310 WH	Node 311 WH	Node 312 WH
Temperature, eF	97.75695	100.8829	97.48484	96.57730	98.89355	96.57466	93.80263	90.24294
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 313 WH	Node 314 WH	Node 315 WH	Node 316 WH	Node 317 WH	Node 318 WH	Node 319 WH	Node 320 WH
Temperature, eF	93.80236	92.69160	92.69133	90.16985	96.19192	100.3044	92.69133	92.68422
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 321 WH	Node 322 WH	Node 323 WH	Node 324 WH	Node 325 WH	Node 326 WH	Node 327 WH	Node 328 WH
Temperature, eF	97.21908	101.5827	87.98884	84.33565	92.69133	90.16985	96.18518	100.3044
Density, lbm/ft**3	125.0000	125.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 329 WH	Node 330 WH	Node 331 WH	Node 332 WH	Node 333 WH	Node 334 WH	Node 335 WH	Node 336 WH
Temperature, eF	92.68422	90.16949	92.68453	93.81423	92.68422	90.16949	87.98133	84.33526
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 337 WH	Node 338 WH	Node 339 WH	Node 340 WH	Node 341 WH	Node 342 WH	Node 343 WH	Node 344 WH
Temperature, eF	97.20917	101.5827	93.81452	90.24473	98.90463	96.57626	97.49615	96.57730
Density, lbm/ft**3	125.0000	125.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000

Path Results	Path 1 CR	Path 2 CR	Path 3 WP	Path 4 CR	Path 5 CR	Path 6 CR	Path 7 CR	Path 8 WP
Heat Rate, Btu/hr	997.2669	3218.002	3395.873	-3222.420	-997.3849	569.8755	1838.824	1944.790
HTC, Btu/ft <sup>2</sup> hr°F	0.1662	Rn 0.5362	NC 4.955	Ck 0.5364	NC 0.1660	Rn 0.1662	Rn 0.5362	NC 5.000
Ck								
Path Results	Path 9 N	Path 10 N	Path 11 CR	Path 12 CR	Path 13 WP	Path 14 N	Path 15 N	Path 16 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	164.9133	532.1275	562.7924	0.0000000	0.0000000	5766.804
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1662	Rn 0.5362	NC 5.000	Ck 0.0000	N 0.0000	N 0.1653
Rn								
Path Results	Path 17 CR	Path 18 WP	Path 19 CR	Path 20 CR	Path 21 CR	Path 22 CR	Path 23 WP	Path 24 N
Heat Rate, Btu/hr	19187.51	21323.77	0.0000000	0.0000000	462.3737	1491.946	1577.923	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5501	NC 11.04	Ck 0.0000	0.0000	0.1662	Rn 0.5362	NC 5.000	Ck 0.0000
N								
Path Results	Path 25 N	Path 26 CR	Path 27 CR	Path 28 WP	Path 29 N	Path 30 N	Path 31 CR	Path 32 CR
Heat Rate, Btu/hr	0.0000000	483.9511	1561.571	1651.559	0.0000000	0.0000000	994.9550	3210.542
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1662	Rn 0.5362	NC 5.000	Ck 0.0000	N 0.0000	N 0.1662	Rn 0.5362
NC								
Path Results	Path 33 WP	Path 34 CR	Path 35 CR	Path 36 CR	Path 37 CR	Path 38 WP	Path 39 N	Path 40 N
Heat Rate, Btu/hr	3388.003	-2889.514	-911.2175	191.4998	617.9145	653.5230	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	4.955	Ck 0.5223	NC 0.1647	Rn 0.1662	Rn 0.5362	NC 5.000	Ck 0.0000	N 0.0000
N								
Path Results	Path 41 CR	Path 42 CR	Path 43 WP	Path 44 N	Path 45 N	Path 46 CR	Path 47 CR	Path 48 WP
Heat Rate, Btu/hr	176.0873	568.1829	600.9255	0.0000000	0.0000000	989.4796	3192.765	3376.754
HTC, Btu/ft <sup>2</sup> hr°F	0.1662	Rn 0.5362	NC 5.000	Ck 0.0000	N 0.0000	N 0.1662	Rn 0.5362	NC 5.000
Ck								
Path Results	Path 49 N	Path 50 N	Path 51 CR	Path 52 CR	Path 53 WP	Path 54 CR	Path 55 CR	Path 56 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	339.4607	983.0938	982.7911	-243.6257	-121.9806	386.4611
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1687	Rn 0.4886	NC 4.876	Ck 0.3456	NC 0.1730	Rn 0.1687
Rn								
Path Results	Path 57 CR	Path 58 WP	Path 59 CR	Path 60 CR	Path 61 CR	Path 62 CR	Path 63 WP	Path 64 N
Heat Rate, Btu/hr	1125.001	1124.655	-278.7925	-139.5882	966.3610	3118.168	3297.858	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4886	NC 4.876	Ck 0.3456	NC 0.1730	Rn 0.1662	Rn 0.5362	NC 5.000	Ck 0.0000
N								
Path Results	Path 65 N	Path 66 CR	Path 67 CR	Path 68 WP	Path 69 N	Path 70 N	Path 71 CR	Path 72 CR
Heat Rate, Btu/hr	0.0000000	402.6504	1299.237	1374.108	0.0000000	0.0000000	579.5726	1872.454
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1662	Rn 0.5362	NC 5.000	Ck 0.0000	N 0.0000	N 0.1660	Rn 0.5363
NC								
Path Results	Path 73 WP	Path 74 N	Path 75 N	Path 76 CR	Path 77 CR	Path 78 WP	Path 79 N	Path 80 N
Heat Rate, Btu/hr	1946.892	0.0000000	0.0000000	369.5546	1193.938	1241.403	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000	Ck 0.0000	N 0.0000	N 0.1660	Rn 0.5363	NC 5.000	Ck 0.0000	N 0.0000
N								
Path Results	Path 81 CR	Path 82 CR	Path 83 WP	Path 84 CR	Path 85 CR	Path 86 CR	Path 87 CR	Path 88 WP
Heat Rate, Btu/hr	732.9173	2141.873	2266.863	-663.9842	-311.1685	948.5167	2771.939	233.697
HTC, Btu/ft <sup>2</sup> hr°F	0.1684	Rn 0.4921	NC 11.04	Ck 0.3680	NC 0.1725	Rn 0.1684	Rn 0.4921	NC 11.04
Ck								

Node Results	Node 345 WT	Node 346 WH	Node 347 WT	Node 348 WH	Node 349 WT	Node 350 WH	Node 351 WT	Node 352 WH
Temperature, °F	97.76822	100.8829	97.76822	100.8829	95.84821	90.50313	95.23481	92.01824
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	125.0000	125.0000	145.0000	145.0000
Node Results	Node 353 WT	Node 354 WH	Node 355 WT	Node 356 WH	Node 357 WT	Node 358 WH	Node 359 WT	Node 360 WH
Temperature, °F	140.1058	158.9535	139.8471	158.9535	106.2866	108.0789	106.2866	108.0789
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 361 WT	Node 362 WH	Node 363 WT	Node 364 WH	Node 365 WT	Node 366 WH	Node 367 WT	Node 368 WH
Temperature, °F	139.8404	158.9535	106.2812	108.0789	106.2812	108.0789	140.1087	158.9535
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 369 AI	Node 370 N	Node 371 N	Node 372 AI	Node 373 N	Node 374 N	Node 375 AI	Node 376 AI
Temperature, °F	111.8288	-459.6700	-459.6700	106.1134	-459.6700	-459.6700	106.1100	106.0698
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	7.1000002E-02
Node Results	Node 377 AI	Node 378 AI	Node 379 AI	Node 380 AI	Node 381 AI	Node 382 N	Node 383 N	Node 384 AI
Temperature, °F	106.0801	106.0801	106.0397	106.0502	106.1287	-459.6700	-459.6700	106.0734
Density, lbm/ft**3	490.0000	490.0000	7.1000002E-02	490.0000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 385 N	Node 386 N	Node 387 AI	Node 388 N	Node 389 N	Node 390 AI	Node 391 N	Node 392 N
Temperature, °F	-459.6700	-459.6700	106.0915	-459.6700	-459.6700	111.8838	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 393 N	Node 394 N	Node 395 N	Node 396 N	Node 397 N	Node 398 N	Node 399 N	Node 400 N
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 401 N	Node 402 N	Node 403 BI	Node 404 BI	Node 405 BI			
Temperature, °F	-459.6700	-459.6700	122.0000	122.0000	104.0000			
Density, lbm/ft**3	0.0000000	0.0000000	1.000000	1.000000	1.000000			

Path Results	Path 89 CR	Path 90 CR	Path 91 CR	Path 92 CR	Path 93 WP	Path 94 N	Path 95 N	Path 96 CR
Heat Rate, Btu/hr	-859.3058	-402.7037	274.8010	807.5249	856.9309	0.0000000	0.0000000	1439.589
HTC, Btu/ft <sup>2</sup> hr°F	0.3680	NC	0.1725	Rn 0.1683	Rn 0.4945	NC	11.04	Ch 0.0000
Path Results	Path 97 CR	Path 98 WP	Path 99 N	Path 100 N	Path 101 CR	Path 102 CR	Path 103 WP	Path 104 N
Heat Rate, Btu/hr	4097.748	2428.887	0.0000000	0.0000000	181.3814	573.8663	351.6971	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4809	NC	2.320	Ch 0.0000	N 0.0000	N 0.1665	Rn 0.5269	NC
Path Results	Path 105 N	Path 106 CR	Path 107 CR	Path 108 WP	Path 109 N	Path 110 N	Path 111 CR	Path 112 CR
Heat Rate, Btu/hr	0.0000000	306.3331	969.1964	593.9773	0.0000000	0.0000000	82.81254	262.0077
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1665	Rn 0.5269	NC	2.320	Ch 0.0000	N 0.0000	N 0.1665
Path Results	Path 113 WP	Path 114 N	Path 115 N	Path 116 CR	Path 117 CR	Path 118 WP	Path 119 N	Path 120 N
Heat Rate, Btu/hr	160.5728	0.0000000	0.0000000	557.7021	1764.494	1081.280	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	2.320	Ch 0.0000	N 0.0000	N 0.1665	Rn 0.5269	NC	2.320	Ch 0.0000
Path Results	Path 121 CR	Path 122 CR	Path 123 WP	Path 124 N	Path 125 N	Path 126 CR	Path 127 CR	Path 128 WP
Heat Rate, Btu/hr	87.57609	277.0789	169.8093	0.0000000	0.0000000	100.5710	318.9041	333.5544
HTC, Btu/ft <sup>2</sup> hr°F	0.1665	Rn 0.5269	NC	2.320	Ch 0.0000	N 0.0000	N 0.1647	Rn 0.5223
Path Results	Path 129 N	Path 130 N	Path 131 CR	Path 132 CR	Path 133 WP	Path 134 N	Path 135 N	Path 136 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	560.3747	1776.912	1858.542	0.0000000	0.0000000	402.4587
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1647	Rn 0.5223	NC	5.000	Ch 0.0000	N 0.0000
Path Results	Path 137 CR	Path 138 WP	Path 139 N	Path 140 N	Path 141 CR	Path 142 CR	Path 143 WP	Path 144 N
Heat Rate, Btu/hr	1250.340	771.1732	0.0000000	0.0000000	1280.645	3543.535	2107.097	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5133	NC	2.320	Ch 0.0000	N 0.0000	N 0.1676	Rn 0.4638	NC
Path Results	Path 145 N	Path 146 CR	Path 147 CR	Path 148 WP	Path 149 N	Path 150 N	Path 151 CR	Path 152 CR
Heat Rate, Btu/hr	0.0000000	242.9449	692.0756	734.2938	0.0000000	0.0000000	836.9755	2369.654
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1671	Rn 0.4759	NC	21.04	Ch 0.0000	N 0.0000	N 0.1672
Path Results	Path 153 WP	Path 154 CR	Path 155 CR	Path 156 CR	Path 157 CR	Path 158 WP	Path 159 CR	Path 160 CR
Heat Rate, Btu/hr	2506.013	-859.3058	-402.7037	248.7013	704.1257	744.6438	-255.3366	-119.8605
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ch 0.3680	NC	0.1725	Rn 0.1672	Rn 0.4733	NC	11.04
Path Results	Path 161 CR	Path 162 CR	Path 163 WP	Path 164 N	Path 165 N	Path 166 CR	Path 167 CR	Path 168 WP
Heat Rate, Btu/hr	629.8860	1800.222	1798.397	0.0000000	0.0000000	81.16258	157.3612	269.1842
HTC, Btu/ft <sup>2</sup> hr°F	0.1670	Rn 0.4773	NC	5.000	Ch 0.0000	N 0.0000	N 0.1447	Rn 0.5223
Path Results	Path 169 N	Path 170 N	Path 171 CR	Path 172 CR	Path 173 WP	Path 174 N	Path 175 N	Path 176 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	488.0341	1547.524	1618.617	0.0000000	0.0000000	189.9585
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1647	Rn 0.5223	NC	5.000	Ch 0.0000	N 0.0000

Path Results	Path 177 CR	Path 178 WP	Path 179 N	Path 180 N	Path 181 CR	Path 182 CR	Path 183 WP	Path 184 N
Heat Rate, Btu/hr	612.9413	648.2632	0.0000000	0.0000000	161.4455	520.9380	550.9580	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5362 NC	5.000 Ck	0.0000 N	0.0000 N	0.1662 Rn	0.5362 NC	5.000 Ck	0.0000 N
Path Results	Path 185 N	Path 186 CR	Path 187 CR	Path 188 WP	Path 189 N	Path 190 N	Path 191 CR	Path 192 CR
Heat Rate, Btu/hr	0.0000000	112.8962	364.2836	385.2761	0.0000000	0.0000000	130.2353	420.2316
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1662 Rn	0.5362 NC	5.000 Ck	0.0000 N	0.0000 N	0.1662 Rn	0.5362 NC
Path Results	Path 193 WP	Path 194 N	Path 195 N	Path 196 CR	Path 197 CR	Path 198 WP	Path 199 N	Path 200 N
Heat Rate, Btu/hr	444.4482	0.0000000	0.0000000	395.3295	1275.614	1349.124	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000 Ck	0.0000 N	0.0000 N	0.1662 Rn	0.5362 NC	5.000 Ck	0.0000 N	0.0000 N
Path Results	Path 201 CR	Path 202 CR	Path 203 WP	Path 204 N	Path 205 N	Path 206 CR	Path 207 CR	Path 208 WP
Heat Rate, Btu/hr	387.6233	1250.748	1322.825	0.0000000	0.0000000	161.8308	522.1812	552.2729
HTC, Btu/ft <sup>2</sup> hr°F	0.1662 Rn	0.5362 NC	5.000 Ck	0.0000 N	0.0000 N	0.1662 Rn	0.5362 NC	5.000 Ck
Path Results	Path 209 N	Path 210 N	Path 211 CR	Path 212 CR	Path 213 WP	Path 214 N	Path 215 N	Path 216 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	193.0624	623.7363	648.5325	0.0000000	0.0000000	96.73677
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1660 Rn	0.5363 NC	5.000 Ck	0.0000 N	0.0000 N	0.1665 Rn
Path Results	Path 217 CR	Path 218 WP	Path 219 N	Path 220 N	Path 221 CR	Path 222 CR	Path 223 WP	Path 224 N
Heat Rate, Btu/hr	306.0620	187.5718	0.0000000	0.0000000	162.6937	514.7407	315.4617	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5269 NC	2.320 Ck	0.0000 N	0.0000 N	0.1665 Rn	0.5269 NC	2.320 Ck	0.0000 N
Path Results	Path 225 N	Path 226 CR	Path 227 CR	Path 228 WP	Path 229 N	Path 230 N	Path 231 CR	Path 232 CR
Heat Rate, Btu/hr	0.0000000	337.1130	1066.580	653.6593	0.0000000	0.0000000	91.60679	289.8315
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1665 Rn	0.5269 NC	2.320 Ck	0.0000 N	0.0000 N	0.1665 Rn	0.5269 NC
Path Results	Path 233 WP	Path 234 N	Path 235 N	Path 236 CR	Path 237 CR	Path 238 WP	Path 239 N	Path 240 N
Heat Rate, Btu/hr	177.6248	0.0000000	0.0000000	89.98460	285.3353	298.4634	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	2.320 Ck	0.0000 N	0.0000 N	0.1647 Rn	0.5223 NC	5.000 Ck	0.0000 N	0.0000 N
Path Results	Path 241 CR	Path 242 CR	Path 243 WP	Path 244 N	Path 245 N	Path 246 CR	Path 247 CR	Path 248 WP
Heat Rate, Btu/hr	327.4734	1038.397	1086.100	0.0000000	0.0000000	252.4178	784.2001	483.6715
HTC, Btu/ft <sup>2</sup> hr°F	0.1647 Rn	0.5223 NC	5.000 Ck	0.0000 N	0.0000 N	0.1652 Rn	0.5133 NC	2.320 Ck
Path Results	Path 249 N	Path 250 N	Path 251 CR	Path 252 CR	Path 253 WP	Path 254 N	Path 255 N	Path 256 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	200.7892	636.6593	665.9384	0.0000000	0.0000000	8417.417
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1647 Rn	0.5223 NC	5.000 Ck	0.0000 N	0.0000 N	0.1680 Rn
Path Results	Path 257 CR	Path 258 WP	Path 259 CR	Path 260 CR	Path 261 CR	Path 262 CR	Path 263 WP	Path 264 CR
Heat Rate, Btu/hr	29153.03	30135.21	-65.86620	-11152.83	8380.419	29025.09	30004.93	-65.45229
HTC, Btu/ft <sup>2</sup> hr°F	0.5819 NC	11.05 Ck	1.0000E-03 XT	0.1693 Rn	0.1680 Rn	0.5819 NC	11.05 Ck	1.0000E-03 XT

Path Results	Path 265 CR	Path 266 CR	Path 267 CR	Path 268 WP	Path 269 N	Path 270 N	Path 271 CR	Path 272 CR
Heat Rate, Btu/hr	-11081.21	1513.019	8.915116	957.9372	0.0000000	0.0000000	1506.286	8.875447
HTC, Btu/ft <sup>2</sup> hr°F	0.1693	Rn 0.1697	Rn 1.0000E-03 XT	11.04	Ck 0.0000	N 0.0000	N 0.1697	Rn 1.0000E-03 XT
Path Results	Path 273 WP	Path 274 N	Path 275 N	Path 276 CR	Path 277 CR	Path 278 WP	Path 279 CR	Path 280 CR
Heat Rate, Btu/hr	953.6746	0.0000000	0.0000000	7054.105	24409.07	24589.16	-69.65632	-12015.54
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.0000	N 0.0000	N 0.1679	Rn 0.5810	NC	11.05	Ck 1.0000E-03 XT
0.1725	Rn							
Path Results	Path 281 CR	Path 282 CR	Path 283 WP	Path 284 N	Path 285 N	Path 286 CR	Path 287 CR	Path 288 WP
Heat Rate, Btu/hr	4420.761	26.06124	2729.620	0.0000000	0.0000000	6046.316	20344.01	20450.71
HTC, Btu/ft <sup>2</sup> hr°F	0.1696	Rn 1.0000E-03 XT	11.04	Ck 0.0000	N 0.0000	N 0.1667	Rn 0.5606	NC
11.05								Ck
Path Results	Path 289 CR	Path 290 CR	Path 291 CR	Path 292 CR	Path 293 WP	Path 294 N	Path 295 N	Path 296 CR
Heat Rate, Btu/hr	-67.33692	-11614.77	3561.680	21.13400	2056.988	0.0000000	0.0000000	54.58418
HTC, Btu/ft <sup>2</sup> hr°F	1.0000E-03 XT	0.1725	Rn 0.1685	Rn 1.0000E-03 XT	11.04	Ck 0.0000	N 0.0000	N 0.1737
								Rn
Path Results	Path 297 CR	Path 298 N	Path 299 N	Path 300 CR	Path 301 CR	Path 302 CR	Path 303 CR	Path 304 N
Heat Rate, Btu/hr	111.0032	0.0000000	0.0000000	-58.84968	-123.0522	54.58418	111.0032	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.3532	NC 0.0000	N 0.0000	N 0.1733	Rn 0.3624	NC 0.1737	Rn 0.3532	NC 0.0000
								N
Path Results	Path 305 N	Path 306 N	Path 307 N	Path 308 CR	Path 309 CR	Path 310 N	Path 311 N	Path 312 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	28.22314	57.49240	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1737	Rn 0.3538	NC 0.0000	N 0.0000	N 0.0000
								N
Path Results	Path 313 N	Path 314 CR	Path 315 CR	Path 316 N	Path 317 N	Path 318 CR	Path 319 CR	Path 320 CR
Heat Rate, Btu/hr	0.0000000	54.58418	111.0032	0.0000000	0.0000000	-54.16365	-111.8339	24.51972
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1737	Rn 0.3532	NC 0.0000	N 0.0000	N 0.1714	Rn 0.3539	NC 0.1737
								Rn
Path Results	Path 321 CR	Path 322 N	Path 323 N	Path 324 N	Path 325 N	Path 326 CR	Path 327 CR	Path 328 N
Heat Rate, Btu/hr	49.91450	0.0000000	0.0000000	0.0000000	0.0000000	20.35333	41.38938	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.3536	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1737	Rn 0.3532	NC 0.0000
								N
Path Results	Path 329 N	Path 330 N	Path 331 N	Path 332 CR	Path 333 CR	Path 334 N	Path 335 N	Path 336 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	58.05618	118.1074	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1737	Rn 0.3533	NC 0.0000	N 0.0000	N 0.0000
								N
Path Results	Path 337 N	Path 338 CR	Path 339 CR	Path 340 N	Path 341 N	Path 342 N	Path 343 N	Path 344 CR
Heat Rate, Btu/hr	0.0000000	58.05618	118.1074	0.0000000	0.0000000	0.0000000	0.0000000	24.51972
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1737	Rn 0.3533	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1737
								Rn
Path Results	Path 345 CR	Path 346 N	Path 347 N	Path 348 N	Path 349 N	Path 350 CR	Path 351 CR	Path 352 N
Heat Rate, Btu/hr	49.91450	0.0000000	0.0000000	0.0000000	0.0000000	21.94402	45.88252	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.3536	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1733	Rn 0.3624	NC 0.0000
								N



Path Results	Path 353 N	Path 354 N	Path 355 N	Path 356 CR	Path 357 CR	Path 358 N	Path 359 N	Path 360 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	23.51320	48.18360	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1735	Rn 0.3555	NC 0.0000	N 0.0000	N 0.0000
Path Results	Path 361 N	Path 362 CR	Path 363 CR	Path 364 N	Path 365 N	Path 366 N	Path 367 N	Path 368 CR
Heat Rate, Btu/hr	0.0000000	62.58811	130.9140	0.0000000	0.0000000	0.0000000	0.0000000	54.16365
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1733	Rn 0.3625	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1714
Path Results	Path 369 CR	Path 370 N	Path 371 N	Path 372 N	Path 373 N	Path 374 CR	Path 375 CR	Path 376 N
Heat Rate, Btu/hr	111.8339	0.0000000	0.0000000	0.0000000	0.0000000	24.32569	50.27373	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.3539	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1714	Rn 0.3562	NC 0.0000
Path Results	Path 377 N	Path 378 N	Path 379 N	Path 380 CR	Path 381 CR	Path 382 N	Path 383 N	Path 384 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	21.05164	42.41198	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1716	Rn 0.3657	NC 0.0000	N 0.0000	N 0.0000
Path Results	Path 385 N	Path 386 CR	Path 387 CR	Path 388 N	Path 389 N	Path 390 N	Path 391 N	Path 392 CR
Heat Rate, Btu/hr	0.0000000	23.41152	48.29540	0.0000000	0.0000000	0.0000000	0.0000000	18468.93
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1714	Rn 0.3536	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.5735
Path Results	Path 393 CR	Path 394 WP	Path 395 CR	Path 396 CR	Path 397 CR	Path 398 CR	Path 399 WP	Path 400 CR
Heat Rate, Btu/hr	12379.87	16185.33	797.3340	725.3385	2875.393	2213.567	2704.466	183.3196
HTC, Btu/ft <sup>2</sup> hr°F	0.3844	NC 2709.	Ck 0.1947	NC 0.1771	Rn 0.5738	Rn 0.4418	NC 2709.	Ck 0.2381
Path Results	Path 401 CR	Path 402 CR	Path 403 CR	Path 404 CR	Path 405 WP	Path 406 CR	Path 407 WP	Path 408 CR
Heat Rate, Btu/hr	136.4258	38954.30	7793.608	5044.705	6419.351	6189.775	3094.683	34023.10
HTC, Btu/ft <sup>2</sup> hr°F	0.1772	Rn 60.94	NC 0.5747	Rn 0.3720	NC 2709.	Ck 0.7000	XT 1116.	Ck 0.7000
Path Results	Path 409 WP	Path 410 N	Path 411 N	Path 412 CR	Path 413 CR	Path 414 WP	Path 415 CR	Path 416 CR
Heat Rate, Btu/hr	17010.89	0.0000000	0.0000000	17215.41	11464.25	15495.23	1285.818	1025.815
HTC, Btu/ft <sup>2</sup> hr°F	1296.	Ck 0.0000	N 0.0000	N 0.5673	Rn 0.3778	NC 2709.	Ck 0.2195	NC 0.1751
Path Results	Path 417 CR	Path 418 CR	Path 419 WP	Path 420 CR	Path 421 CR	Path 422 CR	Path 423 CR	Path 424 CR
Heat Rate, Btu/hr	2553.529	1950.044	2476.209	270.2611	178.4011	31995.69	5556.642	3523.166
HTC, Btu/ft <sup>2</sup> hr°F	0.5677	Rn 0.4335	NC 2709.	Ck 0.2655	NC 0.1752	Rn 52.19	NC 0.5689	Rn 0.3607
Path Results	Path 425 WP	Path 426 CR	Path 427 WP	Path 428 CR	Path 429 WP	Path 430 N	Path 431 N	Path 432 CR
Heat Rate, Btu/hr	4540.078	5239.530	2619.583	29209.71	14604.25	0.0000000	0.0000000	10253.33
HTC, Btu/ft <sup>2</sup> hr°F	2709.	Ck 0.7000	XT 1116.	Ck 0.7000	XT 1296.	Ck 0.0000	N 0.0000	N 0.5712
Path Results	Path 433 CR	Path 434 WP	Path 435 CR	Path 436 CR	Path 437 CR	Path 438 CR	Path 439 WP	Path 440 CR
Heat Rate, Btu/hr	8207.661	8454.084	-937.0758	-615.9695	7325.667	4780.224	7290.011	1522.372
HTC, Btu/ft <sup>2</sup> hr°F	0.4573	NC 1296.	Ck 0.2669	NC 0.1754	Rn 0.5806	Rn 0.3788	NC 3098.	Ck 0.2852

Path Results	Path 441 CR	Path 442 CR	Path 443 CR	Path 444 WP	Path 445 CR	Path 446 CR	Path 447 CR	Path 448 CR
Heat Rate, Btu/hr	952.0095	639.0576	417.0048	635.9471	132.8047	83.04893	1902.882	1281.463
HTC, Btu/ft <sup>2</sup> hr°F	0.1783	Rn 0.5806	Rn 0.3788	NC	3098.	Ck 0.2852	NC 0.1773	Rn 0.5794
Path Results	Path 449 WP	Path 450 CR	Path 451 CR	Path 452 CR	Path 453 CR	Path 454 WP	Path 455 CR	Path 456 CR
Heat Rate, Btu/hr	1809.930	259.6427	176.0030	3616.380	2883.518	3567.660	388.5483	246.1370
HTC, Btu/ft <sup>2</sup> hr°F	2709.	Ck 0.2626	NC 0.1780	Rn 0.5785	Rn 0.4613	NC	2409.	Ck 0.2805
Path Results	Path 457 CR	Path 458 CR	Path 459 WP	Path 460 CR	Path 461 CR	Path 462 CR	Path 463 CR	Path 464 WP
Heat Rate, Btu/hr	167.5327	129.5885	171.9714	29.79444	17.04075	44623.47	25675.85	12837.82
HTC, Btu/ft <sup>2</sup> hr°F	0.5797	Rn 0.4484	NC	2709.	Ck 0.3114	NC 0.1781	Rn	274.0
Path Results	Path 465 N	Path 466 N	Path 467 N	Path 468 N	Path 469 N	Path 470 N	Path 471 CR	Path 472 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	1235.129	3759.581
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1763	Rn 0.5364
Path Results	Path 473 WP	Path 474 N	Path 475 N	Path 476 CR	Path 477 CR	Path 478 WP	Path 479 CR	Path 480 CR
Heat Rate, Btu/hr	4366.537	0.0000000	0.0000000	818.5182	2317.917	2677.789	-307.3962	-175.0123
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.0000	N 0.0000	N 0.1781	Rn 0.5043	NC	11.04	Ck 0.3055
Path Results	Path 481 CR	Path 482 CR	Path 483 WP	Path 484 CR	Path 485 CR	Path 486 CR	Path 487 CR	Path 488 WP
Heat Rate, Btu/hr	1035.669	2932.855	3288.199	-388.9476	-221.4476	300.0211	854.1631	987.6455
HTC, Btu/ft <sup>2</sup> hr°F	0.1781	Rn 0.5043	NC	11.04	Ck 0.3055	NC 0.1739	Rn 0.1780	Rn 0.5067
Path Results	Path 489 N	Path 490 N	Path 491 CR	Path 492 CR	Path 493 WP	Path 494 N	Path 495 N	Path 496 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1647.662	4559.645	5303.105	0.0000000	0.0000000	2158.215
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1786	Rn 0.4943	NC	11.04	Ck 0.0000	N 0.0000
Path Results	Path 497 CR	Path 498 WP	Path 499 N	Path 500 N	Path 501 CR	Path 502 CR	Path 503 WP	Path 504 CR
Heat Rate, Btu/hr	6567.748	7628.061	0.0000000	0.0000000	1200.249	3652.542	4242.751	3350.316
HTC, Btu/ft <sup>2</sup> hr°F	0.5364	NC	11.04	Ck 0.0000	N 0.0000	N 0.1763	Rn 0.5364	NC
Path Results	Path 505 CR	Path 506 CR	Path 507 CR	Path 508 WP	Path 509 N	Path 510 N	Path 511 CR	Path 512 CR
Heat Rate, Btu/hr	-897.3788	769.8051	2187.769	2583.179	0.0000000	0.0000000	1667.274	4365.886
HTC, Btu/ft <sup>2</sup> hr°F	0.1726	Rn 0.1726	Rn 0.4906	NC	11.04	Ck 0.0000	N 0.0000	N 0.1742
Path Results	Path 513 WP	Path 514 CR	Path 515 CR	Path 516 CR	Path 517 CR	Path 518 WP	Path 519 CR	Path 520 CR
Heat Rate, Btu/hr	5116.051	-727.2193	-430.5127	1776.426	5048.565	5961.028	-5032.758	-1771.976
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.2925	NC 0.1732	Rn 0.1726	Rn 0.4906	NC	11.04	Ck 0.4903
Path Results	Path 521 CR	Path 522 CR	Path 523 WP	Path 524 CR	Path 525 CR	Path 526 CR	Path 527 CR	Path 528 WP
Heat Rate, Btu/hr	352.0312	896.8599	989.9637	-154.5432	-93.59130	203.4163	632.6132	742.1850
HTC, Btu/ft <sup>2</sup> hr°F	0.1747	Rn 0.4451	NC	4.876	Ck 0.2877	NC 0.1743	Rn 0.1705	Rn 0.5303

Path Results	Path 529 N	Path 530 N	Path 531 CR	Path 532 CR	Path 533 WP	Path 534 N	Path 535 N	Path 536 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1457.612	4142.301	4891.201	0.0000000	0.0000000	1662.091
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1726	Rn 0.4906	NC 11.04	Ck 0.0000	N 0.0000	N 0.1742
Path Results	Path 537 CR	Path 538 WP	Path 539 CR	Path 540 CR	Path 541 CR	Path 542 CR	Path 543 WP	Path 544 N
Heat Rate, Btu/hr	4348.706	5097.240	-727.2193	-430.5347	784.6625	2228.595	2632.097	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4558	NC 11.04	Ck 0.2925	NC 0.1732	Rn 0.1726	Rn 0.4903	NC 11.04	Ck 0.0000
Path Results	Path 545 N	Path 546 CR	Path 547 CR	Path 548 WP	Path 549 CR	Path 550 CR	Path 551 CR	Path 552 CR
Heat Rate, Btu/hr	0.0000000	895.1301	2542.329	3002.076	-3662.399	-1202.912	1550.708	4404.314
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1726	Rn 0.4903	NC 11.04	Ck 0.5367	NC 0.1763	Rn 0.1726	Rn 0.4903
Path Results	Path 553 WP	Path 554 N	Path 555 N	Path 556 CR	Path 557 CR	Path 558 WP	Path 559 N	Path 560 N
Heat Rate, Btu/hr	5201.744	0.0000000	0.0000000	224.3800	697.4910	818.4882	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.0000	N 0.0000	N 0.1705	Rn 0.5299	NC 11.04	Ck 0.0000	N 0.0000
Path Results	Path 561 CR	Path 562 CR	Path 563 WP	Path 564 CR	Path 565 CR	Path 566 CR	Path 567 CR	Path 568 WP
Heat Rate, Btu/hr	267.2825	680.3913	751.2307	-117.7038	-71.28139	2163.002	6585.469	7646.792
HTC, Btu/ft <sup>2</sup> hr°F	0.1747	Rn 0.4447	NC 4.876	Ck 0.2877	NC 0.1743	Rn 0.1763	Rn 0.5367	NC 11.04
Path Results	Path 569 N	Path 570 N	Path 571 CR	Path 572 CR	Path 573 WP	Path 574 N	Path 575 N	Path 576 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1652.324	4575.676	5320.276	0.0000000	0.0000000	300.8095
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1787	Rn 0.4947	NC 11.04	Ck 0.0000	N 0.0000	N 0.1780
Path Results	Path 577 CR	Path 578 WP	Path 579 N	Path 580 N	Path 581 CR	Path 582 CR	Path 583 WP	Path 584 CR
Heat Rate, Btu/hr	856.9361	990.6088	0.0000000	0.0000000	1038.428	2942.520	3398.536	-388.9476
HTC, Btu/ft <sup>2</sup> hr°F	0.5071	NC 11.04	Ck 0.0000	N 0.0000	N 0.1781	Rn 0.5047	NC 11.04	Ck 0.3055
Path Results	Path 585 CR	Path 586 CR	Path 587 CR	Path 588 WP	Path 589 CR	Path 590 CR	Path 591 CR	Path 592 CR
Heat Rate, Btu/hr	-221.4426	287.8982	815.7964	942.2241	-107.8334	-61.39367	898.9095	2641.342
HTC, Btu/ft <sup>2</sup> hr°F	0.1739	Rn 0.1781	Rn 0.5047	NC 11.04	Ck 0.3055	NC 0.1739	Rn 0.1772	Rn 0.5208
Path Results	Path 593 WP	Path 594 N	Path 595 N	Path 596 CR	Path 597 CR	Path 598 WP	Path 599 N	Path 600 N
Heat Rate, Btu/hr	2959.105	0.0000000	0.0000000	842.2291	2502.176	2906.203	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000	Ck 0.0000	N 0.0000	N 0.1769	Rn 0.5257	NC 11.04	Ck 0.0000	N 0.0000
Path Results	Path 601 CR	Path 602 CR	Path 603 WP	Path 604 CR	Path 605 N	Path 606 CR	Path 607 CR	Path 608 WP
Heat Rate, Btu/hr	-11249.71	-56.58409	-12773.27	-22401.20	0.0000000	-7757.157	-38.69885	-8395.578
HTC, Btu/ft <sup>2</sup> hr°F	0.1988	Rn 1.0000E-03	XT 11.04	Ck 3.000	XT 0.0000	N 0.1954	Rn 1.0000E-03	XT 11.04
Path Results	Path 609 CR	Path 610 N	Path 611 CR	Path 612 CR	Path 613 WP	Path 614 CR	Path 615 CR	Path 616 CR
Heat Rate, Btu/hr	-12329.34	0.0000000	520.9784	1022.537	1064.041	-9.819921	-1820.325	619.5019
HTC, Btu/ft <sup>2</sup> hr°F	3.000	XT 0.0000	N 0.1789	Rn 0.3512	NC 11.04	Ck 1.0000E-03	XT 0.1854	Rn 0.1789

Path Results	Path 617 CR	Path 618 WP	Path 619 CR	Path 620 CR	Path 621 CR	Path 622 CR	Path 623 WP	Path 624 CR
Heat Rate, Btu/hr	1215.912	1265.264	-11.67699	-2164.571	-7768.591	-39.76244	-8405.181	-12329.34
HTC, Btu/ft <sup>2</sup> hr°F	0.3512	NC	11.04	CK 1.0000E-03 XT	0.1854	Rn 0.1954	Rn 1.0000E-03 XT	11.04
Path Results	Path 625 N	Path 626 CR	Path 627 CR	Path 628 WP	Path 629 CR	Path 630 CR	Path 631 CR	Path 632 CR
Heat Rate, Btu/hr	0.0000000	515.4252	1008.259	1047.536	-9.819921	-1820.325	613.4100	1199.934
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1789	Rn 0.3500	NC 11.04	CK 1.0000E-03 XT	0.1854	Rn 0.1789	Rn 0.3500
Path Results	Path 633 WP	Path 634 CR	Path 635 CR	Path 636 CR	Path 637 CR	Path 638 WP	Path 639 CR	Path 640 N
Heat Rate, Btu/hr	1246.677	-11.68674	-2166.378	-10770.77	-54.16669	-12236.67	-21496.38	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	11.04	CK 1.0000E-03 XT	0.1854	Rn 0.1988	Rn 1.0000E-03 XT	11.04	CK 3.000	XT 0.0000
Path Results	Path 641 CR	Path 642 CR	Path 643 N	Path 644 N	Path 645 N	Path 646 N	Path 647 CR	Path 648 CR
Heat Rate, Btu/hr	18.12566	32.09862	0.0000000	0.0000000	0.0000000	0.0000000	18.76864	32.26371
HTC, Btu/ft <sup>2</sup> hr°F	0.1848	Rn 0.3272	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1789	Rn 0.3075
Path Results	Path 649 N	Path 650 N	Path 651 N	Path 652 N	Path 653 CR	Path 654 CR	Path 655 CR	Path 656 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	16.01195	27.53228	0.1966702	-5.0472828E-02
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1789	Rn 0.3076	NC 0.2353	CK 0.2353
Path Results	Path 657 CR	Path 658 CR	Path 659 CR	Path 660 CR	Path 661 CR	Path 662 CR	Path 663 CR	Path 664 CR
Heat Rate, Btu/hr	-15.93807	-27.37102	11.31639	19.50441	0.1387071	-3.6174767E-02	-11.26445	-19.39081
HTC, Btu/ft <sup>2</sup> hr°F	0.1788	Rn 0.3071	NC 0.1789	Rn 0.3083	NC 0.2353	CK 0.2353	CK 0.1788	Rn 0.3074
Path Results	Path 665 CR	Path 666 CR	Path 667 N	Path 668 N	Path 669 N	Path 670 N	Path 671 CR	Path 672 CR
Heat Rate, Btu/hr	15.94309	27.37314	0.0000000	0.0000000	0.0000000	0.0000000	14.50450	24.92235
HTC, Btu/ft <sup>2</sup> hr°F	0.1789	Rn 0.3071	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1788	Rn 0.3073
Path Results	Path 673 N	Path 674 N	Path 675 N	Path 676 N	Path 677 CR	Path 678 CR	Path 679 N	Path 680 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	15.89603	27.27395	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1788	Rn 0.3068	NC 0.0000	N 0.0000
Path Results	Path 681 N	Path 682 N	Path 683 CR	Path 684 CR	Path 685 N	Path 686 N	Path 687 N	Path 688 N
Heat Rate, Btu/hr	0.0000000	0.0000000	18.14487	32.13115	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1848	Rn 0.3273	NC 0.0000	N 0.0000	N 0.0000	N 0.0000
Path Results	Path 689 CR	Path 690 CR	Path 691 WP	Path 692 N	Path 693 N	Path 694 CR	Path 695 CR	Path 696 WP
Heat Rate, Btu/hr	2726.571	6791.995	4759.157	0.0000000	0.0000000	1452.807	3161.749	2307.401
HTC, Btu/ft <sup>2</sup> hr°F	0.1714	Rn 0.4269	NC 1296	CK 0.0000	N 0.0000	N 0.1730	Rn 0.3766	NC 3098
Path Results	Path 697 N	Path 698 N	Path 699 CR	Path 700 CR	Path 701 WP	Path 702 N	Path 703 N	Path 704 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	743.9180	4.363495	374.1292	0.0000000	0.0000000	1094.008
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1705	Rn 1.0000E-03 XT	2409	CK 0.0000	N 0.0000	N 0.1712

Path Results	Path 705 CR	Path 706 WP	Path 707 CR	Path 708 CR	Path 709 WP
Heat Rate, Btu/hr	2728.911	1911.525	821.2213	2020.181	1420.750
MFC, Btu/ft <sup>3</sup> hr	0.4271 MC	3098.	CK 0.1695	Rn 0.4169 MC	3098. CK

(NLOOP(I),I=1,2): 0.00000000E+00 0.00000000E+00

Case 1 after step no. 1876, time (XA) is 2.00000 hrs. 7 rejected CM steps, next time step is 1.576185E-03 hrs.

Node Results	Node 1 AI	Node 2 AI	Node 3 AI	Node 4 N	Node 5 N	Node 6 BI	Node 7 N	Node 8 N
Temperature, eF	111.4448	113.2502	110.0723	-459.6700	-459.6700	77.00000	-459.6700	-459.6700
Density, lbm/ft**3	7.1000002E-02	7.1000002E-02	7.1000002E-02	0.0000000	0.0000000	1.000000	0.0000000	0.0000000
Node Results	Node 9 N	Node 10 N	Node 11 N	Node 12 BI	Node 13 BI	Node 14 N	Node 15 N	Node 16 N
Temperature, eF	-459.6700	-459.6700	-459.6700	105.1000	105.1000	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	1.000000	1.000000	0.0000000	0.0000000	0.0000000
Node Results	Node 17 BI	Node 18 BI	Node 19 N	Node 20 N	Node 21 N	Node 22 N	Node 23 N	Node 24 N
Temperature, eF	105.1000	105.1000	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	1.000000	1.000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 25 N	Node 26 N	Node 27 N	Node 28 N	Node 29 BI	Node 30 BI	Node 31 N	Node 32 N
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	105.1000	105.1000	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	1.000000	1.000000	0.0000000	0.0000000
Node Results	Node 33 N	Node 34 N	Node 35 N	Node 36 N	Node 37 N	Node 38 N	Node 39 N	Node 40 N
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 41 N	Node 42 N	Node 43 N	Node 44 N	Node 45 N	Node 46 N	Node 47 N	Node 48 N
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 49 AI	Node 50 AI	Node 51 AI	Node 52 AI	Node 53 N	Node 54 N	Node 55 BI	Node 56 WT
Temperature, eF	111.6224	111.5647	118.6449	118.7314	-459.6700	-459.6700	162.0000	86.26422
Density, lbm/ft**3	7.1000002E-02	7.1000002E-02	7.1000002E-02	7.1000002E-02	0.0000000	0.0000000	1.000000	125.0000
Node Results	Node 57 WH	Node 58 WT	Node 59 WH	Node 60 WT	Node 61 WH	Node 62 WT	Node 63 WH	Node 64 WT
Temperature, eF	86.53511	86.26609	77.72812	86.26609	77.72812	83.43393	77.00000	86.26609
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	145.0000	145.0000	125.0000
Node Results	Node 65 WH	Node 66 WT	Node 67 WH	Node 68 WT	Node 69 WH	Node 70 WT	Node 71 WH	Node 72 WT
Temperature, eF	77.72812	86.26609	77.72812	86.26393	85.57911	86.24609	77.72812	86.26609
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 73 WH	Node 74 WT	Node 75 WH	Node 76 WT	Node 77 WH	Node 78 WT	Node 79 WH	Node 80 WT
Temperature, eF	77.72812	86.26609	77.72812	91.70396	98.97054	91.70396	96.97054	86.26609
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000



Node Results	Node 81 WH	Node 82 WT	Node 83 WH	Node 84 WT	Node 85 WH	Node 86 WT	Node 87 WH	Node 88 WT
Temperature, °F	77.72812	86.26609	77.72812	86.53693	77.69998	86.53693	77.69998	90.51397
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	145.0000
Node Results	Node 89 WH	Node 90 WT	Node 91 WH	Node 92 WT	Node 93 WH	Node 94 WT	Node 95 WH	Node 96 WT
Temperature, °F	97.68711	90.51397	97.68711	90.25699	89.26562	94.28658	91.61301	90.38529
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	100.0000	100.0000	100.0000
Node Results	Node 97 WH	Node 98 WT	Node 99 WH	Node 100 WT	Node 101 WH	Node 102 WT	Node 103 WH	Node 104 WT
Temperature, °F	86.93351	90.38529	86.93351	90.38529	86.93351	90.38529	86.93351	90.38529
Density, lbm/ft**3	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
Node Results	Node 105 WH	Node 106 WT	Node 107 WH	Node 108 WT	Node 109 WH	Node 110 WT	Node 111 WH	Node 112 WT
Temperature, °F	86.93351	85.58043	77.63492	85.58043	77.63492	89.08186	85.98225	93.04789
Density, lbm/ft**3	100.0000	125.0000	125.0000	125.0000	125.0000	100.0000	100.0000	100.0000
Node Results	Node 113 WH	Node 114 WT	Node 115 WH	Node 116 WT	Node 117 WH	Node 118 WT	Node 119 WH	Node 120 WT
Temperature, °F	90.71714	89.62687	89.26357	89.68577	97.68711	89.68577	97.68711	90.35608
Density, lbm/ft**3	100.000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	125.0000
Node Results	Node 121 WH	Node 122 WT	Node 123 WH	Node 124 WT	Node 125 WH	Node 126 WT	Node 127 WH	Node 128 WT
Temperature, °F	85.04536	85.58043	77.63492	85.58043	77.63492	86.26609	77.72812	86.26609
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 129 WH	Node 130 WT	Node 131 WH	Node 132 WT	Node 133 WH	Node 134 WT	Node 135 WH	Node 136 WT
Temperature, °F	77.72812	86.26609	77.72812	86.26609	77.72812	86.26609	77.72812	86.26609
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 137 WH	Node 138 WT	Node 139 WH	Node 140 WT	Node 141 WH	Node 142 WT	Node 143 WH	Node 144 WT
Temperature, °F	77.72812	86.26609	77.72812	86.53693	77.69998	90.38529	86.93351	90.38529
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	100.0000	100.0000	100.0000
Node Results	Node 145 WH	Node 146 WT	Node 147 WH	Node 148 WT	Node 149 WH	Node 150 WT	Node 151 WH	Node 152 WT
Temperature, °F	86.93351	90.38529	86.93351	90.38529	86.93351	85.58043	77.63492	85.58043
Density, lbm/ft**3	100.0000	100.0000	100.0000	100.0000	100.0000	125.0000	125.0000	125.0000
Node Results	Node 153 WH	Node 154 WT	Node 155 WH	Node 156 WT	Node 157 WH	Node 158 WT	Node 159 WH	Node 160 WT
Temperature, °F	77.63492	89.08186	85.98225	85.58043	77.63492	105.1227	105.1220	102.5964
Density, lbm/ft**3	125.0000	100.0000	100.0000	125.0000	125.0000	490.0000	490.0000	490.0000
Node Results	Node 161 WH	Node 162 N	Node 163 N	Node 164 N	Node 165 N	Node 166 N	Node 167 N	Node 168 N
Temperature, °F	102.5957	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Node Results	Node 169 N	Node 170 N	Node 171 N	Node 172 N	Node 173 N	Node 174 N	Node 175 N	Node 176 WT
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	89.94664
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	145.0000
Node Results	Node 177 WH	Node 178 WT	Node 179 WH	Node 180 WT	Node 181 WH	Node 182 WT	Node 183 WH	Node 184 WT
Temperature, °F	87.77030	89.94540	87.76712	91.48858	90.83539	91.48858	90.83539	90.30470
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 185 WH	Node 186 WT	Node 187 WH	Node 188 WT	Node 189 WH	Node 190 WT	Node 191 WH	Node 192 N
Temperature, °F	88.15603	91.52547	90.82766	89.56823	87.84324	91.36949	90.79795	-459.6700
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	0.0000000
Node Results	Node 193 N	Node 194 N	Node 195 N	Node 196 N	Node 197 N	Node 198 N	Node 199 N	Node 200 N
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 201 AI	Node 202 N	Node 203 AI	Node 204 AI	Node 205 N	Node 206 N	Node 207 AI	Node 208 N
Temperature, °F	107.7478	-459.6700	108.6813	107.7478	-459.6700	-459.6700	107.7291	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	490.0000	490.0000	0.0000000	0.0000000	490.0000	0.0000000
Node Results	Node 209 N	Node 210 AI	Node 211 N	Node 212 AI	Node 213 AI	Node 214 N	Node 215 N	Node 216 AI
Temperature, °F	-459.6700	107.7478	-459.6700	105.8963	107.7366	-459.6700	-459.6700	107.7482
Density, lbm/ft**3	0.0000000	490.0000	0.0000000	490.0000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 217 N	Node 218 N	Node 219 AI	Node 220 N	Node 221 N	Node 222 AI	Node 223 N	Node 224 N
Temperature, °F	-459.6700	-459.6700	107.7437	-459.6700	-459.6700	107.7437	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 225 AI	Node 226 N	Node 227 N	Node 228 AI	Node 229 N	Node 230 N	Node 231 AI	Node 232 N
Temperature, °F	107.7366	-459.6700	-459.6700	108.6817	-459.6700	-459.6700	108.7231	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000
Node Results	Node 233 N	Node 234 AI	Node 235 N	Node 236 N	Node 237 AI	Node 238 N	Node 239 N	Node 240 AI
Temperature, °F	-459.6700	108.6767	-459.6700	-459.6700	105.8963	-459.6700	-459.6700	105.8845
Density, lbm/ft**3	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 241 N	Node 242 N	Node 243 AI	Node 244 N	Node 245 N	Node 246 AI	Node 247 N	Node 248 N
Temperature, °F	-459.6700	-459.6700	105.8915	-459.6700	-459.6700	105.9075	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 249 N	Node 250 N	Node 251 AI	Node 252 WT	Node 253 WH	Node 254 WT	Node 255 WH	Node 256 WT
Temperature, °F	-459.6700	-459.6700	124.1083	117.1529	117.1513	117.3080	117.3064	118.4136
Density, lbm/ft**3	0.0000000	0.0000000	7.1000002E-02	490.0000	490.0000	490.0000	490.0000	490.0000

Node Results	Node 257 WH	Node 258 WT	Node 259 WH	Node 260 WT	Node 261 WH	Node 262 N	Node 263 N	Node 264 AI
Temperature, °F	118.4126	108.3414	108.3365	109.6890	109.6851	-459.6700	-459.6700	120.9325
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	0.0000000	0.0000000	7.1000002E-02
Node Results	Node 265 WT	Node 266 WH	Node 267 WT	Node 268 WH	Node 269 WT	Node 270 WH	Node 271 WT	Node 272 WH
Temperature, °F	114.2619	114.2603	114.3954	114.3937	115.7183	115.7174	106.8445	106.8401
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 273 WT	Node 274 WH	Node 275 N	Node 276 N	Node 277 AI	Node 278 WT	Node 279 WH	Node 280 WT
Temperature, °F	108.0436	108.0402	-459.6700	-459.6700	124.7558	113.7173	113.7125	117.8635
Density, lbm/ft**3	490.0000	490.0000	0.0000000	0.0000000	7.1000002E-02	490.0000	490.0000	490.0000
Node Results	Node 281 WH	Node 282 WT	Node 283 WH	Node 284 WT	Node 285 WH	Node 286 WT	Node 287 WH	Node 288 WT
Temperature, °F	117.8619	117.8635	117.8619	117.5226	117.5207	117.2817	117.2794	117.6099
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 289 WH	Node 290 N	Node 291 WT	Node 292 WH	Node 293 WT	Node 294 WH	Node 295 WT	Node 296 WH
Temperature, °F	117.6079	-459.6700	100.0912	100.0885	105.3692	105.3687	96.28870	96.28814
Density, lbm/ft**3	490.0000	0.0000000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 297 WT	Node 298 WH	Node 299 N	Node 300 N	Node 301 WT	Node 302 WH	Node 303 WT	Node 304 WH
Temperature, °F	110.8151	110.8113	-459.6700	-459.6700	95.61643	91.23710	99.40120	100.8829
Density, lbm/ft**3	490.0000	490.0000	0.0000000	0.0000000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 305 WT	Node 306 WH	Node 307 WT	Node 308 WH	Node 309 WT	Node 310 WH	Node 311 WT	Node 312 WH
Temperature, °F	99.40120	100.8829	99.13503	96.38600	100.3901	97.26320	95.61643	91.33710
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 313 WT	Node 314 WH	Node 315 WT	Node 316 WH	Node 317 WT	Node 318 WH	Node 319 WT	Node 320 WH
Temperature, °F	95.60262	94.00386	93.98996	90.94478	97.36046	100.3044	93.98988	93.97806
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 321 WT	Node 322 WH	Node 323 WT	Node 324 WH	Node 325 WT	Node 326 WH	Node 327 WT	Node 328 WH
Temperature, °F	98.83798	101.5827	89.57467	85.48054	93.98996	90.94478	97.34911	100.3044
Density, lbm/ft**3	125.0000	125.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 329 WT	Node 330 WH	Node 331 WT	Node 332 WH	Node 333 WT	Node 334 WH	Node 335 WT	Node 336 WH
Temperature, °F	93.97799	90.94233	93.99224	95.62232	93.97799	90.94233	89.56208	85.47795
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 337 WT	Node 338 WH	Node 339 WT	Node 340 WH	Node 341 WT	Node 342 WH	Node 343 WT	Node 344 WH
Temperature, °F	98.82172	101.5827	95.63647	91.34243	100.4091	97.26812	99.15404	96.38601
Density, lbm/ft**3	125.0000	125.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000

Node Results	Node 345 WT	Node 346 WH	Node 347 WT	Node 348 WH	Node 349 WT	Node 350 WH	Node 351 WT	Node 352 WH
Temperature, °F	99.42014	100.8829	99.42014	100.8829	98.24837	91.05821	96.96802	93.00229
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	125.0000	125.0000	145.0000	145.0000
Node Results	Node 353 WT	Node 354 WH	Node 355 WT	Node 356 WH	Node 357 WT	Node 358 WH	Node 359 WT	Node 360 WH
Temperature, °F	140.6353	158.9535	140.2341	158.9535	106.8969	108.0911	106.8969	108.0911
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 361 WT	Node 362 WH	Node 363 WT	Node 364 WH	Node 365 WT	Node 366 WH	Node 367 WT	Node 368 WH
Temperature, °F	140.2311	158.9535	106.8873	108.0910	106.8873	108.0910	140.6402	158.9535
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 369 AI	Node 370 N	Node 371 N	Node 372 AI	Node 373 N	Node 374 N	Node 375 AI	Node 376 AI
Temperature, °F	111.7766	-459.6700	-459.6700	110.0582	-459.6700	-459.6700	110.0508	110.0246
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	7.1000002E-02
Node Results	Node 377 AI	Node 378 AI	Node 379 AI	Node 380 AI	Node 381 AI	Node 382 N	Node 383 N	Node 384 AI
Temperature, °F	110.0135	110.0369	110.0107	109.9997	110.0653	-459.6700	-459.6700	110.0046
Density, lbm/ft**3	490.0000	490.0000	7.1000002E-02	490.0000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 385 N	Node 386 N	Node 387 AI	Node 388 N	Node 389 N	Node 390 AI	Node 391 N	Node 392 N
Temperature, °F	-459.6700	-459.6700	110.0130	-459.6700	-459.6700	116.8534	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 393 N	Node 394 N	Node 395 N	Node 396 N	Node 397 N	Node 398 N	Node 399 N	Node 400 N
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 401 N	Node 402 N	Node 403 BI	Node 404 BI	Node 405 BI			
Temperature, °F	-459.6700	-459.6700	122.0000	122.0000	104.0000			
Density, lbm/ft**3	0.0000000	0.0000000	1.000000	1.000000	1.000000			

Path Results	Path 1 CR	Path 2 CR	Path 3 WP	Path 4 CR	Path 5 CR	Path 6 CR	Path 7 CR	Path 8 WP
Heat Rate, Btu/hr	1109.199	3590.335	5048.961	-3884.215	-1183.440	633.8451	2051.615	2316.863
HTC, Btu/ft <sup>2</sup> hr°F	0.1702	Rn 0.5509	NC 4.955	Ck 0.5618	NC 0.1712	Rn 0.1702	Rn 0.5509	NC 5.000
Path Results	Path 9 N	Path 10 N	Path 11 CR	Path 12 CR	Path 13 WP	Path 14 N	Path 15 N	Path 16 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	183.4251	593.7062	670.4706	0.0000000	0.0000000	6585.198
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1702	Rn 0.5509	NC 5.000	Ck 0.0000	N 0.0000	N 0.1689
Path Results	Path 17 CR	Path 18 WP	Path 19 CR	Path 20 CR	Path 21 CR	Path 22 CR	Path 23 WP	Path 24 N
Heat Rate, Btu/hr	22243.97	25817.27	0.0000000	0.0000000	514.2750	1664.597	1879.824	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5707	NC 11.04	Ck 0.0000	0.0000	0.1702	Rn 0.5509	NC 5.000	Ck 0.0000
Path Results	Path 25 N	Path 26 CR	Path 27 CR	Path 28 WP	Path 29 N	Path 30 N	Path 31 CR	Path 32 CR
Heat Rate, Btu/hr	0.0000000	538.2755	1742.278	1967.549	0.0000000	0.0000000	1106.639	3582.067
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1702	Rn 0.5509	NC 5.000	Ck 0.0000	N 0.0000	N 0.1702	Rn 0.5509
Path Results	Path 33 WP	Path 34 CR	Path 35 CR	Path 36 CR	Path 37 CR	Path 38 WP	Path 39 N	Path 40 N
Heat Rate, Btu/hr	4039.836	-3452.554	-1070.455	212.9960	689.4205	778.5606	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	4.955	Ck 0.5459	NC 0.1693	Rn 0.1702	Rn 0.5509	NC 5.000	Ck 0.0000	N 0.0000
Path Results	Path 41 CR	Path 42 CR	Path 43 WP	Path 44 N	Path 45 N	Path 46 CR	Path 47 CR	Path 48 WP
Heat Rate, Btu/hr	195.8534	533.9340	715.8998	0.0000000	0.0000000	1100.550	3562.237	4022.824
HTC, Btu/ft <sup>2</sup> hr°F	0.1702	Rn 0.5509	NC 5.000	Ck 0.0000	N 0.0000	N 0.1702	Rn 0.5509	NC 5.000
Path Results	Path 49 N	Path 50 N	Path 51 CR	Path 52 CR	Path 53 WP	Path 54 CR	Path 55 CR	Path 56 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	391.9998	1154.217	1272.469	-243.6257	-121.9806	448.5841
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1727	Rn 0.5084	NC 4.876	Ck 0.3456	NC 0.1730	Rn 0.1727
Path Results	Path 57 CR	Path 58 WP	Path 59 CR	Path 60 CR	Path 61 CR	Path 62 CR	Path 63 WP	Path 64 N
Heat Rate, Btu/hr	1320.826	1456.148	-278.7925	-139.5882	1074.837	3479.007	3928.833	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5084	NC 4.876	Ck 0.3456	NC 0.1730	Rn 0.1702	Rn 0.5509	NC 5.000	Ck 0.0000
Path Results	Path 65 N	Path 66 CR	Path 67 CR	Path 68 WP	Path 69 N	Path 70 N	Path 71 CR	Path 72 CR
Heat Rate, Btu/hr	0.0000000	447.8486	1449.586	1637.014	0.0000000	0.0000000	687.7054	2257.085
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1702	Rn 0.5509	NC 5.000	Ck 0.0000	N 0.0000	N 0.1712	Rn 0.5618
Path Results	Path 73 WP	Path 74 N	Path 75 N	Path 76 CR	Path 77 CR	Path 78 WP	Path 79 N	Path 80 N
Heat Rate, Btu/hr	2502.201	0.0000000	0.0000000	438.5037	1439.192	1595.486	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000	Ck 0.0000	N 0.0000	N 0.1712	Rn 0.5618	NC 5.000	Ck 0.0000	N 0.0000
Path Results	Path 81 CR	Path 82 CR	Path 83 WP	Path 84 CR	Path 85 CR	Path 86 CR	Path 87 CR	Path 88 WP
Heat Rate, Btu/hr	957.2356	2947.875	3337.938	-663.9642	-311.1685	1238.822	3815.040	4319.845
HTC, Btu/ft <sup>2</sup> hr°F	0.1730	Rn 0.5327	NC 11.04	Ck 0.3680	NC 0.1725	Rn 0.1730	Rn 0.5327	NC 11.04



Path Results	Path 89 CR	Path 90 CR	Path 91 CR	Path 92 CR	Path 93 WP	Path 94 N	Path 95 N	Path 96 CR
Heat Rate, Btu/hr	-859.3058	-402.7037	357.7074	1106.427	1253.985	0.0000000	0.0000000	1693.250
HTC, Btu/ft <sup>2</sup> hr°F	0.3680	NC	Rn 0.1729	Rn 0.5347	NC	11.04	Ck 0.0000	N 0.1747
Path Results	Path 97 CR	Path 98 WP	Path 99 N	Path 100 N	Path 101 CR	Path 102 CR	Path 103 WP	Path 104 N
Heat Rate, Btu/hr	4862.884	3170.197	0.0000000	0.0000000	195.7074	604.0232	396.4029	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5017	NC	2.320	Ck 0.0000	N 0.0000	N 0.1729	Rn 0.5337	NC
Path Results	Path 105 N	Path 106 CR	Path 107 CR	Path 108 WP	Path 109 N	Path 110 N	Path 111 CR	Path 112 CR
Heat Rate, Btu/hr	0.0000000	330.5281	1020.128	669.4804	0.0000000	0.0000000	89.35329	275.7763
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1729	Rn 0.5337	NC	2.320	Ck 0.0000	N 0.0000	N 0.1729
Path Results	Path 113 WP	Path 114 N	Path 115 N	Path 116 CR	Path 117 CR	Path 118 WP	Path 119 N	Path 120 N
Heat Rate, Btu/hr	180.9839	0.0000000	0.0000000	601.7509	1857.219	1218.839	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	2.320	Ck 0.0000	N 0.0000	N 0.1729	Rn 0.5337	NC	2.320	Ck 0.0000
Path Results	Path 121 CR	Path 122 CR	Path 123 WP	Path 124 N	Path 125 N	Path 126 CR	Path 127 CR	Path 128 WP
Heat Rate, Btu/hr	94.49308	291.6395	192.3945	0.0000000	0.0000000	118.1504	381.0642	425.0257
HTC, Btu/ft <sup>2</sup> hr°F	0.1729	Rn 0.5337	NC	2.320	Ck 0.0000	N 0.0000	N 0.1693	Rn 0.5459
Path Results	Path 129 N	Path 130 N	Path 131 CR	Path 132 CR	Path 133 WP	Path 134 N	Path 135 N	Path 136 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	658.3256	2123.263	2368.213	0.0000000	0.0000000	429.9694
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1693	Rn 0.5459	NC	5.000	Ck 0.0000	N 0.0000
Path Results	Path 137 CR	Path 138 WP	Path 139 N	Path 140 N	Path 141 CR	Path 142 CR	Path 143 WP	Path 144 N
Heat Rate, Btu/hr	1305.756	862.2104	0.0000000	0.0000000	1503.101	4215.419	2765.317	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5188	NC	2.320	Ck 0.0000	N 0.0000	N 0.1726	Rn 0.4842	NC
Path Results	Path 145 N	Path 146 CR	Path 147 CR	Path 148 WP	Path 149 N	Path 150 N	Path 151 CR	Path 152 CR
Heat Rate, Btu/hr	0.0000000	314.8200	946.4328	1076.823	0.0000000	0.0000000	1088.663	7256.843
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1711	Rn 0.5143	NC	11.04	Ck 0.0000	N 0.0000	N 0.1712
Path Results	Path 153 WP	Path 154 CR	Path 155 CR	Path 156 CR	Path 157 CR	Path 158 WP	Path 159 CR	Path 160 CR
Heat Rate, Btu/hr	3701.368	-859.3058	-402.7037	323.4888	967.7475	1099.835	-255.3366	-119.6605
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.3680	NC	0.1725	Rn 0.1712	Rn 0.5122	NC	11.04
Path Results	Path 161 CR	Path 162 CR	Path 163 WP	Path 164 N	Path 165 N	Path 166 CR	Path 167 CR	Path 168 WP
Heat Rate, Btu/hr	782.0760	2318.638	2561.765	0.0000000	0.0000000	95.34942	307.5255	343.0032
HTC, Btu/ft <sup>2</sup> hr°F	0.1714	Rn 0.5082	NC	5.000	Ck 0.0000	N 0.0000	N 0.1693	Rn 0.5459
Path Results	Path 169 N	Path 170 N	Path 171 CR	Path 172 CR	Path 173 WP	Path 174 N	Path 175 N	Path 176 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	573.3402	1849.164	2062.493	0.0000000	0.0000000	211.2817
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1693	Rn 0.5459	NC	5.000	Ck 0.0000	N 0.0000



Path Results	Path 177 CR	Path 178 WP	Path 179 N	Path 180 N	Path 181 CR	Path 182 CR	Path 183 WP	Path 184 N
Heat Rate, Btu/hr	683.8718	772.2945	0.0000000	0.0000000	179.5680	581.2217	656.3720	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5509 NC	5.000 Ck	0.0000 N	0.0000 N	0.1702 Rn	0.5509 NC	5.000 Ck	0.0000 N
Path Results	Path 185 N	Path 186 CR	Path 187 CR	Path 188 WP	Path 189 N	Path 190 N	Path 191 CR	Path 192 CR
Heat Rate, Btu/hr	0.0000000	125.5690	406.4390	458.9904	0.0000000	0.0000000	144.8544	468.8614
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1702 Rn	0.5509 NC	5.000 Ck	0.0000 N	0.0000 N	0.1702 Rn	0.5509 NC
Path Results	Path 193 WP	Path 194 N	Path 195 N	Path 196 CR	Path 197 CR	Path 198 WP	Path 199 N	Path 200 N
Heat Rate, Btu/hr	529.4838	0.0000000	0.0000000	439.7059	1423.230	1607.250	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000 Ck	0.0000 N	0.0000 N	0.1702 Rn	0.5509 NC	5.000 Ck	0.0000 N	0.0000 N
Path Results	Path 201 CR	Path 202 CR	Path 203 WP	Path 204 N	Path 205 N	Path 206 CR	Path 207 CR	Path 208 WP
Heat Rate, Btu/hr	431.1347	1395.487	1575.919	0.0000000	0.0000000	179.9966	582.6089	657.9885
HTC, Btu/ft <sup>2</sup> hr°F	0.1702 Rn	0.5509 NC	5.000 Ck	0.0000 N	0.0000 N	0.1702 Rn	0.5509 NC	5.000 Ck
Path Results	Path 209 N	Path 210 N	Path 211 CR	Path 212 CR	Path 213 WP	Path 214 N	Path 215 N	Path 216 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	229.0827	751.8615	833.5123	0.0000000	0.0000000	104.3773
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1712 Rn	0.5618 NC	5.000 Ck	0.0000 N	0.0000 N	0.1729 Rn
Path Results	Path 217 CR	Path 218 WP	Path 219 N	Path 220 N	Path 221 CR	Path 222 CR	Path 223 WP	Path 224 N
Heat Rate, Btu/hr	322.1457	211.4149	0.0000000	0.0000000	175.5436	541.7906	353.5614	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5337 NC	2.320 Ck	0.0000 N	0.0000 N	0.1729 Rn	0.5337 NC	2.320 Ck	0.0000 N
Path Results	Path 225 N	Path 226 CR	Path 227 CR	Path 228 WP	Path 229 N	Path 230 N	Path 231 CR	Path 232 CR
Heat Rate, Btu/hr	0.0000000	363.7391	1122.629	736.7488	0.0000000	0.0000000	98.84214	305.0622
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1729 Rn	0.5337 NC	2.320 Ck	0.0000 N	0.0000 N	0.1729 Rn	0.5337 NC
Path Results	Path 233 WP	Path 234 N	Path 235 N	Path 236 CR	Path 237 CR	Path 238 WP	Path 239 N	Path 240 N
Heat Rate, Btu/hr	200.2035	0.0000000	0.0000000	305.7135	340.9522	380.2861	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	2.320 Ck	0.0000 N	0.0000 N	0.1693 Rn	0.5459 NC	5.000 Ck	0.0000 N	0.0000 N
Path Results	Path 241 CR	Path 242 CR	Path 243 WP	Path 244 N	Path 245 N	Path 246 CR	Path 247 CR	Path 248 WP
Heat Rate, Btu/hr	384.7142	1240.799	1383.943	0.0000000	0.0000000	269.6722	818.9562	540.7691
HTC, Btu/ft <sup>2</sup> hr°F	0.1693 Rn	0.5459 NC	5.000 Ck	0.0000 N	0.0000 N	0.1706 Rn	0.5188 NC	2.320 Ck
Path Results	Path 249 N	Path 250 N	Path 251 CR	Path 252 CR	Path 253 WP	Path 254 N	Path 255 N	Path 256 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	235.8862	760.7914	848.5603	0.0000000	0.0000000	9715.116
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1693 Rn	0.5459 NC	5.000 Ck	0.0000 N	0.0000 N	0.1719 Rn
Path Results	Path 257 CR	Path 258 WP	Path 259 CR	Path 260 CR	Path 261 CR	Path 262 CR	Path 263 WP	Path 264 CR
Heat Rate, Btu/hr	34226.02	36489.22	-62.71435	-10722.24	9672.780	34077.63	36333.79	-62.29500
HTC, Btu/ft <sup>2</sup> hr°F	0.6055 NC	11.05 Ck	1.0000E-03 XT	0.1710 Rn	0.1719 Rn	0.6055 NC	11.05 Ck	1.0000E-03 XT

Path Results	Path 265 CR	Path 266 CR	Path 267 CR	Path 268 WP	Path 269 N	Path 270 N	Path 271 CR	Path 272 CR
Heat Rate, Btu/hr	-10648.79	2012.285	11.66043	1703.305	0.0000000	0.0000000	2003.331	11.60853
HTC, Btu/ft <sup>2</sup> hr°F	0.1709	Rn 0.1726	Rn 1.0000E-03 XT	11.04	Ck 0.0000	N 0.0000	N 0.1726	Rn 1.0000E-03 XT
Path Results	Path 273 WP	Path 274 N	Path 275 N	Path 276 CR	Path 277 CR	Path 278 WP	Path 279 CR	Path 280 CR
Heat Rate, Btu/hr	1698.726	0.0000000	0.0000000	8786.415	31442.97	32860.12	-67.53278	-11780.22
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.0000	N 0.0000	N 0.1729	Rn 0.6187	NC 11.05	Ck 1.0000E-03 XT	0.1744 Rn
Path Results	Path 281 CR	Path 282 CR	Path 283 WP	Path 284 N	Path 285 N	Path 286 CR	Path 287 CR	Path 288 WP
Heat Rate, Btu/hr	6491.218	37.42733	5445.493	0.0000000	0.0000000	7476.559	26054.10	27207.96
HTC, Btu/ft <sup>2</sup> hr°F	0.1734	Rn 1.0000E-03 XT	11.04	Ck 0.0000	N 0.0000	N 0.1711	Rn 0.5961	NC 11.05 Ck
Path Results	Path 289 CR	Path 290 CR	Path 291 CR	Path 292 CR	Path 293 WP	Path 294 N	Path 295 N	Path 296 CR
Heat Rate, Btu/hr	-65.84127	-11478.46	5271.061	30.66703	4392.368	0.0000000	0.0000000	31.96472
HTC, Btu/ft <sup>2</sup> hr°F	1.0000E-03 XT	0.1743	Rn 0.1719	Rn 1.0000E-03 XT	11.04	Ck 0.0000	N 0.0000	N 0.1801 Rn
Path Results	Path 297 CR	Path 298 N	Path 299 N	Path 300 CR	Path 301 CR	Path 302 CR	Path 303 CR	Path 304 N
Heat Rate, Btu/hr	51.90755	0.0000000	0.0000000	-39.78935	-68.79257	31.96472	51.90755	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2925	NC 0.0000	N 0.0000	N 0.1814	Rn 0.3137	NC 0.1801	Rn 0.2925	NC 0.0000 N
Path Results	Path 305 N	Path 306 N	Path 307 N	Path 308 CR	Path 309 CR	Path 310 N	Path 311 N	Path 312 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	16.53115	26.89114	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1801	Rn 0.2930	NC 0.0000	N 0.0000	N 0.0000 N
Path Results	Path 313 N	Path 314 CR	Path 315 CR	Path 316 N	Path 317 N	Path 318 CR	Path 319 CR	Path 320 CR
Heat Rate, Btu/hr	0.0000000	31.96472	51.90755	0.0000000	0.0000000	-35.80091	-61.03930	14.36069
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1801	Rn 0.2925	NC 0.0000	N 0.0000	N 0.1786	Rn 0.3045	NC 0.1801 Rn
Path Results	Path 321 CR	Path 322 N	Path 323 N	Path 324 N	Path 325 N	Path 326 CR	Path 327 CR	Path 328 N
Heat Rate, Btu/hr	23.34444	0.0000000	0.0000000	0.0000000	0.0000000	11.91894	19.35450	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2928	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1801	Rn 0.2925	NC 0.0000 N
Path Results	Path 329 N	Path 330 N	Path 331 N	Path 332 CR	Path 333 CR	Path 334 N	Path 335 N	Path 336 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	33.99950	55.23245	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1801	Rn 0.2926	NC 0.0000	N 0.0000	N 0.0000 N
Path Results	Path 337 N	Path 338 CR	Path 339 CR	Path 340 N	Path 341 N	Path 342 N	Path 343 N	Path 344 CR
Heat Rate, Btu/hr	0.0000000	33.99950	55.23245	0.0000000	0.0000000	0.0000000	0.0000000	14.36069
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1801	Rn 0.2926	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1801 Rn
Path Results	Path 345 CR	Path 346 N	Path 347 N	Path 348 N	Path 349 N	Path 350 CR	Path 351 CR	Path 352 N
Heat Rate, Btu/hr	23.34444	0.0000000	0.0000000	0.0000000	0.0000000	14.83671	25.65063	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2928	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1814	Rn 0.3137	NC 0.0000 N

Path Results	Path 353 N	Path 354 N	Path 355 N	Path 356 CR	Path 357 CR	Path 358 N	Path 359 N	Path 360 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	16.68263	28.75670	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1815	Rn 0.3128	NC 0.0070	N 0.0000	N 0.0000
Path Results	Path 361 N	Path 362 CR	Path 363 CR	Path 364 N	Path 365 N	Path 366 N	Path 367 N	Path 368 CR
Heat Rate, Btu/hr	0.0000000	42.31830	73.19012	0.0000000	0.0000000	0.0000000	0.0000000	35.80091
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1814	Rn 0.3138	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1786
Path Results	Path 369 CR	Path 370 N	Path 371 N	Path 372 N	Path 373 N	Path 374 CR	Path 375 CR	Path 376 N
Heat Rate, Btu/hr	61.03930	0.0000000	0.0000000	0.0000000	0.0000000	16.08071	27.44349	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.3045	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1786	Rn 0.3048	NC 0.0000
Path Results	Path 377 N	Path 378 N	Path 379 N	Path 380 CR	Path 381 CR	Path 382 N	Path 383 N	Path 384 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	14.67954	24.89002	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1786	Rn 0.3029	NC 0.0000	N 0.0000	N 0.0000
Path Results	Path 385 N	Path 386 CR	Path 387 CR	Path 388 N	Path 389 N	Path 390 N	Path 391 N	Path 392 CR
Heat Rate, Btu/hr	0.0000000	15.47270	26.35633	0.0000000	0.0000000	0.0000000	0.0000000	15947.04
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1786	Rn 0.3042	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.6026
Path Results	Path 393 CR	Path 394 WP	Path 395 CR	Path 396 CR	Path 397 CR	Path 398 CR	Path 399 WP	Path 400 CR
Heat Rate, Btu/hr	9536.629	16328.32	4419.729	2753.570	2484.141	1706.689	2752.703	858.4038
HTC, Btu/ft <sup>2</sup> hr°F	0.3403	NC 2709.	Ck 0.2977	NC 0.1855	Rn 0.6028	Rn 0.4141	NC 2709.	Ck 0.3492
Path Results	Path 401 CR	Path 402 CR	Path 403 CR	Path 404 CR	Path 405 WP	Path 406 CR	Path 407 WP	Path 408 CR
Heat Rate, Btu/hr	456.1568	47053.28	6093.374	3400.188	4746.906	6655.207	3327.617	35195.99
HTC, Btu/ft <sup>2</sup> hr°F	0.1856	Rn 64.68	NC 0.6045	Rn 0.3373	NC 2709.	Ck 0.7000	XT 1116.	Ck 0.7000
Path Results	Path 409 WP	Path 410 N	Path 411 N	Path 412 CR	Path 413 CR	Path 414 WP	Path 415 CR	Path 416 CR
Heat Rate, Btu/hr	17598.18	0.0000000	0.0000000	14956.61	8961.627	15816.74	4825.181	2890.355
HTC, Btu/ft <sup>2</sup> hr°F	1296.	Ck 0.0000	N 0.0000	N 0.5932	Rn 0.3554	NC 2709.	Ck 0.3048	NC 0.1826
Path Results	Path 417 CR	Path 418 CR	Path 419 WP	Path 420 CR	Path 421 CR	Path 422 CR	Path 423 CR	Path 424 CR
Heat Rate, Btu/hr	434.257	1539.246	2557.881	887.6224	454.6262	38437.18	4346.344	2391.865
HTC, Btu/ft <sup>2</sup> hr°F	0.5934	Rn 0.4088	NC 2709.	Ck 0.3566	NC 0.1826	Rn 55.30	NC 0.5954	Rn 0.3277
Path Results	Path 425 WP	Path 426 CR	Path 427 WP	Path 428 CR	Path 429 WP	Path 430 N	Path 431 N	Path 432 CR
Heat Rate, Btu/hr	3369.195	5650.674	2825.349	30305.54	15152.93	0.0000000	0.0000000	8281.434
HTC, Btu/ft <sup>2</sup> hr°F	2709.	Ck 0.7000	XT 1116.	Ck 0.7000	XT 1296.	Ck 0.0000	N 0.0000	N 0.5983
Path Results	Path 433 CR	Path 434 WP	Path 435 CR	Path 436 CR	Path 437 CR	Path 438 CR	Path 439 WP	Path 440 CR
Heat Rate, Btu/hr	5809.327	7659.669	707.9370	520.3343	6497.374	3860.322	7859.308	3510.453
HTC, Btu/ft <sup>2</sup> hr°F	0.4197	NC 1296.	Ck 0.2489	NC 0.1830	Rn 0.6047	Rn 0.3593	NC 3098.	Ck 0.3509

Path Results	Path 441 CR	Path 442 CR	Path 443 CR	Path 444 WP	Path 445 CR	Path 446 CR	Path 447 CR	Path 448 CR
Heat Rate, Btu/hr	1850.556	566.8011	336.7567	685.6100	306.2358	161.4340	1621.272	979.5868
HTC, Btu/ft <sup>2</sup> hr°F	0.1850	Rn 0.6047	Rn 0.3593	NC 3098.	Ck 0.3509	NC 0.1850	Rn 0.6042	Rn 0.3650
Path Results	Path 449 WP	Path 450 CR	Path 451 CR	Path 452 CR	Path 453 CR	Path 454 WP	Path 455 CR	Path 456 CR
Heat Rate, Btu/hr	1897.125	776.8350	436.5917	2991.951	2117.263	3673.415	1523.104	716.4559
HTC, Btu/ft <sup>2</sup> hr°F	2709.	Ck 0.3446	NC 0.1848	Rn 0.6038	Rn 0.4273	NC 2409.	Ck 0.3937	NC 0.1847
Path Results	Path 457 CR	Path 458 CR	Path 459 WP	Path 460 CR	Path 461 CR	Path 462 CR	Path 463 CR	Path 464 WP
Heat Rate, Btu/hr	144.2283	100.4773	182.6409	82.52808	38.05147	55115.43	23664.41	11832.58
HTC, Btu/ft <sup>2</sup> hr°F	0.6043	Rn 0.4010	NC 2709.	Ck 0.4009	NC 0.1849	Rn 292.8	NC 0.7000	NT 1296.
Path Results	Path 465 N	Path 466 N	Path 467 N	Path 468 N	Path 469 N	Path 470 N	Path 471 CR	Path 472 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	1236.602	3719.020
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1779	Rn 0.5349
Path Results	Path 473 WP	Path 474 N	Path 475 N	Path 476 CR	Path 477 CR	Path 478 WP	Path 479 CR	Path 480 CR
Heat Rate, Btu/hr	4503.955	0.0000000	0.0000000	824.7995	2314.870	2827.934	-307.3962	-175.0123
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.0000	N 0.0000	N 0.1796	Rn 0.5042	NC 11.04	Ck 0.3055	NC 0.1739
Path Results	Path 481 CR	Path 482 CR	Path 483 WP	Path 484 CR	Path 485 CR	Path 486 CR	Path 487 CR	Path 488 WP
Heat Rate, Btu/hr	1043.617	2929.000	3578.177	-388.9476	-221.6426	302.2408	852.7104	1041.838
HTC, Btu/ft <sup>2</sup> hr°F	0.1796	Rn 0.5042	NC 11.04	Ck 0.3055	NC 0.1739	Rn 0.1795	Rn 0.5065	NC 11.04
Path Results	Path 489 N	Path 490 N	Path 491 CR	Path 492 CR	Path 493 WP	Path 494 N	Path 495 N	Path 496 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1673.085	4602.729	5663.376	0.0000000	0.0000000	2160.265
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1801	Rn 0.4955	NC 11.04	Ck 0.0000	N 0.0000	N 0.1779
Path Results	Path 497 CR	Path 498 WP	Path 499 N	Path 500 N	Path 501 CR	Path 502 CR	Path 503 WP	Path 504 CR
Heat Rate, Btu/hr	6496.890	7868.122	0.0000000	0.0000000	1202.053	3615.960	4387.596	-2530.497
HTC, Btu/ft <sup>2</sup> hr°F	0.5349	NC 11.04	Ck 0.0000	N 0.0000	N 0.1779	Rn 0.5350	NC 11.04	Ck 0.4897
Path Results	Path 505 CR	Path 506 CR	Path 507 CR	Path 508 WP	Path 509 N	Path 510 N	Path 511 CR	Path 512 CR
Heat Rate, Btu/hr	-898.1509	771.0359	2173.001	2674.241	0.0000000	0.0000000	1682.584	4382.253
HTC, Btu/ft <sup>2</sup> hr°F	0.1738	Rn 0.1738	Rn 0.4898	NC 11.04	Ck 0.0000	N 0.0000	N 0.1754	Rn 0.4567
Path Results	Path 513 WP	Path 514 CR	Path 515 CR	Path 516 CR	Path 517 CR	Path 518 WP	Path 519 CR	Path 520 CR
Heat Rate, Btu/hr	5439.104	-727.2193	-430.5347	1779.273	5014.514	6171.296	-4997.177	-1774.315
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.2925	NC 0.1732	Rn 0.1738	Rn 0.4898	NC 11.04	Ck 0.4894	NC 0.1738
Path Results	Path 521 CR	Path 522 CR	Path 523 WP	Path 524 CR	Path 525 CR	Path 526 CR	Path 527 CR	Path 528 WP
Heat Rate, Btu/hr	343.6555	859.9609	1036.892	-154.5432	-93.59130	201.4952	618.4994	748.8578
HTC, Btu/ft <sup>2</sup> hr°F	0.1760	Rn 0.4405	NC 4.876	Ck 0.2877	NC 0.1743	Rn 0.1718	Rn 0.5273	NC 11.04

Path Results	Path 529 N	Path 530 N	Path 531 CR	Path 532 CR	Path 533 WP	Path 534 N	Path 535 N	Path 536 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1459.942	4134.538	5063.627	0.0000000	0.0000000	1676.808
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1738	Rn 0.4898	NC 11.04	Ck 0.0000	N 0.0000	N 0.1753
Path Results	Path 537 CR	Path 538 WP	Path 539 CR	Path 540 CR	Path 541 CR	Path 542 CR	Path 543 WP	Path 544 N
Heat Rate, Btu/hr	4363.330	5416.858	-727.2193	-430.5347	785.7016	2212.852	2723.874	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4562	MC 11.04	Ck 0.2925	NC 0.1732	Rn 0.1738	Rn 0.4894	NC 11.04	Ck 0.0000
Path Results	Path 545 N	Path 546 CR	Path 547 CR	Path 548 WP	Path 549 CR	Path 550 CR	Path 551 CR	Path 552 CR
Heat Rate, Btu/hr	0.0000000	895.6366	2521.703	3095.354	-3629.921	-1205.883	1552.762	4373.201
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1738	Rn 0.4893	NC 11.04	Ck 0.5356	NC 0.1779	Rn 0.1738	Rn 0.4894
Path Results	Path 553 WP	Path 554 N	Path 555 N	Path 556 CR	Path 557 CR	Path 558 WP	Path 559 N	Path 560 N
Heat Rate, Btu/hr	5383.120	0.0000000	0.0000000	222.2076	681.7461	825.5694	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.0000	N 0.0000	N 0.1738	Rn 0.5270	NC 11.04	Ck 0.0000	N 0.0000
Path Results	Path 561 CR	Path 562 CR	Path 563 WP	Path 564 CR	Path 565 CR	Path 566 CR	Path 567 CR	Path 568 WP
Heat Rate, Btu/hr	260.8371	652.1467	786.4946	-117.7038	-71.28139	2167.121	6521.860	7896.571
HTC, Btu/ft <sup>2</sup> hr°F	0.1760	Rn 0.4400	NC 4.876	Ck 0.2877	NC 0.1743	Rn 0.1779	Rn 0.5254	NC 11.04
Path Results	Path 569 N	Path 570 N	Path 571 CR	Path 572 CR	Path 573 WP	Path 574 N	Path 575 N	Path 576 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1679.753	4625.422	5689.587	0.0000000	0.0000000	303.3726
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1801	Rn 0.4961	NC 11.04	Ck 0.0000	N 0.0000	N 0.1796
Path Results	Path 577 CR	Path 578 WP	Path 579 N	Path 580 N	Path 581 CR	Path 582 CR	Path 583 WP	Path 584 CR
Heat Rate, Btu/hr	856.6399	1046.396	0.0000000	0.0000000	1047.578	2942.697	3594.077	-388.9476
HTC, Btu/ft <sup>2</sup> hr°F	0.5070	NC 11.04	Ck 0.0000	N 0.0000	N 0.1797	Rn 0.5047	NC 11.04	Ck 0.3055
Path Results	Path 585 CR	Path 586 CR	Path 587 CR	Path 588 WP	Path 589 CR	Path 590 CR	Path 591 CR	Path 592 CR
Heat Rate, Btu/hr	-221.4426	290.4347	815.8454	996.4367	-107.8334	-61.39366	876.5888	2518.400
HTC, Btu/ft <sup>2</sup> hr°F	0.1739	Rn 0.1797	Rn 0.5047	NC 11.04	Ck 0.3055	NC 0.1739	Rn 0.1791	Rn 0.5147
Path Results	Path 593 WP	Path 594 N	Path 595 N	Path 596 CR	Path 597 CR	Path 598 WP	Path 599 N	Path 600 N
Heat Rate, Btu/hr	3017.489	0.0000000	0.0000000	846.6790	2489.922	3027.307	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000	Ck 0.0000	N 0.0000	N 0.1785	Rn 0.5251	NC 11.04	Ck 0.0000	N 0.0000
Path Results	Path 601 CR	Path 602 CR	Path 603 WP	Path 604 CR	Path 605 N	Path 606 CR	Path 607 CR	Path 608 WP
Heat Rate, Btu/hr	-10774.39	-53.89863	-11890.73	-22401.20	0.0000000	-7572.619	-38.59717	-8043.135
HTC, Btu/ft <sup>2</sup> hr°F	0.1999	Rn 1.0000E-03	XT 11.04	Ck 3.000	XT 0.0000	N 0.1962	Rn 1.0000E-03	XT 11.04
Path Results	Path 609 CR	Path 610 N	Path 611 CR	Path 612 CR	Path 613 WP	Path 614 CR	Path 615 CR	Path 616 CR
Heat Rate, Btu/hr	-12325.34	0.0000000	599.3766	1224.264	1464.394	-9.811361	-1818.796	712.7262
HTC, Btu/ft <sup>2</sup> hr°F	3.000	XT 0.0000	N 0.1798	Rn 0.3673	NC 11.04	Ck 1.0000E-03	XT 0.1854	Rn 0.1798

Path Results	Path 617 CR	Path 618 WP	Path 619 CR	Path 620 CR	Path 621 CR	Path 622 CR	Path 623 WP	Path 624 CR
Heat Rate, Btu/hr	1455.788	1741.330	-11.66681	-2162.752	-7585.934	-30.67095	-8055.104	-12329.34
MTC, Btu/ft <sup>2</sup> hr	0.3673	NC	11.04	CK 1.0000E-03 XT	0.1854	Rn 0.1962	Rn 1.0000E-03 XT	11.04
Path Results	Path 625 N	Path 626 CR	Path 627 CR	Path 628 WP	Path 629 CR	Path 630 CR	Path 631 CR	Path 632 CR
Heat Rate, Btu/hr	0.0000000	593.1764	1207.735	1444.053	-9.811399	-1818.802	705.9421	1437.331
MTC, Btu/ft <sup>2</sup> hr	0.0000	N 0.1798	Rn 0.3660	NC 11.04	CK 1.0000E-03 XT	0.1854	Rn 0.1798	Rn 0.3660
Path Results	Path 633 WP	Path 634 CR	Path 635 CR	Path 636 CR	Path 637 CR	Path 638 WP	Path 639 CR	Path 640 N
Heat Rate, Btu/hr	1718.575	-11.67659	-2164.566	-10303.17	-51.52951	-11378.05	-21496.38	0.0000000
MTC, Btu/ft <sup>2</sup> hr	11.04	CK 1.0000E-03 XT	0.1854	Rn 0.1999	Rn 1.0000E-03 XT	11.04	CK 3.000	XT 0.0000
Path Results	Path 641 CR	Path 642 CR	Path 643 N	Path 644 N	Path 645 N	Path 646 N	Path 647 CR	Path 648 CR
Heat Rate, Btu/hr	6.636276	8.245819	0.0000000	0.0000000	0.0000000	0.0000000	6.920169	8.405566
MTC, Btu/ft <sup>2</sup> hr	0.1879	Rn 0.2335	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1813	Rn 0.2202
Path Results	Path 649 N	Path 650 N	Path 651 N	Path 652 N	Path 653 CR	Path 654 CR	Path 655 CK	Path 656 CK
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	5.926629	7.210318	0.1281851	5.4201752E-02
MTC, Btu/ft <sup>2</sup> hr	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1813	Rn 0.2206	NC 0.2353	CK 0.2353
Path Results	Path 657 CR	Path 658 CR	Path 659 CR	Path 660 CR	Path 661 CK	Path 662 CK	Path 663 CR	Path 664 CR
Heat Rate, Btu/hr	-5.848407	-7.086060	4.196719	5.120545	9.0258877E-02	3.7798489E-02	-4.141693	-5.033116
MTC, Btu/ft <sup>2</sup> hr	0.1813	Rn 0.2196	NC 0.1813	Rn 0.2212	NC 0.2353	CK 0.2353	CK 0.1813	Rn 0.2203
Path Results	Path 665 CR	Path 666 CR	Path 667 N	Path 668 N	Path 669 N	Path 670 N	Path 671 CR	Path 672 CR
Heat Rate, Btu/hr	5.872547	7.122262	0.0000000	0.0000000	0.0000000	0.0000000	5.344512	6.487906
MTC, Btu/ft <sup>2</sup> hr	0.1813	Rn 0.2199	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1813	Rn 0.2200
Path Results	Path 673 N	Path 674 N	Path 675 N	Path 676 N	Path 677 CR	Path 678 CR	Path 679 N	Path 680 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	5.850374	7.089244	0.0000000	0.0000000
MTC, Btu/ft <sup>2</sup> hr	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1813	Rn 0.2196	NC 0.0000	N 0.0000
Path Results	Path 681 N	Path 682 N	Path 683 CR	Path 684 CR	Path 685 N	Path 686 N	Path 687 N	Path 688 N
Heat Rate, Btu/hr	0.0000000	0.0000000	6.673570	8.302817	0.0000000	0.0000000	0.0000000	0.0000000
MTC, Btu/ft <sup>2</sup> hr	0.0000	N 0.0000	N 0.1880	Rn 0.2339	NC 0.0000	N 0.0000	N 0.0000	N 0.0000
Path Results	Path 689 CR	Path 690 CR	Path 691 WP	Path 692 N	Path 693 N	Path 694 CR	Path 695 CR	Path 696 WP
Heat Rate, Btu/hr	2743.907	6583.953	4664.040	0.0000000	0.0000000	1148.469	2211.011	1679.894
MTC, Btu/ft <sup>2</sup> hr	0.1765	Rn 0.4236	NC 1296.	CK 0.0000	N 0.0000	N 0.1790	Rn 0.3446	NC 3098.
Path Results	Path 697 N	Path 698 N	Path 699 CR	Path 700 CR	Path 701 WP	Path 702 N	Path 703 N	Path 704 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	852.9442	4.880262	428.9086	0.0000000	0.0000000	802.0268
MTC, Btu/ft <sup>2</sup> hr	0.0000	N 0.0000	N 0.1748	Rn 1.0000E-03 XT	2409.	CK 0.0000	N 0.0000	N 0.1797



Path Results	Path 704 CR	Path 706 WP	Path 707 CR	Path 708 CR	Path 709 WP
Heat Rate, Btu/hr	1692.641	1247.361	592.9974	1235.962	914.5005
HTC, Btu/ft <sup>2</sup> hr°F	0.3793	h <sub>c</sub> 3098.	Ck 0.1771	Rn 0.3690	NC 3098. CK

(MLDOP(I),I=1,2): 0.00000000E+00 0.00000000E+00

Case 1 after step no. 2786, time (XA) is 4.00000 hrs. 9 rejected CM steps, next time step is 3.154147E-03 hrs.

Node Results	Node 1 AI	Node 2 AI	Node 3 AI	Node 4 N	Node 5 N	Node 6 BI	Node 7 N	Node 8 N
Temperature, eF	119.2229	124.3564	119.7203	-459.6700	-459.6700	77.00000	-459.6700	-459.6700
Density, lbm/ft**3	7.1000002E-02	7.1000002E-02	7.1000002E-02	0.0000000	0.0000000	1.000000	0.0000000	0.0000000
Node Results	Node 9 N	Node 10 N	Node 11 N	Node 12 BI	Node 13 BI	Node 14 N	Node 15 N	Node 16 N
Temperature, eF	-459.6700	-459.6700	-459.6700	105.1000	105.1000	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	1.000000	1.000000	0.0000000	0.0000000	0.0000000
Node Results	Node 17 BI	Node 18 BI	Node 19 N	Node 20 N	Node 21 N	Node 22 N	Node 23 N	Node 24 N
Temperature, eF	105.1000	105.1000	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	1.000000	1.000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 25 N	Node 26 N	Node 27 N	Node 28 N	Node 29 BI	Node 30 LI	Node 31 N	Node 32 N
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	105.1000	105.1000	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	1.000000	1.000000	0.0000000	0.0000000
Node Results	Node 33 N	Node 34 N	Node 35 N	Node 36 N	Node 37 N	Node 38 N	Node 39 N	Node 40 N
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 41 N	Node 42 N	Node 43 N	Node 44 N	Node 45 N	Node 46 N	Node 47 N	Node 48 N
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 49 AI	Node 50 AI	Node 51 AI	Node 52 AI	Node 53 N	Node 54 N	Node 55 BI	Node 56 WT
Temperature, eF	113.6350	113.5705	121.3991	121.4457	-459.6700	-459.6700	162.0000	91.88453
Density, lbm/ft**3	7.1000002E-02	7.1000002E-02	7.1000002E-02	7.1000002E-02	0.0000000	0.0000000	1.000000	125.0000
Node Results	Node 57 WH	Node 58 WT	Node 59 WH	Node 60 WT	Node 61 WH	Node 62 WT	Node 63 WH	Node 64 WT
Temperature, eF	93.46609	91.88453	80.62888	91.88453	80.62888	87.61055	77.00000	91.88453
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	145.0000	145.0000	125.0000
Node Results	Node 65 WH	Node 66 WT	Node 67 WH	Node 68 WT	Node 69 WH	Node 70 WT	Node 71 WH	Node 72 WT
Temperature, eF	80.62888	91.88453	80.62888	91.86208	91.66962	91.88453	80.62888	91.88453
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 73 WH	Node 74 WT	Node 75 WH	Node 76 WT	Node 77 WH	Node 78 WT	Node 79 WH	Node 80 WT
Temperature, eF	80.62888	91.88453	80.62888	96.88763	98.97054	96.88763	98.97054	91.88453
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000

Node Results	Node 81 WH	Node 82 WT	Node 83 WH	Node 84 WT	Node 85 WH	Node 86 WT	Node 87 WH	Node 88 WT
Temperature, °F	80.62888	91.88453	80.62888	93.47323	80.73173	93.47323	80.73173	95.29203
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	145.0000
Node Results	Node 89 WH	Node 90 WT	Node 91 WH	Node 92 WT	Node 93 WH	Node 94 WT	Node 95 WH	Node 96 WT
Temperature, °F	97.68711	95.29203	97.68711	95.03397	88.75310	105.0229	102.1402	102.9338
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	100.0000	100.0000	100.0000
Node Results	Node 97 WH	Node 98 WT	Node 99 WH	Node 100 WT	Node 101 WH	Node 102 WT	Node 103 WH	Node 104 WT
Temperature, °F	99.62919	102.9338	99.62919	102.9338	99.62919	102.9338	99.62919	102.9338
Density, lbm/ft**3	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
Node Results	Node 105 WH	Node 106 WT	Node 107 WH	Node 108 WT	Node 109 WH	Node 110 WT	Node 111 WH	Node 112 WT
Temperature, °F	99.62919	91.66438	80.35632	91.66438	80.35632	100.2293	97.30155	102.3873
Density, lbm/ft**3	100.0000	125.0000	125.0000	125.0000	125.0000	100.0000	100.0000	100.0000
Node Results	Node 113 WH	Node 114 WT	Node 115 WH	Node 116 WT	Node 117 WH	Node 118 WT	Node 119 WH	Node 120 WT
Temperature, °F	99.88192	93.78072	88.74861	94.04152	97.68711	94.04152	97.68711	95.78766
Density, lbm/ft**3	100.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	125.0000
Node Results	Node 121 WH	Node 122 WT	Node 123 WH	Node 124 WT	Node 125 WH	Node 126 WT	Node 127 WH	Node 128 WT
Temperature, °F	56.84908	91.66438	80.35632	91.66438	80.35632	91.88453	80.62888	91.88453
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 129 WH	Node 130 WT	Node 131 WH	Node 132 WT	Node 133 WH	Node 134 WT	Node 135 WH	Node 136 WT
Temperature, °F	80.62888	91.88453	80.62888	91.88453	80.62888	91.88453	80.62888	91.88453
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 137 WH	Node 138 WT	Node 139 WH	Node 140 WT	Node 141 WH	Node 142 WT	Node 143 WH	Node 144 WT
Temperature, °F	80.62888	91.88453	80.62888	93.47323	80.73173	102.9338	99.62919	102.9338
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	100.0000	100.0000	100.0000
Node Results	Node 145 WH	Node 146 WT	Node 147 WH	Node 148 WT	Node 149 WH	Node 150 WT	Node 151 WH	Node 152 WT
Temperature, °F	99.62919	102.9338	99.62919	102.9338	99.62919	91.66438	80.35632	91.66438
Density, lbm/ft**3	100.0000	100.0000	100.0000	100.0000	100.0000	125.0000	125.0000	125.0000
Node Results	Node 153 WH	Node 154 WT	Node 155 WH	Node 156 WT	Node 157 WH	Node 158 WT	Node 159 WH	Node 160 WT
Temperature, °F	80.35632	100.2293	97.30155	91.66438	80.35632	118.8684	118.8679	114.7754
Density, lbm/ft**3	125.0000	100.0000	100.0000	125.0000	125.0000	490.0000	490.0000	490.0000
Node Results	Node 161 WH	Node 162 N	Node 163 N	Node 164 N	Node 165 N	Node 166 N	Node 167 N	Node 168 N
Temperature, °F	114.7750	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Node Results	Node 169 N	Node 170 N	Node 171 N	Node 172 N	Node 173 N	Node 174 N	Node 175 N	Node 176 WT
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	95.99544
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	145.0000
Node Results	Node 177 WH	Node 178 WT	Node 179 WH	Node 180 WT	Node 181 WH	Node 182 WT	Node 183 WH	Node 184 WT
Temperature, °F	93.31829	95.99227	93.31262	92.54672	91.35460	92.54672	91.35460	97.65426
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 185 WH	Node 186 WT	Node 187 WH	Node 188 WT	Node 189 WH	Node 190 WT	Node 191 WH	Node 192 N
Temperature, °F	94.58916	92.80834	91.40373	96.08149	93.61352	92.47492	91.27819	-459.6700
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	0.0000000
Node Results	Node 193 N	Node 194 N	Node 195 N	Node 196 N	Node 197 N	Node 198 N	Node 199 N	Node 200 N
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 201 AI	Node 202 N	Node 203 AI	Node 204 AI	Node 205 N	Node 206 N	Node 207 AI	Node 208 N
Temperature, °F	116.8199	-459.6700	121.1285	116.8199	-459.6700	-459.6700	116.8097	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	490.0000	490.0000	0.0000000	0.0000000	490.0000	0.0000000
Node Results	Node 209 N	Node 210 AI	Node 211 N	Node 212 AI	Node 213 AI	Node 214 N	Node 215 N	Node 216 AI
Temperature, °F	-459.6700	116.8199	-459.6700	116.8291	116.8138	-459.6700	-459.6700	116.8201
Density, lbm/ft**3	0.0000000	490.0000	0.0000000	490.0000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 217 N	Node 218 N	Node 219 AI	Node 220 N	Node 221 N	Node 222 AI	Node 223 N	Node 224 N
Temperature, °F	-459.6700	-459.6700	116.8177	-459.6700	-459.6700	116.8177	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 225 AI	Node 226 N	Node 227 N	Node 228 AI	Node 229 N	Node 230 N	Node 231 AI	Node 232 N
Temperature, °F	116.8138	-459.6700	-459.6700	121.1287	-459.6700	-459.6700	121.1238	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000
Node Results	Node 233 N	Node 234 AI	Node 235 N	Node 236 N	Node 237 AI	Node 238 N	Node 239 N	Node 240 AI
Temperature, °F	-459.6700	121.1256	-459.6700	-459.6700	116.8291	-459.6700	-459.6700	116.8219
Density, lbm/ft**3	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 241 N	Node 242 N	Node 243 AI	Node 244 N	Node 245 N	Node 246 AI	Node 247 N	Node 248 N
Temperature, °F	-459.6700	-459.6700	116.8391	-459.6700	-459.6700	116.8359	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 249 N	Node 250 N	Node 251 AI	Node 252 WT	Node 253 WH	Node 254 WT	Node 255 WH	Node 256 WT
Temperature, °F	-459.6700	-459.6700	136.8616	130.3320	130.3302	130.3629	130.3609	133.0721
Density, lbm/ft**3	0.0000000	0.0000000	7.1000002E-02	490.0000	490.0000	490.0000	490.0000	490.0000

Node Results	Node 257 WH	Node 258 WT	Node 259 WH	Node 260 WT	Node 261 WH	Node 262 N	Node 263 N	Node 264 AI
Temperature, °F	133.0715	123.0477	123.0433	124.8712	124.8680	-459.6700	-459.6700	132.2347
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	0.0000000	0.0000000	7.1000002E-02
Node Results	Node 265 WT	Node 266 WH	Node 267 WT	Node 268 WH	Node 269 WT	Node 270 WH	Node 271 WT	Node 272 WH
Temperature, °F	125.8949	125.8931	125.9104	125.9085	128.7929	128.7923	119.9567	119.9528
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 273 WT	Node 274 WH	Node 275 N	Node 276 N	Node 277 AI	Node 278 WT	Node 279 WH	Node 280 WT
Temperature, °F	121.5811	121.5783	-459.6700	-459.6700	134.1785	125.5513	125.5466	127.4244
Density, lbm/ft**3	490.0000	490.0000	0.0000000	0.0000000	7.1000002E-02	490.0000	490.0000	490.0000
Node Results	Node 281 WH	Node 282 WT	Node 283 WH	Node 284 WT	Node 285 WH	Node 286 WT	Node 287 WH	Node 288 WT
Temperature, °F	127.4226	127.4244	127.4226	127.2555	127.2534	127.0645	127.0620	127.2198
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 289 WH	Node 290 N	Node 291 WT	Node 292 WH	Node 293 WT	Node 294 WH	Node 295 WT	Node 296 WH
Temperature, °F	127.2175	-459.6700	110.0127	110.0107	115.1039	115.1036	104.5354	104.5349
Density, lbm/ft**3	490.0000	0.0000000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 297 WT	Node 298 WH	Node 299 N	Node 300 N	Node 301 WT	Node 302 WH	Node 303 WT	Node 304 WH
Temperature, °F	124.3303	124.3276	-459.6700	-459.6700	98.57561	94.14840	101.7437	100.8829
Density, lbm/ft**3	490.0000	490.0000	0.0000000	0.0000000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 305 WT	Node 306 WH	Node 307 WT	Node 308 WH	Node 309 WT	Node 310 WH	Node 311 WT	Node 312 WH
Temperature, °F	101.7437	100.8829	101.4796	96.16043	102.7630	99.34799	98.57561	94.14841
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 313 WT	Node 314 WH	Node 315 WT	Node 316 WH	Node 317 WT	Node 318 WH	Node 319 WT	Node 320 WH
Temperature, °F	98.42684	96.26099	96.11044	92.94774	99.02662	100.3044	96.10942	96.09224
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 321 WT	Node 322 WH	Node 323 WT	Node 324 WH	Node 325 WT	Node 326 WH	Node 327 WT	Node 328 WH
Temperature, °F	101.0256	101.5827	92.22513	88.14425	96.11044	92.94774	99.00913	100.3044
Density, lbm/ft**3	125.0000	125.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 329 WT	Node 330 WH	Node 331 WT	Node 332 WH	Node 333 WT	Node 334 WH	Node 335 WT	Node 336 WH
Temperature, °F	96.09122	92.93891	96.24478	98.44771	96.09122	92.93891	92.20507	88.13497
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 337 WT	Node 338 WH	Node 339 WT	Node 340 WH	Node 341 WT	Node 342 WH	Node 343 WT	Node 344 WH
Temperature, °F	101.0015	101.5827	98.59943	94.16296	102.7857	99.36173	101.5008	96.16044
Density, lbm/ft**3	125.0000	125.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000

Node Results	Node 345 WT	Node 346 WH	Node 347 WT	Node 348 WH	Node 349 WT	Node 350 WH	Node 351 WT	Node 352 WH
Temperature, °F	101.7649	100.8829	101.7649	100.8829	101.5537	93.45683	99.76529	95.61604
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	125.0000	125.0000	145.0000	145.0000
Node Results	Node 353 WT	Node 354 WH	Node 355 WT	Node 356 WH	Node 357 WT	Node 358 WH	Node 359 WT	Node 360 WH
Temperature, °F	141.4368	158.9539	140.8234	158.9538	107.8757	108.2429	107.8757	108.2429
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 361 WT	Node 362 WH	Node 363 WT	Node 364 WH	Node 365 WT	Node 366 WH	Node 367 WT	Node 368 WH
Temperature, °F	140.8185	158.9538	107.8602	108.2420	107.8602	108.2420	141.4428	158.9539
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 369 AI	Node 370 N	Node 371 N	Node 372 AI	Node 373 N	Node 374 N	Node 375 AI	Node 376 AI
Temperature, °F	120.3321	-459.6700	-459.6700	112.7991	-459.6700	-459.6700	112.7883	112.7642
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	7.1000002E-02
Node Results	Node 377 AI	Node 378 AI	Node 379 AI	Node 380 AI	Node 381 AI	Node 382 N	Node 383 N	Node 384 AI
Temperature, °F	112.7474	112.7834	112.7593	112.7425	112.8017	-459.6700	-459.6700	112.7361
Density, lbm/ft**3	490.0000	490.0000	7.1000002E-02	490.0000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 385 N	Node 386 N	Node 387 AI	Node 388 N	Node 389 N	Node 390 AI	Node 391 N	Node 392 N
Temperature, °F	-459.6700	-459.6700	112.7390	-459.6700	-459.6700	120.3960	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 393 N	Node 394 N	Node 395 N	Node 396 N	Node 397 N	Node 398 N	Node 399 N	Node 400 N
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 401 N	Node 402 N	Node 403 BI	Node 404 BI	Node 405 BI			
Temperature, °F	-459.6700	-459.6700	122.0000	122.0000	104.0000			
Density, lbm/ft**3	0.0000000	0.0000000	1.000000	1.000000	1.000000			



Path Results	Path 1 CR	Path 2 CR	Path 3 WP	Path 4 CR	Path 5 CR	Path 6 CR	Path 7 CR	Path 8 WP
Heat Rate, Btu/hr	1248.663	4007.340	4709.773	-4711.738	-1435.874	713.3255	2288.911	2692.231
HTC, Btu/ft <sup>2</sup> hr°F	0.1764	Rn 0.5662	NC 4.955	Ck 0.5894	NC 0.1796	Rn 0.1764	Rn 0.5661	NC 5.000
Path Results	Path 9 N	Path 10 N	Path 11 CR	Path 12 CR	Path 13 WP	Path 14 N	Path 15 N	Path 16 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	206.4255	662.3760	779.0911	0.0000000	0.0000000	7674.873
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1764	Rn 0.5661	NC 5.000	Ck 0.0000	N 0.0000	N 0.1745
Path Results	Path 17 CR	Path 18 WP	Path 19 CR	Path 20 CR	Path 21 CR	Path 22 CR	Path 23 WP	Path 24 N
Heat Rate, Btu/hr	26126.26	31259.59	2.6338093E-09	1.1228612E-06	578.7631	1857.129	2184.368	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5939	NC 11.04	Ck 3.5401E-04	NC 0.1509	Rn 0.1764	Rn 0.5661	NC 5.000	Ck 0.0000
Path Results	Path 25 N	Path 26 CR	Path 27 CR	Path 28 WP	Path 29 N	Path 30 N	Path 31 CR	Path 32 CR
Heat Rate, Btu/hr	0.0000000	605.7721	1943.795	2286.305	0.0000000	0.0000000	1246.255	4000.288
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1764	Rn 0.5661	NC 5.000	Ck 3.0000	N 0.0000	N 0.1764	Rn 0.5662
Path Results	Path 33 WP	Path 34 CR	Path 35 CR	Path 36 CR	Path 37 CR	Path 38 WP	Path 39 N	Path 40 N
Heat Rate, Btu/hr	4704.163	-4134.908	-1278.750	239.7044	769.7609	904.6923	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	4.955	Ck 0.5709	NC 0.1766	Rn 0.1764	Rn 0.5661	NC 5.000	Ck 0.0000	N 0.0000
Path Results	Path 41 CR	Path 42 CR	Path 43 WP	Path 44 N	Path 45 N	Path 46 CR	Path 47 CR	Path 48 WP
Heat Rate, Btu/hr	220.4123	707.2566	831.8800	0.0000000	0.0000000	1238.553	3974.256	4674.547
HTC, Btu/ft <sup>2</sup> hr°F	0.1764	Rn 0.5661	NC 5.000	Ck 0.0000	N 0.0000	N 0.1764	Rn 0.5661	NC 5.000
Path Results	Path 49 N	Path 50 N	Path 51 Ck	Path 52 CR	Path 53 WP	Path 54 CR	Path 55 CR	Path 56 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	459.0961	1360.220	1596.015	-243.6253	-121.9805	525.3657
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1787	Rn 0.5296	NC 4.876	Ck 0.3456	NC 0.1730	Rn 0.1787
Path Results	Path 57 CR	Path 58 WP	Path 59 CR	Path 60 CR	Path 61 CR	Path 62 CR	Path 63 WP	Path 64 N
Heat Rate, Btu/hr	1556.565	1826.396	-278.7921	-139.5881	1209.615	3881.400	4565.328	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5296	NC 4.876	Ck 0.3456	NC 0.1730	Rn 0.1764	Rn 0.5661	NC 5.000	Ck 0.0000
Path Results	Path 65 N	Path 66 CR	Path 67 CR	Path 68 WP	Path 69 N	Path 70 N	Path 71 CR	Path 72 CR
Heat Rate, Btu/hr	0.0000000	504.0062	1617.250	1902.220	0.0000000	0.0000000	834.2718	2737.355
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1764	Rn 0.5661	NC 5.000	Ck 0.0000	N 0.0000	N 0.1796	Rn 0.5893
Path Results	Path 73 WP	Path 74 N	Path 75 N	Path 76 CR	Path 77 CR	Path 78 WP	Path 79 N	Path 80 N
Heat Rate, Btu/hr	3168.219	0.0000000	0.0000000	531.9592	1745.428	2020.161	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000	Ck 0.0000	N 0.0000	N 0.1796	Rn 0.5893	NC 5.000	Ck 0.0000	N 0.0000
Path Results	Path 81 CR	Path 82 CR	Path 83 WP	Path 84 CR	Path 85 CR	Path 86 CR	Path 87 CR	Path 88 WP
Heat Rate, Btu/hr	1276.627	4086.428	4827.474	-663.9841	-311.1685	1652.168	5288.516	6247.552
HTC, Btu/ft <sup>2</sup> hr°F	0.1805	Rn 0.5776	NC 11.04	Ck 0.3680	NC 0.1725	Rn 0.1805	Rn 0.5776	NC 11.04

Path Results	Path 89 CR	Path 90 CR	Path 91 CR	Path 92 CR	Path 93 WP	Path 94 N	Path 95 N	Path 96 CR
Heat Rate, Btu/hr	-859.3057	-402.7036	475.9211	1528.874	1807.454	0.0000000	0.0000000	1828.620
HTC, Btu/ft <sup>2</sup> hr°F	0.3680	NC	0.1725	Rn 0.1803	Rn 0.5793	NC	0.0000	N 0.1851
Path Results	Path 97 CR	Path 98 WP	Path 99 N	Path 100 N	Path 101 CR	Path 102 CR	Path 103 WP	Path 104 N
Heat Rate, Btu/hr	4989.451	3418.082	0.0000000	0.0000000	195.1825	553.8831	379.5021	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5049	NC	2.320	Ck 0.0000	N 0.0000	N 0.1841	Rn 0.5223	NC
Path Results	Path 105 N	Path 106 CR	Path 107 CR	Path 108 WP	Path 109 N	Path 110 N	Path 111 CR	Path 112 CR
Heat Rate, Btu/hr	0.0000000	329.6415	935.4469	640.9369	0.0000000	0.0000000	89.11361	252.8840
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1841	Rn 0.5223	NC	2.320	Ck 0.0000	N 0.0000	N 0.1841
Path Results	Path 113 WP	Path 114 N	Path 115 N	Path 116 CR	Path 117 CR	Path 118 WP	Path 119 N	Path 120 N
Heat Rate, Btu/hr	173.2676	0.0000000	0.0000000	600.1368	1703.051	1166.873	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	2.320	Ck 0.0000	N 0.0000	N 0.1841	Rn 0.5223	NC	2.320	Ck 0.0000
Path Results	Path 121 CR	Path 122 CR	Path 123 WP	Path 124 N	Path 125 N	Path 126 CR	Path 127 CR	Path 128 WP
Heat Rate, Btu/hr	21.73961	267.4304	183.2343	0.0000000	0.0000000	141.1722	456.5315	531.0696
HTC, Btu/ft <sup>2</sup> hr°F	0.1841	Rn 0.5223	NC	2.320	Ck 0.0000	N 0.0000	N 0.1766	Rn 0.5710
Path Results	Path 129 N	Path 130 N	Path 131 CR	Path 132 CR	Path 133 WP	Path 134 N	Path 135 N	Path 136 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	786.6018	2543.762	2959.083	0.0000000	0.0000000	421.9151
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1766	Rn 0.5710	NC	5.000	Ck 0.0000	N 0.0000
Path Results	Path 137 CR	Path 138 WP	Path 139 N	Path 140 N	Path 141 CR	Path 142 CR	Path 143 WP	Path 144 N
Heat Rate, Btu/hr	1183.184	814.4004	0.0000000	0.0000000	1609.327	4317.336	2972.498	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5063	NC	2.320	Ck 0.0000	N 0.0000	N 0.1816	Rn 0.4871	NC
Path Results	Path 145 N	Path 146 CR	Path 147 CR	Path 148 WP	Path 149 N	Path 150 N	Path 151 CR	Path 152 CR
Heat Rate, Btu/hr	0.0000000	414.4594	1298.872	1543.012	0.0000000	0.0000000	1436.999	4485.363
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1775	Rn 0.5564	NC	11.04	Ck 0.0000	N 0.0000	N 0.1777
Path Results	Path 153 WP	Path 154 CR	Path 155 CR	Path 156 CR	Path 157 CR	Path 158 WP	Path 159 CR	Path 160 CR
Heat Rate, Btu/hr	5323.689	-859.3057	-402.7036	426.9941	1332.793	1581.896	-255.3365	-119.6605
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.3680	NC	0.1725	Rn 0.1777	Rn 0.5565	NC	11.04
Path Results	Path 161 CR	Path 162 CR	Path 163 WP	Path 164 N	Path 165 N	Path 166 CR	Path 167 CR	Path 168 WP
Heat Rate, Btu/hr	988.3302	3000.345	3504.284	0.0000000	0.0000000	113.9285	368.4289	428.5825
HTC, Btu/ft <sup>2</sup> hr°F	0.1785	Rn 0.5418	NC	5.000	Ck 0.0000	N 0.0000	N 0.1766	Rn 0.5710
Path Results	Path 169 N	Path 170 N	Path 171 CR	Path 172 CR	Path 173 WP	Path 174 N	Path 175 N	Path 176 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	685.0568	2215.379	2577.085	0.0000000	0.0000000	237.7752
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1766	Rn 0.5710	NC	5.000	Ck 0.0000	N 0.0000

Path Results	Path 177 CR	Path 178 WP	Path 179 N	Path 180 N	Path 181 CR	Path 182 CR	Path 183 WP	Path 184 N
Heat Rate, Btu/hr	762.9705	897.4110	0.0000000	0.0000000	202.0848	648.4475	762.7084	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5661 NC	5.000 Ck	0.0000 N	0.0000 N	0.1764 Rn	0.5661 NC	5.000 Ck	0.0000 N
Path Results	Path 185 N	Path 186 CR	Path 187 CR	Path 188 WP	Path 189 N	Path 190 N	Path 191 CR	Path 192 CR
Heat Rate, Btu/hr	0.0000000	141.3147	451.4490	533.3498	0.0000000	0.0000000	163.0183	523.0913
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1764 Rn	0.5661 NC	5.000 Ck	0.0000 N	0.0000 N	0.1764 Rn	0.5661 NC
Path Results	Path 193 WP	Path 194 N	Path 195 N	Path 196 CR	Path 197 CR	Path 198 WP	Path 199 N	Path 200 N
Heat Rate, Btu/hr	615.2636	0.0000000	0.0000000	494.8425	1587.845	1867.634	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000 Ck	0.0000 N	0.0000 N	0.1764 Rn	0.5661 NC	5.000 Ck	0.0000 N	0.0000 N
Path Results	Path 201 CR	Path 202 CR	Path 203 WP	Path 204 N	Path 205 N	Path 206 CR	Path 207 CR	Path 208 WP
Heat Rate, Btu/hr	485.1964	1556.893	1821.228	0.0000000	0.0000000	202.5671	649.9951	764.5287
HTC, Btu/ft <sup>2</sup> hr°F	0.1764 Rn	0.5661 NC	5.000 Ck	0.0000 N	0.0000 N	0.1764 Rn	0.5661 NC	5.000 Ck
Path Results	Path 209 N	Path 210 N	Path 211 CR	Path 212 CR	Path 213 WP	Path 214 N	Path 215 N	Path 216 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	277.9057	911.8449	1055.371	0.0000000	0.0000000	104.0973
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1764 Rn	0.5661 NC	5.000 Ck	0.0000 N	0.0000 N	0.1841 Rn
Path Results	Path 217 CR	Path 218 WP	Path 219 N	Path 220 N	Path 221 CR	Path 222 CR	Path 223 WP	Path 224 N
Heat Rate, Btu/hr	295.4043	202.4011	0.0000000	0.0000000	175.0728	496.8163	340.4019	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5223 NC	2.320 Ck	0.0000 N	0.0000 N	0.1841 Rn	0.5223 NC	2.320 Ck	0.0000 N
Path Results	Path 225 N	Path 226 CR	Path 227 CR	Path 228 WP	Path 229 N	Path 230 N	Path 231 CR	Path 232 CR
Heat Rate, Btu/hr	0.0000000	362.7634	1029.439	705.3372	0.0000000	0.0000000	98.57700	279.7389
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1841 Rn	0.5223 NC	2.320 Ck	0.0000 N	0.0000 N	0.1841 Rn	0.5223 NC
Path Results	Path 233 WP	Path 234 N	Path 235 N	Path 236 CR	Path 237 CR	Path 238 WP	Path 239 N	Path 240 N
Heat Rate, Btu/hr	191.6677	0.0000000	0.0000000	126.3120	408.4756	475.1675	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	2.320 Ck	0.0000 N	0.0000 N	0.1766 Rn	0.5710 NC	5.000 Ck	0.0000 N	0.0000 N
Path Results	Path 241 CR	Path 242 CR	Path 243 WP	Path 244 N	Path 245 N	Path 246 CR	Path 247 CR	Path 248 WP
Heat Rate, Btu/hr	459.6766	1486.531	1729.237	0.0000000	0.0000000	264.6206	742.0803	510.7832
HTC, Btu/ft <sup>2</sup> hr°F	0.1766 Rn	0.5710 NC	5.000 Ck	0.0000 N	0.0000 N	0.1805 Rn	0.5063 NC	2.320 Ck
Path Results	Path 249 N	Path 250 N	Path 251 CR	Path 252 CR	Path 253 WP	Path 254 N	Path 255 N	Path 256 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	281.8491	911.4612	1060.276	0.0000000	0.0000000	10890.46
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1766 Rn	0.5710 NC	5.000 Ck	0.0000 N	0.0000 N	0.1783 Rn
Path Results	Path 257 CR	Path 258 WP	Path 259 CR	Path 260 CR	Path 261 CR	Path 262 CR	Path 263 WP	Path 264 CR
Heat Rate, Btu/hr	37935.41	41355.59	-53.41865	-9318.176	10643.81	37774.90	41183.62	-53.02915
HTC, Btu/ft <sup>2</sup> hr°F	0.6212 NC	11.05 Ck	1.0000E-03 XT	0.1744 Rn	0.1783 Rn	0.6212 NC	11.05 Ck	1.0000E-03 XT

Path Results	Path 265 CR	Path 266 CR	Path 267 CR	Path 268 WP	Path 269 N	Path 270 N	Path 271 CR	Path 272 CR
Heat Rate, Btu/hr	-9246.488	2754.591	15.58688	2477.742	0.0000000	0.0000000	2742.334	15.51753
HTC, Btu/ft <sup>2</sup> hr°F	0.1744 Rn	0.1767 Rn	1.0000E-03 XT	11.04 Ck	0.0000 N	0.0000 N	0.1767 Rn	1.0000E-03 XT
Path Results	Path 273 WP	Path 274 N	Path 275 N	Path 276 CR	Path 277 CR	Path 278 WP	Path 279 CR	Path 280 CR
Heat Rate, Btu/hr	2466.717	0.0000000	0.0000000	10738.82	38468.24	41321.92	-59.38402	-10612.51
HTC, Btu/ft <sup>2</sup> hr°F	11.04 Ck	0.0000 N	0.0000 N	0.1816 Rn	0.6504 NC	11.05 Ck	1.0000E-03 XT	0.1787 Rn
Path Results	Path 281 CR	Path 282 CR	Path 283 WP	Path 284 N	Path 285 N	Path 286 CR	Path 287 CR	Path 288 WP
Heat Rate, Btu/hr	9745.356	54.35096	8712.491	0.0000000	0.0000000	8999.364	31481.10	33788.17
HTC, Btu/ft <sup>2</sup> hr°F	0.1793 Rn	1.0000E-03 XT	11.04 Ck	0.0000 N	0.0000 N	0.1786 Rn	0.6248 NC	11.05 Ck
Path Results	Path 289 CR	Path 290 CR	Path 291 CR	Path 292 CR	Path 293 WP	Path 294 N	Path 295 N	Path 296 CR
Heat Rate, Btu/hr	-59.32711	-10576.81	7904.150	44.67422	7067.279	0.0000000	0.0000000	21.71246
HTC, Btu/ft <sup>2</sup> hr°F	1.0000E-03 XT	0.1783 Rn	0.1769 Rn	1.0000E-03 XT	11.04 Ck	0.0000 N	0.0000 N	0.1882 Rn
Path Results	Path 297 CR	Path 298 N	Path 299 N	Path 300 CR	Path 301 CR	Path 302 CR	Path 303 CR	Path 304 N
Heat Rate, Btu/hr	29.26759	0.0000000	0.0000000	-29.88768	-43.33743	21.71246	29.26759	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2537 NC	0.0000 N	0.0000 N	0.1929 Rn	0.2797 NC	0.1882 Rn	0.2537 NC	0.0000 N
Path Results	Path 305 N	Path 306 N	Path 307 N	Path 308 CR	Path 309 CR	Path 310 N	Path 311 N	Path 312 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	11.22030	15.14624	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.0000 N	0.1882 Rn	0.2541 NC	0.0000 N	0.0000 N	0.0000 N
Path Results	Path 313 N	Path 314 CR	Path 315 CR	Path 316 N	Path 317 N	Path 318 CR	Path 319 CR	Path 320 CR
Heat Rate, Btu/hr	0.0000000	21.71246	29.26759	0.0000000	0.0000000	-26.15839	-37.43052	9.750148
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1882 Rn	0.2537 NC	0.0000 N	0.0000 N	0.1885 Rn	0.2697 NC	0.1882 Rn
Path Results	Path 321 CR	Path 322 N	Path 323 N	Path 324 N	Path 325 N	Path 326 CR	Path 327 CR	Path 328 N
Heat Rate, Btu/hr	13.15416	0.0000000	0.0000000	0.0000000	0.0000000	8.096231	10.91310	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2540 NC	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.1882 Rn	0.2537 NC	0.0000 N
Path Results	Path 329 N	Path 330 N	Path 331 N	Path 332 CR	Path 333 CR	Path 334 N	Path 335 N	Path 336 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	23.09072	31.13513	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.0000 N	0.1882 Rn	0.2538 NC	0.0000 N	0.0000 N	0.0000 N
Path Results	Path 337 N	Path 338 CR	Path 339 CR	Path 340 N	Path 341 N	Path 342 N	Path 343 N	Path 344 CR
Heat Rate, Btu/hr	0.0000000	23.09072	31.13513	0.0000000	0.0000000	0.0000000	0.0000000	9.750148
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1882 Rn	0.2538 NC	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.1882 Rn
Path Results	Path 345 CR	Path 346 N	Path 347 N	Path 348 N	Path 349 N	Path 350 CR	Path 351 CR	Path 352 N
Heat Rate, Btu/hr	13.15416	0.0000000	0.0000000	0.0000000	0.0000000	11.14467	16.15942	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2540 NC	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.1929 Rn	0.2797 NC	0.0000 N

Path Results	Path 353 N	Path 354 N	Path 355 N	Path 356 CR	Path 357 CR	Path 358 N	Path 359 N	Path 360 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	12.65810	18.36332	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N	0.0000	N	0.1929	Rn	0.2798	NC
Path Results	Path 361 N	Path 362 CR	Path 363 CR	Path 364 N	Path 365 N	Path 366 N	Path 367 N	Path 368 CR
Heat Rate, Btu/hr	0.0000000	31.78390	46.10094	0.0000000	0.0000000	0.0000000	0.0000000	26.15839
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N	0.1929	Rn	0.2798	NC	0.0000	N
Path Results	Path 369 CR	Path 370 N	Path 371 N	Path 372 N	Path 373 N	Path 374 CR	Path 375 CR	Path 376 N
Heat Rate, Btu/hr	37.43052	0.0000000	0.0000000	0.0000000	0.0000000	11.74586	16.82154	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2697	NC	0.0000	N	0.0000	N	0.0000	N
Path Results	Path 377 N	Path 378 N	Path 379 N	Path 380 CR	Path 381 CR	Path 382 N	Path 383 N	Path 384 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	10.86201	15.52454	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N	0.0000	N	0.1885	Rn	0.2694	NC
Path Results	Path 385 N	Path 386 CR	Path 387 CR	Path 388 N	Path 389 N	Path 390 N	Path 391 N	Path 392 CR
Heat Rate, Btu/hr	0.0000000	11.30871	16.16893	0.0000000	0.0000000	0.0000000	0.0000000	15997.01
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N	0.1885	Rn	0.2695	NC	0.0000	N
Path Results	Path 393 CR	Path 394 WP	Path 395 CR	Path 396 CR	Path 397 CR	Path 398 CR	Path 399 WP	Path 400 CR
Heat Rate, Btu/hr	8768.255	18522.15	7789.706	4489.440	2535.896	1606.799	3153.887	1446.355
HTC, Btu/ft <sup>2</sup> hr°F	0.3529	NC	2709.	Cr	0.3427	NC	0.1975	Rn
Path Results	Path 401 CR	Path 402 CR	Path 403 CR	Path 404 CR	Path 405 WP	Path 406 CR	Path 407 WP	Path 408 CR
Heat Rate, Btu/hr	718.7452	57834.40	4348.564	1978.071	3163.339	5830.880	2915.409	29267.37
HTC, Btu/ft <sup>2</sup> hr°F	0.1975	Rn	69.03	NC	0.6483	Rn	0.2949	NC
Path Results	Path 409 WP	Path 410 N	Path 411 N	Path 412 CR	Path 413 CR	Path 414 WP	Path 415 CR	Path 416 CR
Heat Rate, Btu/hr	14633.85	0.0000000	0.0000000	15078.86	8375.394	18020.03	8083.376	4502.552
HTC, Btu/ft <sup>2</sup> hr°F	1296.	Cr	0.0000	N	0.0000	N	0.6292	Rn
Path Results	Path 417 CR	Path 418 CR	Path 419 WP	Path 420 CR	Path 421 CR	Path 422 CR	Path 423 CR	Path 424 CR
Heat Rate, Btu/hr	2292.211	1472.967	2941.977	1430.960	687.8369	47281.69	3054.314	1376.615
HTC, Btu/ft <sup>2</sup> hr°F	0.6292	Rn	0.4043	NC	2709.	Cr	0.4015	NC
Path Results	Path 425 WP	Path 426 CR	Path 427 WP	Path 428 CR	Path 429 WP	Path 430 N	Path 431 N	Path 432 CR
Heat Rate, Btu/hr	2215.480	4924.720	2462.332	25049.71	12525.00	0.0000000	0.0000000	6835.181
HTC, Btu/ft <sup>2</sup> hr°F	2709.	Cr	0.7000	XT	1116.	Cr	0.7000	XT
Path Results	Path 433 CR	Path 434 WP	Path 435 CR	Path 436 CR	Path 437 CR	Path 438 CR	Path 439 WP	Path 440 CR
Heat Rate, Btu/hr	4185.616	7658.450	2769.115	1526.876	6684.263	3757.711	8889.403	4863.510
HTC, Btu/ft <sup>2</sup> hr°F	0.3869	NC	1296.	Cr	0.3492	NC	0.1925	Rn



Path Results	Path 441 CR	Path 442 CR	Path 443 CR	Path 444 WP	Path 445 CR	Path 446 CR	Path 447 CR	Path 448 CR
Heat Rate, Btu/hr	2473.354	583.1044	327.8054	775.4707	424.2703	215.7641	1625.766	924.0904
HTC, Btu/ft <sup>2</sup> hr°F	0.1935	Rn 0.6348	Rn 0.3569	NC 3098.	Ck 0.3805	NC 0.1535	Rn 0.6345	Rn 0.2298
Path Results	Path 449 WP	Path 450 CR	Path 451 CR	Path 452 CR	Path 453 CR	Path 454 WP	Path 455 CR	Path 456 CR
Heat Rate, Btu/hr	2127.884	1125.741	576.3988	2991.370	1982.642	4117.241	2255.840	1004.654
HTC, Btu/ft <sup>2</sup> hr°F	2709.	Ck 0.3779	NC 0.1934	Rn 0.6342	Rn 0.6204	NC 2409.	Ck 0.6340	NC 0.1933
Path Results	Path 457 CR	Path 458 CR	Path 459 WP	Path 460 CR	Path 461 CR	Path 462 CR	Path 463 CR	Path 464 WP
Heat Rate, Btu/hr	147.4658	96.99131	206.3720	116.6514	51.63652	65339.02	16717.32	8359.815
HTC, Btu/ft <sup>2</sup> hr°F	0.6345	Rn 0.4173	NC 2709.	Ck 0.6349	NC 0.1934	Rn 309.0	NC 0.7000	XT 1296.
Path Results	Path 465 N	Path 466 N	Path 467 N	Path 468 N	Path 469 N	Path 470 N	Path 471 CR	Path 472 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	1748.227	3675.063
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1806	Rn 0.5334
Path Results	Path 473 WP	Path 474 N	Path 475 N	Path 476 CR	Path 477 CR	Path 478 WP	Path 479 CR	Path 480 CR
Heat Rate, Btu/hr	4510.032	0.0000000	0.0000000	853.8298	2380.969	3001.584	-307.3961	-175.0123
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.0000	N 0.0000	N 0.1821	Rn 0.507.	NC 11.04	Ck 0.3055	NC 0.1739
Path Results	Path 481 CR	Path 482 CR	Path 483 WP	Path 484 CR	Path 485 CR	Path 486 CR	Path 487 CR	Path 488 WP
Heat Rate, Btu/hr	1080.349	3012.635	3797.896	-388.9475	-221.4426	312.7602	876.6071	1105.271
HTC, Btu/ft <sup>2</sup> hr°F	0.1821	Rn 0.5077	NC 11.04	Ck 0.3055	NC 0.1739	Rn 0.1819	Rn 0.5083	NC 11.04
Path Results	Path 489 N	Path 490 N	Path 491 CR	Path 492 CR	Path 493 WP	Path 494 N	Path 495 N	Path 496 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1731.238	4731.070	5904.601	0.0000000	0.0000000	2173.551
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1825	Rn 0.4989	NC 11.04	Ck 0.0000	N 0.0000	N 0.1806
Path Results	Path 497 CR	Path 498 WP	Path 499 N	Path 500 N	Path 501 CR	Path 502 CR	Path 503 WP	Path 504 CR
Heat Rate, Btu/hr	6420.100	7878.738	0.0000000	0.0000000	1216.173	3601.360	4446.947	-2483.886
HTC, Btu/ft <sup>2</sup> hr°F	0.5334	NC 11.04	Ck 0.0000	N 0.0000	N 0.1805	Rn 0.5345	NC 11.04	Ck 0.4874
Path Results	Path 505 CR	Path 506 CR	Path 507 CR	Path 508 WP	Path 509 N	Path 510 N	Path 511 CR	Path 512 CR
Heat Rate, Btu/hr	-895.7988	774.7902	2150.330	2686.015	0.0000000	0.0000000	1740.375	4524.381
HTC, Btu/ft <sup>2</sup> hr°F	0.1758	Rn 0.1757	Rn 0.4888	NC 11.04	Ck 0.0000	N 0.0000	N 0.1771	Rn 0.4603
Path Results	Path 513 WP	Path 514 CR	Path 515 CR	Path 516 CR	Path 517 CR	Path 518 WP	Path 519 CR	Path 520 CR
Heat Rate, Btu/hr	5798.469	-727.2193	-430.5347	1788.029	4974.092	6199.223	-4956.261	-1782.819
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.2925	NC 0.1732	Rn 0.1757	Rn 0.4888	NC 11.04	Ck 0.4884	NC 0.1757
Path Results	Path 521 CR	Path 522 CR	Path 523 WP	Path 524 CR	Path 525 CR	Path 526 CR	Path 527 CR	Path 528 WP
Heat Rate, Btu/hr	342.7429	844.3358	1068.808	-154.5429	-93.59116	198.1134	594.8138	728.8434
HTC, Btu/ft <sup>2</sup> hr°F	0.1780	Rn 0.4385	NC 4.876	Ck 0.2877	NC 0.1743	Rn 0.1739	Rn 0.5222	NC 11.04



Path Results	Path 529 N	Path 530 N	Path 531 CR	Path 532 CR	Path 533 WP	Path 534 N	Path 535 N	Path 536 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1467.051	4081.078	5085.920	0.0000000	0.0000000	1734.404
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1757	Rn 0.4888	NC 11.04	Ck 0.0000	N 0.0000	N 0.1770
Path Results	Path 537 CR	Path 538 WP	Path 539 CR	Path 540 CR	Path 541 CR	Path 542 CR	Path 543 WP	Path 544 N
Heat Rate, Btu/hr	4505.053	5774.741	-727.2193	-430.5347	789.5081	2194.891	2735.747	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4598	NC 11.04	Ck 0.2925	NC 0.1732	Rn 0.1757	Rn 0.4884	NC 11.04	Ck 0.0000
Path Results	Path 545 N	Path 546 CR	Path 547 CR	Path 548 WP	Path 549 CR	Path 550 CR	Path 551 CR	Path 552 CR
Heat Rate, Btu/hr	0.0000000	893.1199	2474.721	3056.231	-3606.728	-1217.754	1560.284	4337.706
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1754	Rn 0.4870	NC 11.04	Ck 0.5347	NC 0.1805	Rn 0.1757	Rn 0.4884
Path Results	Path 553 WP	Path 554 N	Path 555 N	Path 556 CR	Path 557 CR	Path 558 WP	Path 559 N	Path 560 N
Heat Rate, Btu/hr	5406.585	0.0000000	0.0000000	218.4641	655.6143	803.4338	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.0000	N 0.0000	N 0.1739	Rn 0.5219	NC 11.04	Ck 0.0000	N 0.0000
Path Results	Path 561 CR	Path 562 CR	Path 563 WP	Path 564 CR	Path 565 CR	Path 566 CR	Path 567 CR	Path 568 WP
Heat Rate, Btu/hr	260.1459	660.3347	810.6938	-117.7036	-71.28129	2176.127	6428.630	7891.264
HTC, Btu/ft <sup>2</sup> hr°F	0.1780	Rn 0.4381	NC 4.876	Ck 0.2877	NC 0.1743	Rn 0.1806	Rn 0.5335	NC 11.04
Path Results	Path 569 N	Path 570 N	Path 571 CR	Path 572 CR	Path 573 WP	Path 574 N	Path 575 N	Path 576 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1733.772	4739.131	5916.458	0.0000000	0.0000000	313.2154
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1826	Rn 0.4991	NC 11.04	Ck 0.0000	N 0.0000	N 0.1820
Path Results	Path 577 CR	Path 578 WP	Path 579 N	Path 580 N	Path 581 CR	Path 582 CR	Path 583 WP	Path 584 CR
Heat Rate, Btu/hr	878.0953	1107.525	0.0000000	0.0000000	1081.942	3017.830	3805.770	-388.9475
HTC, Btu/ft <sup>2</sup> hr°F	0.5102	NC 11.04	Ck 0.0000	N 0.0000	N 0.1821	Rn 0.5079	NC 11.04	Ck 0.1055
Path Results	Path 585 CR	Path 586 CR	Path 587 CR	Path 588 WP	Path 589 CR	Path 590 CR	Path 591 CR	Path 592 CR
Heat Rate, Btu/hr	-221.4426	299.9622	836.6756	1055.127	-107.8334	-61.39365	864.8780	2422.218
HTC, Btu/ft <sup>2</sup> hr°F	0.1739	Rn 0.1821	Rn 0.5079	NC 11.04	Ck 0.1055	NC 0.1739	Rn 0.1820	Rn 0.5097
Path Results	Path 593 WP	Path 594 N	Path 595 N	Path 596 CR	Path 597 CR	Path 598 WP	Path 599 N	Path 600 N
Heat Rate, Btu/hr	3004.024	0.0000000	0.0000000	855.7920	2477.313	3054.257	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000	Ck 0.0000	N 0.0000	N 0.1812	Rn 0.5244	NC 11.04	Ck 0.0000	N 0.0000
Path Results	Path 601 CR	Path 602 CR	Path 603 WP	Path 604 CR	Path 605 N	Path 606 CR	Path 607 CR	Path 608 WP
Heat Rate, Btu/hr	-9906.160	-49.11249	-10795.1P	-22398.23	0.0000000	-7243.547	-36.67715	-7618.085
HTC, Btu/ft <sup>2</sup> hr°F	0.2017	Rn 1.0000E-03	XT 11.04	Ck 3.000	XT 0.0000	N 0.1975	Rn 1.0000E-03	XT 11.04
Path Results	Path 609 CR	Path 610 N	Path 611 CR	Path 612 CR	Path 613 WP	Path 614 CR	Path 615 CR	Path 616 CR
Heat Rate, Btu/hr	-12328.14	0.0000000	736.2802	1592.750	2021.738	-9.704275	-1799.651	875.5200
HTC, Btu/ft <sup>2</sup> hr°F	3.000	XT 0.0000	N 0.1812	Rn 1.3921	NC 11.04	Ck 1.0000E-03	XT 0.1854	Rn 0.1812

Path Results	Path 617 CR	Path 618 WP	Path 619 CR	Path 620 CR	Path 621 CR	Path 622 CR	Path 623 WP	Path 624 CR
Heat Rate, Btu/hr	1893.958	2404.075	-11.53947	-2139.988	-7258.153	-36.75753	-7631.759	-12328.14
HTC, Btu/ft <sup>2</sup> hr°F	0.3921 NC	11.04 Ck	1.0000E-03 XT	0.1854 Rn	0.1975 Rn	1.0000E-03 XT	11.04 Ck	3.000 XT
Path Results	Path 625 N	Path 626 CR	Path 627 CR	Path 628 WP	Path 629 CR	Path 630 CR	Path 631 CR	Path 632 CR
Heat Rate, Btu/hr	0.0000000	729.8728	1574.782	1999.000	-9.704911	-1799.765	868.6252	1874.156
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1812 Rn	0.3910 NC	11.04 Ck	1.0000E-03 XT	0.1854 Rn	0.1812 Rn	0.3910 NC
Path Results	Path 633 WP	Path 634 CR	Path 635 CR	Path 636 CR	Path 637 CR	Path 638 WP	Path 639 CR	Path 640 N
Heat Rate, Btu/hr	2379.020	-11.54986	-2141.909	-9487.996	-47.03312	-10339.44	-21493.52	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	11.04 Ck	1.0000E-03 XT	0.1854 Rn	0.2017 Rn	1.0000E-03 XT	11.04 Ck	3.000 XT	0.0000 N
Path Results	Path 641 CR	Path 642 CR	Path 643 N	Path 644 N	Path 645 N	Path 646 N	Path 647 CR	Path 648 CR
Heat Rate, Btu/hr	3.852684	3.914696	0.0000000	0.0000000	0.0000000	0.0000000	3.746165	3.652335
HTC, Btu/ft <sup>2</sup> hr°F	0.1910 Rn	0.1941 NC	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.1836 Rn	0.1791 NC
Path Results	Path 649 N	Path 650 N	Path 651 N	Path 652 N	Path 653 CR	Path 654 CR	Path 655 CR	Path 656 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	3.232855	3.167030	0.1179342	8.2250471E-02
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.1836 Rn	0.1798 Rn	0.2353 Ck	0.2353 Ck
Path Results	Path 657 CR	Path 658 CR	Path 659 CR	Path 660 CR	Path 661 CR	Path 662 CR	Path 663 CR	Path 664 CR
Heat Rate, Btu/hr	-3.142166	-3.050540	2.282431	2.240285	8.2889265E-02	5.7704939E-02	-2.218812	-2.158411
HTC, Btu/ft <sup>2</sup> hr°F	0.1835 Rn	0.1782 NC	0.1836 Rn	0.1802 NC	0.2353 Ck	0.2353 Ck	0.1835 Rn	0.1785 NC
Path Results	Path 665 CR	Path 666 CR	Path 667 N	Path 668 N	Path 669 N	Path 670 N	Path 671 CR	Path 672 CR
Heat Rate, Btu/hr	3.182110	3.100942	0.0000000	0.0000000	0.0000000	0.0000000	2.894494	2.822924
HTC, Btu/ft <sup>2</sup> hr°F	0.1836 Rn	0.1789 NC	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.1835 Rn	0.1790 NC
Path Results	Path 673 N	Path 674 N	Path 675 N	Path 676 N	Path 677 CR	Path 678 CR	Path 679 N	Path 680 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	3.174100	3.091932	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.1835 Rn	0.1788 NC	0.0000 N	0.0000 N
Path Results	Path 681 N	Path 682 N	Path 683 CR	Path 684 CR	Path 685 N	Path 686 N	Path 687 N	Path 688 N
Heat Rate, Btu/hr	0.0000000	0.0000000	3.791101	3.830237	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1931 Rn	0.1931 NC	0.0000 N	0.0000 N	0.0000 N	0.0000 N
Path Results	Path 689 CR	Path 690 CR	Path 691 WP	Path 692 N	Path 693 N	Path 694 CR	Path 695 CR	Path 696 WP
Heat Rate, Btu/hr	2331.951	4984.622	3657.454	0.0000000	0.0000000	815.1581	1318.520	1069.719
HTC, Btu/ft <sup>2</sup> hr°F	0.1849 Rn	0.3953 NC	1296. Ck	0.0000 N	0.0000 N	0.1874 Rn	0.3031 NC	3098. Ck
Path Results	Path 697 N	Path 698 N	Path 699 CR	Path 700 CR	Path 701 WP	Path 702 N	Path 703 N	Path 704 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	862.3173	4.729360	433.5242	0.0000000	0.0000000	577.8131
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1823 Rn	1.0000E-03 XT	2409. Ck	0.0000 N	0.0000 N	0.1836 Rn

Path Results	Path 705 CR	Path 706 WF	Path 707 CR	Path 708 CR	Path 709 WF
Heat Rate, Btu/hr	1004.072	790.9225	415.3529	713.3810	564.3206
HTC, Btu/ft <sup>2</sup> hr°F	0.3332	NC 3098.	CR 0.1875	Rn 0.3220	NC 3098., CR

INLOOP(I),I=1,2): 0.000000000E+00 0.000000000E+00

Case 1 after step no. 3367, time (XA) is 6.00000 hrs. 9 rejected CM steps, next time step is 3.974225E-03 hrs.

Node Results	Node 1 AI	Node 2 AI	Node 3 AI	Node 4 N	Node 5 N	Node 6 BI	Node 7 N	Node 8 N
Temperature, eF	125.4292	133.5812	127.6802	-459.6700	-459.6700	77.00000	-459.6700	-459.6700
Density, lbm/ft**3	7.100000E-02	7.100000E-02	7.100000E-02	0.0000000	0.0000000	1.000000	0.0000000	0.0000000
Node Results	Node 9 N	Node 10 N	Node 11 N	Node 12 BI	Node 13 BI	Node 14 N	Node 15 N	Node 16 N
Temperature, eF	-459.6700	-459.6700	-459.6700	105.1000	105.1000	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	1.000000	1.000000	0.0000000	0.0000000	0.0000000
Node Results	Node 17 BI	Node 18 BI	Node 19 N	Node 20 N	Node 21 N	Node 22 N	Node 23 N	Node 24 N
Temperature, eF	105.1000	105.1000	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	1.000000	1.000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 25 N	Node 26 N	Node 27 N	Node 28 N	Node 29 BI	Node 30 BI	Node 31 N	Node 32 N
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	105.1000	105.1000	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	1.000000	1.000000	0.0000000	0.0000000
Node Results	Node 33 N	Node 34 N	Node 35 N	Node 36 N	Node 37 N	Node 38 N	Node 39 N	Node 40 N
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 41 N	Node 42 N	Node 43 N	Node 44 N	Node 45 N	Node 46 N	Node 47 N	Node 48 N
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 49 AI	Node 50 AI	Node 51 AI	Node 52 AI	Node 53 N	Node 54 N	Node 55 BI	Node 56 WT
Temperature, eF	115.5509	115.4942	124.1157	124.0704	-459.6700	-459.6700	112.0000	96.96448
Density, lbm/ft**3	7.100000E-02	7.100000E-02	7.100000E-02	7.100000E-02	0.0000000	0.0000000	1.000000	125.0000
Node Results	Node 57 WH	Node 58 WT	Node 59 WH	Node 60 WT	Node 61 WH	Node 62 WT	Node 63 WH	Node 64 WT
Temperature, eF	100.0835	96.97317	84.52104	96.97317	84.52104	91.30810	77.00000	96.97317
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	145.0000	145.0000	125.0000
Node Results	Node 65 WH	Node 66 WT	Node 67 WH	Node 68 WT	Node 69 WH	Node 70 WT	Node 71 WH	Node 72 WT
Temperature, eF	84.52104	96.97317	84.52104	96.90992	97.46027	96.97317	84.52104	96.97317
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 73 WH	Node 74 WT	Node 75 WH	Node 76 WT	Node 77 WH	Node 78 WT	Node 79 WH	Node 80 WT
Temperature, eF	84.52104	96.97317	84.52104	101.3547	98.97099	101.3547	98.97099	96.97317
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000

Node Results	Node 81 WH	Node 82 MT	Node 83 WH	Node 84 MT	Node 85 WH	Node 86 MT	Node 87 WH	Node 88 MT
Temperature, °F	84.52104	96.97317	84.52104	100.1272	85.14906	100.1272	85.14906	99.90717
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	145.0000
Node Results	Node 89 WH	Node 90 MT	Node 91 WH	Node 92 MT	Node 93 WH	Node 94 MT	Node 95 WH	Node 96 MT
Temperature, °F	7.68718	99.90717	97.68718	99.61465	88.55890	115.3499	112.6126	114.2266
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	100.0000	100.0000	100.0000
Node Results	Node 97 WH	Node 98 MT	Node 99 WH	Node 100 MT	Node 101 WH	Node 102 MT	Node 103 WH	Node 104 MT
Temperature, °F	111.2643	114.2266	111.2643	114.2266	111.2643	114.2266	111.2643	114.2266
Density, lbm/ft**3	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
Node Results	Node 105 WH	Node 106 MT	Node 107 WH	Node 108 MT	Node 109 WH	Node 110 MT	Node 111 WH	Node 112 MT
Temperature, °F	111.2643	97.44715	84.27492	97.44715	84.27493	110.1640	107.5624	111.3445
Density, lbm/ft**3	100.0000	125.0000	125.0000	125.0000	125.0000	100.0000	100.0000	100.0000
Node Results	Node 113 WH	Node 114 MT	Node 115 WH	Node 116 MT	Node 117 WH	Node 118 MT	Node 119 WH	Node 120 MT
Temperature, °F	108.9714	97.71533	88.52945	98.01148	97.68718	98.01148	97.68718	101.0023
Density, lbm/ft**3	100.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	125.0000
Node Results	Node 121 WH	Node 122 MT	Node 123 WH	Node 124 MT	Node 125 WH	Node 126 MT	Node 127 WH	Node 128 MT
Temperature, °F	89.94767	97.44715	84.27493	97.44715	84.27492	96.97317	84.52104	96.97317
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 129 WH	Node 130 MT	Node 131 WH	Node 132 MT	Node 133 WH	Node 134 MT	Node 135 WH	Node 136 MT
Temperature, °F	84.52104	96.97317	84.52104	96.97317	84.52104	96.97317	84.52104	96.97317
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 137 WH	Node 138 MT	Node 139 WH	Node 140 MT	Node 141 WH	Node 142 MT	Node 143 WH	Node 144 MT
Temperature, °F	84.52104	96.97317	84.52104	100.1272	85.14906	114.2266	111.2643	114.2266
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	100.0000	100.0000	100.0000
Node Results	Node 145 WH	Node 146 MT	Node 147 WH	Node 148 MT	Node 149 WH	Node 150 MT	Node 151 WH	Node 152 MT
Temperature, °F	111.2643	114.2266	111.2643	114.2266	111.2643	97.44715	84.27492	97.44715
Density, lbm/ft**3	100.0000	100.0000	100.0000	100.0000	100.0000	125.0000	125.0000	125.0000
Node Results	Node 153 WH	Node 154 MT	Node 155 WH	Node 156 MT	Node 157 WH	Node 158 MT	Node 159 WH	Node 160 MT
Temperature, °F	84.27492	110.1640	107.5624	97.44715	84.27492	128.9798	128.9794	123.5625
Density, lbm/ft**3	125.0000	100.0000	100.0000	125.0000	125.0000	490.0000	490.0000	490.0000
Node Results	Node 161 WH	Node 162 N	Node 163 N	Node 164 N	Node 165 N	Node 166 N	Node 167 N	Node 168 N
Temperature, °F	123.5622	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Node Results	Node 169 N	Node 170 N	Node 171 N	Node 172 N	Node 173 N	Node 174 N	Node 175 N	Node 176 NT
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	101.9559
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	145.0000
Node Results	Node 177 WH	Node 178 WT	Node 179 WH	Node 180 WT	Node 181 WH	Node 182 WT	Node 183 WH	Node 184 NT
Temperature, eF	99.07694	101.9510	99.06925	93.67201	92.18084	93.67201	92.18084	105.3100
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 185 WH	Node 186 WT	Node 187 WH	Node 188 WT	Node 189 WH	Node 190 WT	Node 191 WH	Node 192 N
Temperature, eF	101.7440	94.26114	92.39500	102.8107	99.55427	93.70848	92.12225	-459.6700
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	0.0000000
Node Results	Node 193 N	Node 194 N	Node 195 N	Node 196 N	Node 197 N	Node 198 N	Node 199 N	Node 200 N
Temperature, eF	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 201 AI	Node 202 N	Node 203 AI	Node 204 AI	Node 205 N	Node 206 N	Node 207 AI	Node 208 N
Temperature, eF	123.4174	-459.6700	130.8071	123.4174	-459.6700	-459.6700	123.4092	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	490.0000	490.0000	0.0000000	0.0000000	490.0000	0.0000000
Node Results	Node 209 N	Node 210 AI	Node 211 N	Node 212 AI	Node 213 AI	Node 214 N	Node 215 N	Node 216 AI
Temperature, eF	-459.6700	123.4174	-459.6700	125.2030	123.4125	-459.6700	-459.6700	123.4174
Density, lbm/ft**3	0.0000000	490.0000	0.0000000	490.0000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 217 N	Node 218 N	Node 219 AI	Node 220 N	Node 221 N	Node 222 AI	Node 223 N	Node 224 N
Temperature, eF	-459.6700	-459.6700	123.4156	-459.6700	-459.6700	123.4156	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 225 AI	Node 226 N	Node 227 N	Node 228 AI	Node 229 N	Node 230 N	Node 231 AI	Node 232 N
Temperature, eF	123.4125	-459.6700	-459.6700	130.8073	-459.6700	-459.6700	130.8024	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000
Node Results	Node 233 N	Node 234 AI	Node 235 N	Node 236 N	Node 237 AI	Node 238 N	Node 239 N	Node 240 AI
Temperature, eF	-459.6700	130.8087	-459.6700	-459.6700	125.2030	-459.6700	-459.6700	125.1970
Density, lbm/ft**3	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 241 N	Node 242 N	Node 243 AI	Node 244 N	Node 245 N	Node 246 AI	Node 247 N	Node 248 N
Temperature, eF	-459.6700	-459.6700	125.2104	-459.6700	-459.6700	125.2086	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 249 N	Node 250 N	Node 251 AI	Node 252 WT	Node 253 WH	Node 254 WT	Node 255 WH	Node 256 MT
Temperature, eF	-459.6700	-459.6700	147.0481	140.5385	140.5366	140.5263	140.5242	144.0367
Density, lbm/ft**3	0.0000000	0.0000000	7.1000002E-02	490.0000	490.0000	490.0000	490.0000	490.0000



Node Results	Node 257 WH	Node 258 WT	Node 259 WH	Node 260 WT	Node 261 WH	Node 262 N	Node 263 N	Node 264 AI
Temperature, eF	144.0062	135.4914	135.4877	137.2480	137.2454	-459.6700	-459.6700	141.1731
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	0.0000000	0.0000000	7.1000002E-02
Node Results	Node 265 WT	Node 266 WH	Node 267 WT	Node 268 WH	Node 269 WT	Node 270 WH	Node 271 WT	Node 272 WH
Temperature, eF	134.8048	134.8029	134.7802	134.7781	138.4252	138.4247	130.9772	130.9740
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 273 WT	Node 274 WH	Node 275 N	Node 276 N	Node 277 AI	Node 278 WT	Node 279 WH	Node 280 WT
Temperature, eF	132.5352	132.5329	-459.6700	-459.6700	141.1087	133.0263	133.0214	134.3382
Density, lbm/ft**3	490.0000	490.0000	0.0000000	0.0000000	7.1000002E-02	490.0000	490.0000	490.0000
Node Results	Node 281 WH	Node 282 WT	Node 283 WH	Node 284 WT	Node 285 WH	Node 286 WT	Node 287 WH	Node 288 WT
Temperature, eF	134.3362	134.3382	134.3362	134.2096	134.2074	134.0213	134.0186	134.1392
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 289 WH	Node 290 N	Node 291 WT	Node 292 WH	Node 293 WT	Node 294 WH	Node 295 WT	Node 296 WH
Temperature, eF	134.1367	-459.6700	117.8066	117.8069	122.0633	122.0630	112.4019	112.4014
Density, lbm/ft**3	490.0000	0.0000000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 297 WT	Node 298 WH	Node 299 N	Node 300 N	Node 301 WT	Node 302 WH	Node 303 WT	Node 304 WH
Temperature, eF	133.9201	133.9182	-459.6700	-459.6700	101.4399	97.02695	103.6970	100.8829
Density, lbm/ft**3	490.0000	490.0000	0.0000000	0.0000000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 305 WT	Node 306 WH	Node 307 WT	Node 308 WH	Node 309 WT	Node 310 WH	Node 311 WT	Node 312 WH
Temperature, eF	103.6970	100.8829	103.4172	96.15484	105.1100	101.5880	101.4399	97.02695
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 313 WT	Node 314 WH	Node 315 WT	Node 316 WH	Node 317 WT	Node 318 WH	Node 319 WT	Node 320 WH
Temperature, eF	101.0639	98.53799	98.15577	95.00427	100.4037	100.3044	98.15294	96.13336
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 321 WT	Node 322 WH	Node 323 WT	Node 324 WH	Node 325 WT	Node 326 WH	Node 327 WT	Node 328 WH
Temperature, eF	102.7712	101.5830	94.73694	90.77952	98.15577	95.00427	100.3821	100.3044
Density, lbm/ft**3	125.0000	125.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 329 WT	Node 330 WH	Node 331 WT	Node 332 WH	Node 333 WT	Node 334 WH	Node 335 WT	Node 336 WH
Temperature, eF	98.13053	94.98876	98.51998	101.0666	98.13053	94.98876	94.71074	90.76334
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 337 WT	Node 338 WH	Node 339 WT	Node 340 WH	Node 341 WT	Node 342 WH	Node 343 WT	Node 344 WH
Temperature, eF	102.7420	101.5830	101.4497	97.04483	105.1194	101.6051	103.4225	96.15580
Density, lbm/ft**3	125.0000	125.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000

Node Results	Node 345 WT	Node 346 WH	Node 347 WT	Node 348 WH	Node 349 WT	Node 350 WH	Node 351 WT	Node 352 WH
Temperature, °F	103.7022	100.8829	103.7022	100.8829	104.4202	96.25309	102.4702	98.31694
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	125.0000	125.0000	145.0000	145.0000
Node Results	Node 353 WT	Node 354 WH	Node 355 WT	Node 356 WH	Node 357 WT	Node 358 WH	Node 359 WT	Node 360 WH
Temperature, °F	142.1309	158.9583	141.3271	158.9571	108.7893	108.5510	108.7893	108.5510
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 361 WT	Node 362 WH	Node 363 WT	Node 364 WH	Node 365 WT	Node 366 WH	Node 367 WT	Node 368 WH
Temperature, °F	141.3209	158.9571	108.7695	108.5482	108.7695	108.5482	142.1332	158.9583
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 369 AI	Node 370 N	Node 371 N	Node 372 AI	Node 373 N	Node 374 N	Node 375 AI	Node 376 AI
Temperature, °F	123.0898	-459.6700	-459.6700	114.7858	-459.6700	-459.6700	114.7740	114.7494
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	7.1000002E-02
Node Results	Node 377 AI	Node 378 AI	Node 379 AI	Node 380 AI	Node 381 AI	Node 382 N	Node 383 N	Node 384 AI
Temperature, °F	114.7315	114.7702	114.7455	114.7276	114.7878	-459.6700	-459.6700	114.7193
Density, lbm/ft**3	490.0000	490.0000	7.1000002E-02	490.0000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 385 N	Node 386 N	Node 387 AI	Node 388 N	Node 389 N	Node 390 AI	Node 391 N	Node 392 N
Temperature, °F	-459.6700	-459.6700	114.7216	-459.6700	-459.6700	123.0759	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 393 N	Node 394 N	Node 395 N	Node 396 N	Node 397 N	Node 398 N	Node 399 N	Node 400 N
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 401 N	Node 402 N	Node 403 BI	Node 404 BI	Node 405 BI			
Temperature, °F	-459.6700	-459.6700	122.0000	122.0000	104.0000			
Density, lbm/ft**3	0.0000000	0.0000000	1.000000	1.000000	1.000000			

Path Results	Path 1 CR	Path 2 CR	Path 3 WP	Path 4 CR	Path 5 CR	Path 6 CR	Path 7 CR	Path 8 WP
Heat Rate, Btu/hr	1338.994	4226.171	5041.837	-5247.923	-1623.233	764.9966	2416.207	2884.189
HTC, Btu/ft <sup>2</sup> hr°F	0.1818	Rn 0.5737	NC 4.955	Ck 0.6054	NC 0.1872	Rn 0.1818	Rn 0.5736	NC 5.000
Path Results	Path 9 N	Path 10 N	Path 11 CR	Path 12 CR	Path 13 WP	Path 14 N	Path 15 N	Path 16 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	221.3783	698.6346	834.6404	0.0000000	0.0000000	8505.417
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1818	Rn 0.5736	NC 5.000	Ck 0.0000	N 0.0000	N 0.1791
Path Results	Path 17 CR	Path 18 WP	Path 19 CR	Path 20 CR	Path 21 CR	Path 22 CR	Path 23 WP	Path 24 N
Heat Rate, Btu/hr	28919.42	35094.13	1.1562628E-05	6.1521509E-04	620.6869	1958.789	2340.113	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.6090	NC 11.04	Ck 2.8365E-03	NC 0.1509	Rn 0.1818	Rn 0.5736	NC 5.000	Ck 0.0000
Path Results	Path 25 N	Path 26 CR	Path 27 CR	Path 28 WP	Path 29 N	Path 30 N	Path 31 CR	Path 32 CR
Heat Rate, Btu/hr	0.0000000	649.6523	2050.199	2449.319	0.0000000	0.0000000	1338.262	4227.126
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1818	Rn 0.5736	NC 5.000	Ck 0.0000	N 0.0000	N 0.1817	Rn 0.5740
Path Results	Path 33 WP	Path 34 CR	Path 35 CR	Path 36 CR	Path 37 CR	Path 38 WP	Path 39 N	Path 40 N
Heat Rate, Btu/hr	5049.737	-4565.621	-1428.629	257.0678	811.2650	969.1969	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	4.955	Ck 0.5851	NC 0.1831	Rn 0.1818	Rn 0.5736	NC 5.000	Ck 0.0000	N 0.0000
Path Results	Path 41 CR	Path 42 CR	Path 43 WP	Path 44 N	Path 45 N	Path 46 CR	Path 47 CR	Path 48 WP
Heat Rate, Btu/hr	236.3783	745.9730	891.1931	0.0000000	0.0000000	1328.270	4191.808	5007.842
HTC, Btu/ft <sup>2</sup> hr°F	0.1818	Rn 0.5736	NC 5.000	Ck 0.0000	N 0.0000	N 0.1818	Rn 0.5736	NC 5.000
Path Results	Path 49 N	Path 50 N	Path 51 CR	Path 52 CR	Path 53 WP	Path 54 CR	Path 55 CR	Path 56 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	508.9617	1502.881	1811.338	-243.6019	-121.9718	582.4293
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1838	Rn 0.5428	NC 4.876	Ck 0.3456	NC 0.1730	Rn 0.1838
Path Results	Path 57 CR	Path 58 WP	Path 59 CR	Path 60 CR	Path 61 CR	Path 62 CR	Path 63 WP	Path 64 N
Heat Rate, Btu/hr	1719.819	2072.801	-278.7653	-139.5782	1297.236	4093.868	4890.837	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5428	NC 4.876	Ck 0.3456	NC 0.1730	Rn 0.1818	Rn 0.5736	NC 5.000	Ck 0.0000
Path Results	Path 65 N	Path 66 CR	Path 67 CR	Path 68 WP	Path 69 N	Path 70 N	Path 71 CR	Path 72 CR
Heat Rate, Btu/hr	0.0000000	540.5149	1705.779	2037.849	0.0000000	0.0000000	942.2056	3044.505
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1818	Rn 0.5736	NC 5.000	Ck 0.0000	N 0.0000	N 0.1873	Rn 0.6051
Path Results	Path 73 WP	Path 74 N	Path 75 N	Path 76 CR	Path 77 CR	Path 78 WP	Path 79 N	Path 80 N
Heat Rate, Btu/hr	3587.604	0.0000000	0.0000000	600.7814	1941.277	2387.575	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000	Ck 0.0000	N 0.0000	N 0.1873	Rn 0.6051	NC 5.000	Ck 0.0000	N 0.0000
Path Results	Path 81 CR	Path 82 CR	Path 83 WP	Path 84 CR	Path 85 CR	Path 86 CR	Path 87 CR	Path 88 WP
Heat Rate, Btu/hr	1533.989	4970.230	5979.902	-663.9752	-311.1654	1985.236	6432.303	7738.986
HTC, Btu/ft <sup>2</sup> hr°F	0.1872	Rn 0.6064	NC 11.04	Ck 0.3680	NC 0.1725	Rn 0.1872	Rn 0.6064	NC 11.04

Path Results	Path 89 CR	Path 90 CR	Path 91 CR	Path 92 CR	Path 93 WP	Path 94 N	Path 95 N	Path 96 CR
Heat Rate, Btu/hr	-859.2941	-402.6996	571.7110	1859.065	2239.090	0.0000000	0.0000000	1813.853
HTC, Btu/ft <sup>2</sup> hr°F	0.3680	NC 0.1725	Rn 0.1870	Rn 0.6081	NC 11.04	Ck 0.0000	N 0.0000	N 0.1947
Path Results	Path 97 CR	Path 98 WP	Path 99 N	Path 100 N	Path 101 CR	Path 102 CR	Path 103 WP	Path 104 N
Heat Rate, Btu/hr	4614.730	3245.758	0.0000000	0.0000000	185.9643	483.9307	340.1832	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4952	NC 2.320	Ck 0.0000	N 0.0000	N 0.1941	Rn 0.5051	NC 2.320	Ck 0.0000
Path Results	Path 105 N	Path 106 CR	Path 107 CR	Path 108 WP	Path 109 N	Path 110 N	Path 111 CR	Path 112 CR
Heat Rate, Btu/hr	0.0000000	314.0731	817.3052	574.5317	0.0000000	0.0000000	84.90492	220.9462
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1941	Rn 0.5051	NC 2.320	Ck 0.0000	N 0.0000	N 0.1941	Rn 0.5051
Path Results	Path 113 WP	Path 114 N	Path 115 N	Path 116 CR	Path 117 CR	Path 118 WP	Path 119 N	Path 120 N
Heat Rate, Btu/hr	155.3160	0.0000000	0.0000000	571.7933	1487.965	1045.978	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	2.320	Ck 0.0000	N 0.0000	N 0.1941	Rn 0.5051	NC 2.320	Ck 0.0000	N 0.0000
Path Results	Path 121 CR	Path 122 CR	Path 123 WP	Path 124 N	Path 125 N	Path 126 CR	Path 127 CR	Path 128 WP
Heat Rate, Btu/hr	89.78863	233.6554	154.2501	0.0000000	0.0000000	157.7546	504.2422	596.4112
HTC, Btu/ft <sup>2</sup> hr°F	0.1941	Rn 0.5051	NC 2.320	Ck 0.0000	N 0.0000	N 0.1831	Rn 0.5852	NC 5.000
Path Results	Path 129 N	Path 130 N	Path 131 CR	Path 132 CR	Path 133 WP	Path 134 N	Path 135 N	Path 136 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	578.9976	2809.602	3323.161	0.0000000	0.0000000	397.2908
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1831	Rn 0.5852	NC 5.000	Ck 0.0000	N 0.0000	N 0.1852
Path Results	Path 137 CR	Path 138 WP	Path 139 N	Path 140 N	Path 141 CR	Path 142 CR	Path 143 WP	Path 144 N
Heat Rate, Btu/hr	1026.474	723.6887	0.0000000	0.0000000	1585.124	3990.137	2815.590	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4888	NC 2.320	Ck 0.0000	N 0.0000	N 0.1897	Rn 0.4776	NC 2.320	Ck 0.0000
Path Results	Path 145 N	Path 146 CR	Path 147 CR	Path 148 WP	Path 149 N	Path 150 N	Path 151 CR	Path 152 CR
Heat Rate, Btu/hr	0.0000000	494.0244	1573.585	1903.673	0.0000000	0.0000000	1713.544	5435.271
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1832	Rn 0.5835	NC 11.04	Ck 0.0000	N 0.0000	N 0.1834	Rn 0.5816
Path Results	Path 153 WP	Path 154 CR	Path 155 CR	Path 156 CR	Path 157 CR	Path 158 WP	Path 159 CR	Path 160 CR
Heat Rate, Btu/hr	6566.989	-859.2952	-402.7000	509.1674	1615.052	1951.334	-255.3334	-119.6594
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.3680	NC 0.1725	Rn 0.1834	Rn 0.5816	NC 11.04	Ck 0.3680	NC 0.1725
Path Results	Path 161 CR	Path 162 CR	Path 163 WP	Path 164 N	Path 165 N	Path 166 CR	Path 167 CR	Path 168 WP
Heat Rate, Btu/hr	1140.624	3466.555	4123.368	0.0000000	0.0000000	127.3107	406.9323	481.3143
HTC, Btu/ft <sup>2</sup> hr°F	0.1848	Rn 0.5615	NC 5.000	Ck 0.0000	N 0.0000	N 0.1831	Rn 0.5352	NC 5.000
Path Results	Path 169 N	Path 170 N	Path 171 CR	Path 172 CR	Path 173 WP	Path 174 N	Path 175 N	Path 176 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	765.5250	2446.902	2894.164	0.0000000	0.0000000	254.9989
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1831	Rn 0.5852	NC 5.000	Ck 0.0000	N 0.0000	N 0.1818	Rn

Path Results	Path 177 CR	Path 178 WP	Path 179 N	Path 180 N	Path 181 CR	Path 182 CR	Path 183 WP	Path 184 N
Heat Rate, Btu/hr	804.7357	961.3965	0.000000	0.000000	216.7232	683.9438	617.0896	0.000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5736 NC	5.000 Ck	0.0000 N	0.0000 N	0.1818 Rn	0.5736 NC	5.000 Ck	0.0000 N
Path Results	Path 185 N	Path 186 CR	Path 187 CR	Path 188 WP	Path 189 N	Path 190 N	Path 191 CR	Path 192 CR
Heat Rate, Btu/hr	0.000000	151.5511	478.2709	571.3776	0.000000	0.000000	174.8268	551.7255
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1818 Rn	0.5736 NC	5.000 Ck	0.0000 N	0.0000 N	0.1818 Rn	0.5736 NC
Path Results	Path 193 WP	Path 194 N	Path 195 N	Path 196 CR	Path 197 CR	Path 198 WP	Path 199 N	Path 200 N
Heat Rate, Btu/hr	659.1319	0.000000	0.000000	530.6873	1674.764	2000.797	0.000000	0.000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000 Ck	0.0000 N	0.0000 N	0.1818 Rn	0.5736 NC	5.000 Ck	0.0000 N	0.0000 N
Path Results	Path 201 CR	Path 202 CR	Path 203 WP	Path 204 N	Path 205 N	Path 206 CR	Path 207 CR	Path 208 WP
Heat Rate, Btu/hr	520.3425	1642.118	1961.795	0.000000	0.000000	217.2404	685.5761	819.0396
HTC, Btu/ft <sup>2</sup> hr°F	0.1818 Rn	0.5736 NC	5.000 Ck	0.0000 N	0.0000 N	0.1818 Rn	0.5736 NC	5.000 Ck
Path Results	Path 209 N	Path 210 N	Path 211 CR	Path 212 CR	Path 213 WP	Path 214 N	Path 215 N	Path 216 CR
Heat Rate, Btu/hr	0.000000	0.000000	313.8597	1014.160	1195.073	0.000000	0.000000	99.18097
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1873 Rn	0.6051 NC	5.000 Ck	0.0000 N	0.0000 N	0.1941 Rn
Path Results	Path 217 CR	Path 218 WP	Path 219 N	Path 220 N	Path 221 CR	Path 222 CR	Path 223 WP	Path 224 N
Heat Rate, Btu/hr	256.0964	181.4311	0.000000	0.000000	166.8044	434.0712	305.1341	0.000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5051 NC	2.320 Ck	0.0000 N	0.0000 N	0.1941 Rn	0.5051 NC	2.320 Ck	0.0000 N
Path Results	Path 225 N	Path 226 CR	Path 227 CR	Path 228 WP	Path 229 N	Path 230 N	Path 231 CR	Path 232 CR
Heat Rate, Btu/hr	0.000000	345.6307	899.4268	632.2597	0.000000	0.000000	93.92138	244.4095
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1941 Rn	0.5051 NC	2.320 Ck	0.0000 N	0.0000 N	0.1941 Rn	0.5051 NC
Path Results	Path 233 WP	Path 234 N	Path 235 N	Path 236 CR	Path 237 CR	Path 238 WP	Path 239 N	Path 240 N
Heat Rate, Btu/hr	171.8097	0.000000	0.000000	141.1489	451.1641	533.6311	0.000000	0.000000
HTC, Btu/ft <sup>2</sup> hr°F	2.320 Ck	0.0000 N	0.0000 N	0.1831 Rn	0.5852 NC	5.000 Ck	0.0000 N	0.0000 N
Path Results	Path 241 CR	Path 242 CR	Path 243 WP	Path 244 N	Path 245 N	Path 246 CR	Path 247 CR	Path 248 WP
Heat Rate, Btu/hr	513.6712	1641.884	1941.999	0.000000	0.000000	249.1765	643.7938	453.8898
HTC, Btu/ft <sup>2</sup> hr°F	0.1831 Rn	0.5852 NC	5.000 Ck	0.0000 N	0.0000 N	0.1892 Rn	0.4888 NC	2.320 Ck
Path Results	Path 249 N	Path 250 N	Path 251 CR	Path 252 CR	Path 253 WP	Path 254 N	Path 255 N	Path 256 CR
Heat Rate, Btu/hr	0.000000	0.000000	314.9557	1006.715	1190.730	0.000000	0.000000	11363.65
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1831 Rn	0.5852 NC	5.000 Ck	0.0000 N	0.0000 N	0.1841 Rn
Path Results	Path 257 CR	Path 258 WP	Path 259 CR	Path 260 CR	Path 261 CR	Path 262 CR	Path 263 WP	Path 264 CR
Heat Rate, Btu/hr	38470.56	42572.54	-43.34132	-7715.248	11315.70	38311.31	42399.20	-42.99570
HTC, Btu/ft <sup>2</sup> hr°F	0.6233 NC	11.05 Ck	1.0000E-03 XT	0.1780 Rn	0.1841 Rn	0.6234 NC	11.05 Ck	1.0000E-03 XT

Path Results	Path 265 CR	Path 266 CR	Path 267 CR	Path 268 WP	Path 269 N	Path 270 N	Path 271 CR	Path 272 CR
Heat Rate, Btu/hr	-7452.206	3344.187	18.55575	3034.263	0.0000000	0.0000000	3329.306	18.47319
HTC, Btu/ft <sup>2</sup> hr°F	0.1780	Rn 0.1802	Rn 1.0000E-03 XT	11.04	Ck 0.0000	N 0.0000	N 0.1802	Rn 1.0000E-03 XT
Path Results	Path 273 WP	Path 274 N	Path 275 N	Path 276 CR	Path 277 CR	Path 278 WP	Path 279 CR	Path 280 CR
Heat Rate, Btu/hr	3020.781	0.0000000	0.0000000	11882.41	41503.45	45354.02	-49.55337	-9087.092
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.0000	N 0.0000	N 0.1898	Rn 0.6628	NC	11.05	Ck 1.0000E-03 XT
Path Results	Path 281 CR	Path 282 CR	Path 283 WP	Path 284 N	Path 285 N	Path 286 CR	Path 287 CR	Path 288 WP
Heat Rate, Btu/hr	12496.79	67.74060	11290.32	0.0000000	0.0000000	9840.564	33679.49	36744.73
HTC, Btu/ft <sup>2</sup> hr°F	0.1845	Rn 1.0000E-03 XT	11.04	Ck 0.0000	N 0.0000	N 0.1856	Rn 0.6353	NC 11.05
Path Results	Path 289 CR	Path 290 CR	Path 291 CR	Path 292 CR	Path 293 WP	Path 294 N	Path 295 N	Path 296 CR
Heat Rate, Btu/hr	-51.40629	-9362.232	10100.81	55.70340	9129.104	0.0000000	0.0000000	18.78932
HTC, Btu/ft <sup>2</sup> hr°F	1.0000E-03 XT	0.1825	Rn 0.1613	Rn 1.0000E-03 XT	11.04	Ck 0.0000	N 0.0000	N 0.1946
Path Results	Path 297 CR	Path 298 N	Path 299 N	Path 300 CR	Path 301 CR	Path 302 CR	Path 303 CR	Path 304 N
Heat Rate, Btu/hr	23.10835	0.0000000	0.0000000	-26.95681	-35.42854	18.78932	23.10835	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2393	NC 0.0000	N 0.0000	N 0.2024	Rn 0.2661	NC 0.1946	Rn 0.2393	NC 0.0000
Path Results	Path 305 N	Path 306 N	Path 307 N	Path 308 CR	Path 309 CR	Path 310 N	Path 311 N	Path 312 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	9.707833	11.95561	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1946	Rn 0.2396	NC 0.0000	N 0.0000	N 0.0000
Path Results	Path 313 N	Path 314 CR	Path 315 CR	Path 316 N	Path 317 N	Path 318 CR	Path 319 CR	Path 320 CR
Heat Rate, Btu/hr	0.0000000	18.78932	23.10835	0.0000000	0.0000000	-23.37653	-30.47661	8.436508
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1946	Rn 0.2393	NC 0.0000	N 0.0000	N 0.1946	Rn 0.2563	NC 0.1946
Path Results	Path 321 CR	Path 322 N	Path 323 N	Path 324 N	Path 325 N	Path 326 CR	Path 327 CR	Path 328 N
Heat Rate, Btu/hr	10.38427	0.0000000	0.0000000	0.0000000	0.0000000	7.006265	8.616526	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2395	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1946	Rn 0.2393	NC 0.0000
Path Results	Path 329 N	Path 330 N	Path 331 N	Path 332 CR	Path 333 CR	Path 334 N	Path 335 N	Path 336 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	19.98119	24.58146	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1946	Rn 0.2394	NC 0.0000	N 0.0000	N 0.0000
Path Results	Path 337 N	Path 338 CR	Path 339 CR	Path 340 N	Path 341 N	Path 342 N	Path 343 N	Path 344 CR
Heat Rate, Btu/hr	0.0000000	19.98119	24.58146	0.0000000	0.0000000	0.0000000	0.0000000	8.436508
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1946	Rn 0.2394	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1946
Path Results	Path 345 CR	Path 346 N	Path 347 N	Path 348 N	Path 349 N	Path 350 CR	Path 351 CR	Path 352 N
Heat Rate, Btu/hr	10.38427	0.0000000	0.0000000	0.0000000	0.0000000	10.05182	13.21044	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2395	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.2024	Rn 0.2661	NC 0.0000



Path Results	Path 353 N	Path 354 N	Path 355 N	Path 356 CR	Path 357 CR	Path 358 N	Path 359 N	Path 360 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	11.41941	15.01663	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.2024	Rn 0.2662	NC 0.0000	N 0.0000	N 0.0000
Path Results	Path 361 N	Path 362 CR	Path 363 CR	Path 364 N	Path 365 N	Path 366 N	Path 367 N	Path 368 CR
Heat Rate, Btu/hr	0.0000000	26.66639	37.68645	0.0000000	0.0000000	0.0000000	0.0000000	23.37653
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.2024	Rn 0.2661	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1966
Path Results	Path 369 CR	Path 370 N	Path 371 N	Path 372 N	Path 373 N	Path 374 CR	Path 375 CR	Path 376 N
Heat Rate, Btu/hr	30.47661	0.0000000	0.0000000	0.0000000	0.0000000	10.49588	13.69488	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2563	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1966	Rn 0.2565	NC 0.0000
Path Results	Path 377 N	Path 378 N	Path 379 N	Path 380 CR	Path 381 CR	Path 382 N	Path 383 N	Path 384 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	9.711375	12.64827	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.1966	Rn 0.2561	NC 0.0000	N 0.0000	N 0.0000
Path Results	Path 385 N	Path 386 CR	Path 387 CR	Path 388 N	Path 389 N	Path 390 N	Path 391 N	Path 392 CR
Heat Rate, Btu/hr	0.0000000	10.10683	13.16642	0.0000000	0.0000000	0.0000000	0.0000000	16784.34
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1966	Rn 0.2561	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.6776
Path Results	Path 393 CR	Path 394 WP	Path 395 CR	Path 396 CR	Path 397 CR	Path 398 CR	Path 399 WP	Path 400 CR
Heat Rate, Btu/hr	8732.441	20272.14	9536.583	5491.007	2678.081	1614.382	3759.941	1754.495
HTC, Btu/ft <sup>2</sup> hr°F	0.3526	NC 2709.	Ck 0.3603	NC 0.2075	Rn 0.6776	Rn 0.6085	NC 2709.	Ck 0.4170
Path Results	Path 401 CR	Path 402 CR	Path 403 CR	Path 404 CR	Path 405 WP	Path 406 CR	Path 407 WP	Path 408 CR
Heat Rate, Btu/hr	872.9386	64444.43	3679.363	1476.445	2577.915	4878.103	2438.965	33921.07
HTC, Btu/ft <sup>2</sup> hr°F	0.2075	Rn 71.42	NC 0.6835	Rn 0.2743	NC 2709.	Ck 0.7000	XT 1116.	Ck 0.7000
Path Results	Path 409 WP	Path 410 N	Path 411 N	Path 412 CR	Path 413 CR	Path 414 WP	Path 415 CR	Path 416 CR
Heat Rate, Btu/hr	11960.70	0.0000000	0.0000000	15845.90	8425.497	19736.98	9778.257	5424.389
HTC, Btu/ft <sup>2</sup> hr°F	1296.	Ck 0.0000	N 0.0000	N 0.6583	Rn 0.3500	NC 2709.	Ck 0.3632	NC 0.2015
Path Results	Path 417 CR	Path 418 CR	Path 419 WP	Path 420 CR	Path 421 CR	Path 422 CR	Path 423 CR	Path 424 CR
Heat Rate, Btu/hr	2423.787	1494.242	3229.496	1717.324	823.6520	52777.65	2555.392	1020.346
HTC, Btu/ft <sup>2</sup> hr°F	0.6582	Rn 0.4058	NC 2709.	Ck 0.4200	NC 0.2015	Rn 61.12	NC 0.6643	Rn 0.2652
Path Results	Path 425 WP	Path 426 CR	Path 427 WP	Path 428 CR	Path 429 WP	Path 430 N	Path 431 N	Path 432 CR
Heat Rate, Btu/hr	1787.877	4089.568	2044.708	20310.17	10155.24	0.0000000	0.0000000	6641.097
HTC, Btu/ft <sup>2</sup> hr°F	2709.	Ck 0.7000	XT 1116.	Ck 0.7000	XT 1296.	Ck 0.0000	N 0.0000	N 0.6552
Path Results	Path 433 CR	Path 434 WP	Path 435 CR	Path 436 CR	Path 437 CR	Path 438 CR	Path 439 WP	Path 440 CR
Heat Rate, Btu/hr	3837.803	7954.379	3531.310	1898.570	6938.981	3769.903	9458.279	5429.254
HTC, Btu/ft <sup>2</sup> hr°F	0.3787	NC 1296.	Ck 0.3709	NC 0.1994	Rn 0.6574	Rn 0.3572	NC 3098.	Ck 0.3910

Path Results	Path 441 CR	Path 442 CR	Path 443 CR	Path 444 WP	Path 445 CR	Path 446 CR	Path 447 CR	Path 448 CR
Heat Rate, Btu/hr	2778.438	605.3248	328.8690	825.0968	473.6232	242.3762	1682.105	919.8628
HTC, Btu/ft <sup>2</sup> hr°F	0.2001	Rn 0.6574	Rn 0.3572	NC	0.2001	Rn 0.6572	Rn 0.3594	NC
Path Results	Path 449 WP	Path 450 CR	Path 451 CR	Path 452 CR	Path 453 CR	Path 454 WP	Path 455 CR	Path 456 CR
Heat Rate, Btu/hr	2260.296	1267.217	651.4137	3086.621	1972.815	4372.686	2547.421	1138.529
HTC, Btu/ft <sup>2</sup> hr°F	2709.	Ck 0.3891	NC 0.2000	Rn 0.6569	Rn 0.4198	NC	2409.	Ck 0.4473
Path Results	Path 457 CR	Path 458 CR	Path 459 WP	Path 460 CR	Path 461 CR	Path 462 CR	Path 463 CR	Path 464 WP
Heat Rate, Btu/hr	152.9540	97.19240	219.4969	130.6854	58.16251	70009.52	12202.62	6101.436
HTC, Btu/ft <sup>2</sup> hr°F	0.6571	Rn 0.4175	NC	2709.	Ck 0.4494	NC 0.2000	Rn 315.8	NC 0.7000
Path Results	Path 465 N	Path 466 N	Path 467 N	Path 468 N	Path 469 N	Path 470 N	Path 471 CR	Path 472 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	1254.401	3643.472
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1832	Rn 0.5322
Path Results	Path 473 WP	Path 474 N	Path 475 N	Path 476 CR	Path 477 CR	Path 478 WP	Path 479 CR	Path 480 CR
Heat Rate, Btu/hr	4491.225	0.0000000	0.0000000	897.9319	2504.743	3192.748	-307.2886	-175.0091
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.0000	N 0.0000	N 0.1843	Rn 0.5141	NC	11.04	Ck 0.3055
Path Results	Path 481 CR	Path 482 CR	Path 483 WP	Path 484 CR	Path 485 CR	Path 486 CR	Path 487 CR	Path 488 WP
Heat Rate, Btu/hr	1136.151	3169.245	4039.777	-388.9380	-221.4386	328.9877	922.4941	1176.564
HTC, Btu/ft <sup>2</sup> hr°F	0.1843	Rn 0.5141	NC	11.04	Ck 0.3055	NC 0.1739	Rn 0.1842	Rn 0.5164
Path Results	Path 489 N	Path 490 N	Path 491 CR	Path 492 CR	Path 493 WP	Path 494 N	Path 495 N	Path 496 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1789.145	4856.264	6076.217	0.0000000	0.0000000	2191.358
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1850	Rn 0.5021	NC	11.04	Ck 0.0000	N 0.0000
Path Results	Path 497 CR	Path 498 WP	Path 499 N	Path 500 N	Path 501 CR	Path 502 CR	Path 503 WP	Path 504 CR
Heat Rate, Btu/hr	6364.912	7845.883	0.0000000	0.0000000	1237.673	3617.966	4495.056	-2417.359
HTC, Btu/ft <sup>2</sup> hr°F	0.5322	NC	11.04	Ck 0.0000	N 0.0000	N 0.1831	Rn 0.5351	NC
Path Results	Path 505 CR	Path 506 CR	Path 507 CR	Path 508 WP	Path 509 N	Path 510 N	Path 511 CR	Path 512 CR
Heat Rate, Btu/hr	-887.5254	777.6565	2135.824	2672.144	0.0000000	0.0000000	1821.635	4751.845
HTC, Btu/ft <sup>2</sup> hr°F	0.1778	Rn 0.1776	Rn 0.4877	NC	11.04	Ck 0.0000	N 0.0000	N 0.1786
Path Results	Path 513 WP	Path 514 CR	Path 515 CR	Path 516 CR	Path 517 CR	Path 518 WP	Path 519 CR	Path 520 CR
Heat Rate, Btu/hr	6158.820	-727.2188	-430.5345	1794.823	4929.759	6168.223	-4912.034	-1789.556
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ck 0.2925	NC 0.1732	Rn 0.1776	Rn 0.4878	NC	11.04	Ck 0.4873
Path Results	Path 521 CR	Path 522 CR	Path 523 WP	Path 524 CR	Path 525 CR	Path 526 CR	Path 527 CR	Path 528 WP
Heat Rate, Btu/hr	351.0343	860.4373	1108.831	-154.5251	-93.58312	194.9767	573.2640	706.2578
HTC, Btu/ft <sup>2</sup> hr°F	0.1797	Rn 0.4406	NC	4.876	Ck 0.2877	NC 0.1743	Rn 0.1760	Rn 0.5175

Path Results	Path 529 N	Path 530 N	Path 531 CR	Path 532 CR	Path 533 WP	Path 534 N	Path 535 N	Path 536 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1472.478	4044.143	5059.656	0.0000000	0.0000000	1815.802
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1776	Rn 0.4877	NC 11.04	Ch 0.0000	N 0.0000	N 0.1786
Path Results	Path 537 CR	Path 538 WP	Path 539 CR	Path 540 CR	Path 541 CR	Path 542 CR	Path 543 WP	Path 544 N
Heat Rate, Btu/hr	4733.094	6135.460	-727.2188	-410.5345	792.5713	2175.608	2722.243	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4655	NC 11.04	Ch 0.2925	MC 0.1732	Rn 0.1775	Rn 0.4873	NC 11.04	Ch 0.0000
Path Results	Path 545 N	Path 546 CR	Path 547 CR	Path 548 WP	Path 549 CR	Path 550 CR	Path 551 CR	Path 552 CR
Heat Rate, Btu/hr	0.0000000	886.7889	2408.173	2976.561	-3607.973	-1234.963	1566.338	4299.596
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1777	Rn 0.4837	NC 11.04	Ch 0.5347	NC 0.1830	Rn 0.1775	Rn 0.4873
Path Results	Path 553 WP	Path 554 N	Path 555 N	Path 556 CR	Path 557 CR	Path 558 WP	Path 559 N	Path 560 N
Heat Rate, Btu/hr	5379.898	0.0000000	0.0000000	215.0285	631.9707	778.6485	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ch 0.0000	N 0.0000	N 0.1760	Rn 0.5171	NC 11.04	Ch 0.0000	N 0.0000
Path Results	Path 561 CR	Path 562 CR	Path 563 WP	Path 564 CR	Path 565 CR	Path 566 CR	Path 567 CR	Path 568 WP
Heat Rate, Btu/hr	266.5042	652.7737	841.2997	-117.6901	-71.27518	2185.839	6344.397	7825.312
HTC, Btu/ft <sup>2</sup> hr°F	0.1797	Rn 0.4401	NC 4.876	Ch 0.2877	MC 0.1743	Rn 0.1832	Rn 0.5318	NC 11.04
Path Results	Path 569 N	Path 570 N	Path 571 CR	Path 572 CR	Path 573 WP	Path 574 N	Path 575 N	Path 576 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1783.836	4837.717	6057.418	0.0000000	0.0000000	328.1520
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1850	Rn 0.5016	NC 11.04	Ch 0.0000	N 0.0000	N 0.1842
Path Results	Path 577 CR	Path 578 WP	Path 579 N	Path 580 N	Path 581 CR	Path 582 CR	Path 583 WP	Path 584 CR
Heat Rate, Btu/hr	919.5045	1173.673	0.0000000	0.0000000	1133.224	3158.835	4029.772	-388.9380
HTC, Btu/ft <sup>2</sup> hr°F	0.5160	NC 11.04	Ch 0.0000	N 0.0000	N 0.1843	Rn 0.5137	NC 11.04	Ch 0.3055
Path Results	Path 585 CR	Path 586 CR	Path 587 CR	Path 588 WP	Path 589 CR	Path 590 CR	Path 591 CR	Path 592 CR
Heat Rate, Btu/hr	-221.4385	314.1796	875.7683	1117.231	-107.8308	-61.39253	866.7428	2383.160
HTC, Btu/ft <sup>2</sup> hr°F	0.1739	Rn 0.1843	Rn 0.5137	NC 11.04	Ch 0.3055	NC 0.1739	Rn 0.1846	Rn 0.5077
Path Results	Path 593 WP	Path 594 N	Path 595 N	Path 596 CR	Path 597 CR	Path 598 WP	Path 599 N	Path 600 N
Heat Rate, Btu/hr	2981.095	0.0000000	0.0000000	864.6364	2465.157	3052.515	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000	Ch 0.0000	N 0.0000	N 0.1837	Rn 0.5238	NC 11.04	Ch 0.0000	N 0.0000
Path Results	Path 601 CR	Path 602 CR	Path 603 WP	Path 604 CR	Path 605 N	Path 606 CR	Path 607 CR	Path 608 WP
Heat Rate, Btu/hr	-6983.042	-44.15512	-9802.150	-22365.48	0.0000000	-6906.970	-34.75861	-7248.974
HTC, Btu/ft <sup>2</sup> hr°F	0.2034	Rn 1.0000E-03	XT 11.04	Ch 3.000	XT 0.0000	N 0.1987	Rn 1.0000E-03	XT 11.04
Path Results	Path 609 CR	Path 610 N	Path 611 CR	Path 612 CR	Path 613 WP	Path 614 CR	Path 615 CR	Path 616 CR
Heat Rate, Btu/hr	-12314.78	0.0000000	872.1889	1975.509	2544.160	-9.486952	-1760.753	1037.131
HTC, Btu/ft <sup>2</sup> hr°F	3.000	XT 0.0000	N 0.1826	Rn 0.4136	NC 11.04	Ch 1.0000E-03	XT 0.1856	Rn 0.1826

Path Results	Path 617 CR	Path 618 WP	Path 619 CR	Path 620 CR	Path 621 CR	Path 622 CR	Path 623 WP	Path 624 CR
Heat Rate, Btu/hr	2349.102	3025.292	-11.28105	-2093.733	-6921.892	-34.84010	-7263.188	-12314.81
HTC, Btu/ft <sup>2</sup> hr°F	0.4136 NC	11.04 Ck	1.0000E-03 XT	0.1856 Rn	0.1987 Rn	1.0000E-03 XT	11.04 Ck	3.000 XT
Path Results	Path 625 N	Path 626 CR	Path 627 CR	Path 628 WP	Path 629 CR	Path 630 CR	Path 631 CR	Path 632 CR
Heat Rate, Btu/hr	0.0000000	865.9558	1957.346	2521.009	-9.488879	-1761.098	1030.578	2329.447
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.1826 Rn	0.4126 NC	11.04 Ck	1.0000E-03 XT	0.1856 Rn	0.1826 Rn	0.4126 NC
Path Results	Path 633 WP	Path 634 CR	Path 635 CR	Path 636 CR	Path 637 CR	Path 638 WP	Path 639 CR	Path 640 N
Heat Rate, Btu/hr	3000.265	-11.29276	-2095.891	-8641.985	-42.48325	-9421.687	-21661.98	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	11.04 Ck	1.0000E-03 XT	0.1856 Rn	0.2034 Rn	1.0000E-03 XT	11.04 Ck	3.000 XT	0.0000 N
Path Results	Path 641 CR	Path 642 CR	Path 643 N	Path 644 N	Path 645 N	Path 646 N	Path 647 CR	Path 648 CR
Heat Rate, Btu/hr	3.756856	3.715339	0.0000000	0.0000000	0.0000000	0.0000000	3.507865	3.303759
HTC, Btu/ft <sup>2</sup> hr°F	0.1938 Rn	0.1916 NC	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.1855 Rn	0.1747 NC
Path Results	Path 649 N	Path 650 N	Path 651 N	Path 652 N	Path 653 CR	Path 654 CR	Path 655 Ck	Path 656 Ck
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	3.035570	2.873269	0.1204265	8.7562523E-02
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.1855 Rn	0.1756 NC	0.2353 Ck	0.2353 Ck
Path Results	Path 657 CR	Path 658 CR	Path 659 CR	Path 660 CR	Path 661 Ck	Path 662 Ck	Path 663 CR	Path 664 CR
Heat Rate, Btu/hr	-2.941512	-2.756514	2.141201	2.030026	8.4616338E-02	5.1435304E-02	-2.075213	-1.947982
HTC, Btu/ft <sup>2</sup> hr°F	0.1854 Rn	0.1738 NC	0.1855 Rn	0.1758 NC	0.2353 Ck	0.2353 Ck	0.1854 Rn	0.1740 NC
Path Results	Path 665 CR	Path 666 CR	Path 667 N	Path 668 N	Path 669 N	Path 670 N	Path 671 CR	Path 672 CR
Heat Rate, Btu/hr	2.982667	2.806729	0.0000000	0.0000000	0.0000000	0.0000000	2.715587	2.558274
HTC, Btu/ft <sup>2</sup> hr°F	0.1855 Rn	0.1745 NC	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.1854 Rn	0.1747 NC
Path Results	Path 673 N	Path 674 N	Path 675 N	Path 676 N	Path 677 CR	Path 678 CR	Path 679 N	Path 680 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	2.979550	2.804120	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.0000 N	0.0000 N	0.1854 Rn	0.1745 NC	0.0000 N	0.0000 N
Path Results	Path 681 N	Path 682 N	Path 683 CR	Path 684 CR	Path 685 N	Path 686 N	Path 687 N	Path 688 N
Heat Rate, Btu/hr	0.0000000	0.0000000	3.641847	3.565558	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1937 Rn	0.1897 NC	0.0000 N	0.0000 N	0.0000 N	0.0000 N
Path Results	Path 689 CR	Path 690 CR	Path 691 WP	Path 692 N	Path 693 N	Path 694 CR	Path 695 CR	Path 696 WP
Heat Rate, Btu/hr	2001.411	3875.794	2938.689	0.0000000	0.0000000	689.2018	1008.034	851.7525
HTC, Btu/ft <sup>2</sup> hr°F	0.1918 Rn	0.3714 NC	1296. Ck	0.0000 N	0.0000 N	0.1939 Rn	0.2836 NC	3098. Ck
Path Results	Path 697 N	Path 698 N	Path 699 CR	Path 700 CR	Path 701 WP	Path 702 N	Path 703 N	Path 704 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	793.4186	4.194810	398.8081	0.0000000	0.0000000	509.0442
HTC, Btu/ft <sup>2</sup> hr°F	0.0000 N	0.0000 N	0.1891 Rn	1.0000E-03 XT	2409. Ck	0.0000 N	0.0000 N	0.2015 Rn

Path Results	Path 705 CR	Path 706 WP	Path 707 CR	Path 708 CR	Path 709 WP
Heat Rate, Btu/hr	794.2753	651.6617	361.1487	559.1414	460.1465
HTC, Btu/ft <sup>2</sup> hr°F	0.3144 NC 3098.	CK 0.1958	Rn 0.3031	NC 3098.	CK

(WLOOP(I),I=1,2): 0.00000000E+00 0.00000000E+00

Case 1 after step no. 3767, time (XA) is 8.00000 hrs. 9 rejected CM steps, next time step is 5.007524E-03 hrs.

Node Results	Node 1 AI	Node 2 AI	Node 3 AI	Node 4 N	Node 5 N	Node 6 BI	Node 7 N	Node 8 N
Temperature, °F	130.9191	141.8060	134.7727	-459.6700	-459.6700	77.00000	-459.6700	-459.6700
Density, lbm/ft**3	7.1000002E-02	7.1000002E-02	7.1000002E-02	0.0000000	0.0000000	1.000000	0.0000000	0.0000000
Node Results	Node 9 N	Node 10 N	Node 11 N	Node 12 BI	Node 13 BI	Node 14 N	Node 15 N	Node 16 N
Temperature, °F	-459.6700	-459.6700	-459.6700	105.1000	105.1000	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	1.000000	1.000000	0.0000000	0.0000000	0.0000000
Node Results	Node 17 BI	Node 18 BI	Node 19 N	Node 20 N	Node 21 N	Node 22 N	Node 23 N	Node 24 N
Temperature, °F	105.1000	105.1000	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	1.000000	1.000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 25 N	Node 26 N	Node 27 N	Node 28 N	Node 29 BI	Node 30 BI	Node 31 N	Node 32 N
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	105.1000	105.1000	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	1.000000	1.000000	0.0000000	0.0000000
Node Results	Node 33 N	Node 34 N	Node 35 N	Node 36 N	Node 37 N	Node 38 N	Node 39 N	Node 40 N
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 41 N	Node 42 N	Node 43 N	Node 44 N	Node 45 N	Node 46 N	Node 47 N	Node 48 N
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 49 AI	Node 50 AI	Node 51 AI	Node 52 AI	Node 53 N	Node 54 N	Node 55 BI	Node 56 WT
Temperature, °F	117.4532	117.3861	126.8542	126.6927	-459.6700	-459.6700	142.0000	101.9511
Density, lbm/ft**3	7.1000002E-02	7.1000002E-02	7.1000002E-02	7.1000002E-02	0.0000000	0.0000000	1.000000	125.0000
Node Results	Node 57 WH	Node 58 WT	Node 59 WH	Node 60 WT	Node 61 WH	Node 62 WT	Node 63 WH	Node 64 WT
Temperature, °F	106.6221	101.9063	88.84035	101.9063	88.84035	94.76361	77.00009	101.9063
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	145.0000	145.0000	125.0000
Node Results	Node 65 WH	Node 66 WT	Node 67 WH	Node 68 WT	Node 69 WH	Node 70 WT	Node 71 WH	Node 72 WT
Temperature, °F	88.84035	101.9063	88.84035	101.8160	103.1934	101.9063	88.84035	101.9063
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 73 WH	Node 74 WT	Node 75 WH	Node 76 WT	Node 77 WH	Node 78 WT	Node 79 WH	Node 80 WT
Temperature, °F	88.84035	101.9063	88.84035	105.4558	98.97504	105.4558	98.97504	101.9063
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000



Node Results	Node 81 WH	Node 82 WT	Node 83 WH	Node 84 WT	Node 85 WH	Node 86 WT	Node 87 WH	Node 88 WT
Temperature, °F	88.84035	101.9063	88.84035	106.7608	90.35068	106.7608	90.35068	104.4422
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	145.0000
Node Results	Node 89 WH	Node 90 WT	Node 91 WH	Node 92 WT	Node 93 WH	Node 94 WT	Node 95 WH	Node 96 WT
Temperature, °F	97.68824	104.4422	97.68824	104.0849	88.71859	124.9166	122.3889	124.3088
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	100.0000	100.0000	100.0000
Node Results	Node 97 WH	Node 98 WT	Node 99 WH	Node 100 WT	Node 101 WH	Node 102 WT	Node 103 WH	Node 104 WT
Temperature, °F	121.6608	124.3088	121.6608	124.3088	121.6608	124.3088	121.6608	124.3088
Density, lbm/ft**3	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
Node Results	Node 105 WH	Node 106 WT	Node 107 WH	Node 108 WT	Node 109 WH	Node 110 WT	Node 111 WH	Node 112 WT
Temperature, °F	121.6608	103.1939	88.84868	103.1939	88.84868	118.9804	116.6672	119.6307
Density, lbm/ft**3	100.0000	125.0000	125.0000	125.0000	125.0000	100.0000	100.0000	100.0000
Node Results	Node 113 WH	Node 114 WT	Node 115 WH	Node 116 WT	Node 117 WH	Node 118 WT	Node 119 WH	Node 120 WT
Temperature, °F	117.6616	101.5307	88.62950	101.8928	97.68813	101.8928	97.68813	106.2609
Density, lbm/ft**3	100.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	125.0000
Node Results	Node 121 WH	Node 122 WT	Node 123 WH	Node 124 WT	Node 125 WH	Node 126 WT	Node 127 WH	Node 128 WT
Temperature, °F	93.78887	103.1939	88.84868	103.1939	88.84868	101.9063	88.84035	101.9063
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 129 WH	Node 130 WT	Node 131 WH	Node 132 WT	Node 133 WH	Node 134 WT	Node 135 WH	Node 136 WT
Temperature, °F	88.84035	101.9063	88.84035	101.9063	88.84035	101.9063	88.84035	101.9063
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Node Results	Node 137 WH	Node 138 WT	Node 139 WH	Node 140 WT	Node 141 WH	Node 142 WT	Node 143 WH	Node 144 WT
Temperature, °F	88.84035	101.9063	88.84035	106.7608	90.35068	124.3088	121.6608	124.3088
Density, lbm/ft**3	125.0000	125.0000	125.0000	125.0000	125.0000	100.0000	100.0000	100.0000
Node Results	Node 145 WH	Node 146 WT	Node 147 WH	Node 148 WT	Node 149 WH	Node 150 WT	Node 151 WH	Node 152 WT
Temperature, °F	121.6608	124.3088	121.6608	124.3088	121.6608	103.1939	88.84868	103.1939
Density, lbm/ft**3	100.0000	100.0000	100.0000	100.0000	100.0000	125.0000	125.0000	125.0000
Node Results	Node 153 WH	Node 154 WT	Node 155 WH	Node 156 WT	Node 157 WH	Node 158 WT	Node 159 WH	Node 160 WT
Temperature, °F	88.84868	118.9804	116.6672	103.1939	88.84868	137.6924	137.6921	131.0911
Density, lbm/ft**3	125.0000	100.0000	100.0000	125.0000	125.0000	490.0000	490.0000	490.0000
Node Results	Node 161 WH	Node 162 N	Node 163 N	Node 164 N	Node 165 N	Node 166 N	Node 167 N	Node 168 N
Temperature, °F	131.0909	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Node Results	Node 169 N	Node 170 N	Node 171 N	Node 172 N	Node 173 N	Node 174 N	Node 175 N	Node 176 WT
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	107.7045
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	145.0000
Node Results	Node 177 WH	Node 178 WT	Node 179 WH	Node 180 WT	Node 181 WH	Node 182 WT	Node 183 WH	Node 184 WT
Temperature, °F	104.7284	107.6984	104.7191	94.93314	93.19276	94.93314	93.19276	112.9851
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 185 WH	Node 186 WT	Node 187 WH	Node 188 WT	Node 189 WH	Node 190 WT	Node 191 WH	Node 192 N
Temperature, °F	109.1136	95.94502	93.67630	209.5265	106.4415	95.13270	93.21040	-459.6700
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	0.0000000
Node Results	Node 193 N	Node 194 N	Node 195 N	Node 196 N	Node 197 N	Node 198 N	Node 199 N	Node 200 N
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 201 AI	Node 202 N	Node 203 AI	Node 204 AI	Node 205 N	Node 206 N	Node 207 AI	Node 208 N
Temperature, °F	129.1084	-459.6700	139.3116	129.1084	-459.6700	-459.6700	129.1011	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	490.0000	490.0000	0.0000000	0.0000000	490.0000	0.0000000
Node Results	Node 209 N	Node 210 AI	Node 211 N	Node 212 AI	Node 213 AI	Node 214 N	Node 215 N	Node 216 AI
Temperature, °F	-459.6700	129.1084	-459.6700	132.5416	129.1040	-459.6700	-459.6700	129.1086
Density, lbm/ft**3	0.0000000	490.0000	0.0000000	490.0000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 217 N	Node 218 N	Node 219 AI	Node 220 N	Node 221 N	Node 222 AI	Node 223 N	Node 224 N
Temperature, °F	-459.6700	-459.6700	139.1068	-459.6700	-459.6700	129.1068	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 225 AI	Node 226 N	Node 227 N	Node 228 AI	Node 229 N	Node 230 N	Node 231 AI	Node 232 N
Temperature, °F	129.1040	-459.6700	-459.6700	139.3120	-459.6700	-459.6700	139.3076	-459.6700
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000
Node Results	Node 233 N	Node 234 AI	Node 235 N	Node 236 N	Node 237 AI	Node 238 N	Node 239 N	Node 240 AI
Temperature, °F	-459.6700	139.3096	-459.6700	-459.6700	132.5416	-459.6700	-459.6700	132.5362
Density, lbm/ft**3	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 241 N	Node 242 N	Node 243 AI	Node 244 N	Node 245 N	Node 246 AI	Node 247 N	Node 248 N
Temperature, °F	-459.6700	-459.6700	132.5462	-459.6700	-459.6700	132.5467	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 249 N	Node 250 N	Node 251 AI	Node 252 WT	Node 253 WH	Node 254 WT	Node 255 WH	Node 256 WT
Temperature, °F	-459.6700	-459.6700	155.8682	149.3746	149.3725	149.3374	149.3352	153.2640
Density, lbm/ft**3	0.0000000	0.0000000	7.1000002E-02	490.0000	490.0000	490.0000	490.0000	490.0000

Node Results	Node 257 WH	Node 258 WT	Node 259 WH	Node 260 WT	Node 261 WH	Node 262 N	Node 263 N	Node 264 AI
Temperature, °F	153.2635	145.9925	145.9894	147.5464	147.5442	-459.6700	-459.6700	148.8678
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	0.0000000	0.0000000	7.1000002E-02
Node Results	Node 265 WT	Node 266 WH	Node 267 WT	Node 268 WH	Node 269 WT	Node 270 WH	Node 271 WT	Node 272 WH
Temperature, °F	142.4823	142.4803	142.4348	142.4326	146.5184	146.5180	140.2112	140.2085
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 273 WT	Node 274 WH	Node 275 N	Node 276 N	Node 277 AI	Node 278 WT	Node 279 WH	Node 280 WT
Temperature, °F	141.5813	141.5794	-459.6700	-459.6700	146.9506	139.0938	139.0887	140.1881
Density, lbm/ft**3	490.0000	490.0000	0.0000000	0.0000000	7.1000002E-02	490.0000	490.0000	490.0000
Node Results	Node 281 WH	Node 282 WT	Node 283 WH	Node 284 WT	Node 285 WH	Node 286 WT	Node 287 WH	Node 288 WT
Temperature, °F	140.1861	140.1881	140.1861	140.0783	140.0759	139.8905	139.8876	139.9912
Density, lbm/ft**3	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 289 WH	Node 290 N	Node 291 WT	Node 292 WH	Node 293 WT	Node 294 WH	Node 295 WT	Node 296 WH
Temperature, °F	139.9887	-459.6700	124.2683	124.2669	127.9227	127.9225	119.5461	119.5456
Density, lbm/ft**3	490.0000	0.0000000	490.0000	490.0000	490.0000	490.0000	490.0000	490.0000
Node Results	Node 297 WT	Node 298 WH	Node 299 N	Node 300 N	Node 301 WT	Node 302 WH	Node 303 WT	Node 304 WH
Temperature, °F	141.2189	141.2173	-459.6700	-459.6700	104.2959	99.89634	105.5186	100.8840
Density, lbm/ft**3	490.0000	490.0000	0.0000000	0.0000000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 305 WT	Node 306 WH	Node 307 WT	Node 308 WH	Node 309 WT	Node 310 WH	Node 311 WT	Node 312 WH
Temperature, °F	105.5186	100.8840	105.2079	96.36612	107.5111	103.8955	104.2959	99.89634
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 313 WT	Node 314 WH	Node 315 WT	Node 316 WH	Node 317 WT	Node 318 WH	Node 319 WT	Node 320 WH
Temperature, °F	103.6601	100.8321	100.1829	97.05187	101.6702	100.3044	100.1780	100.1575
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 321 WT	Node 322 WH	Node 323 WT	Node 324 WH	Node 325 WT	Node 326 WH	Node 327 WT	Node 328 WH
Temperature, °F	104.3457	101.5857	97.17390	93.33516	100.1829	97.05187	101.6454	100.3044
Density, lbm/ft**3	125.0000	125.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 329 WT	Node 330 WH	Node 331 WT	Node 332 WH	Node 333 WT	Node 334 WH	Node 335 WT	Node 336 WH
Temperature, °F	100.1525	97.03019	100.8118	103.6303	100.1525	97.03019	97.14247	93.1264
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 337 WT	Node 338 WH	Node 339 WT	Node 340 WH	Node 341 WT	Node 342 WH	Node 343 WT	Node 344 WH
Temperature, °F	104.3131	101.5857	104.2762	99.90558	107.4919	103.9043	105.1830	96.36822
Density, lbm/ft**3	125.0000	125.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000

Node Results	Node 345 WT	Node 346 WH	Node 347 WT	Node 348 WH	Node 349 WT	Node 350 WH	Node 351 WT	Node 352 WH
Temperature, °F	105.4938	100.8840	105.4938	100.8840	107.2144	99.08636	105.1692	101.0191
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	125.0000	125.0000	145.0000	145.0000
Node Results	Node 353 WT	Node 354 WH	Node 355 WT	Node 356 WH	Node 357 WT	Node 358 WH	Node 359 WT	Node 360 WH
Temperature, °F	142.7908	158.9718	141.7588	158.9670	109.7137	108.9622	109.7137	108.9622
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 361 WT	Node 362 WH	Node 363 WT	Node 364 WH	Node 365 WT	Node 366 WH	Node 367 WT	Node 368 WH
Temperature, °F	141.7914	158.9670	109.6906	108.9571	109.6906	108.9571	142.7853	158.9718
Density, lbm/ft**3	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000	145.0000
Node Results	Node 369 AI	Node 370 N	Node 371 N	Node 372 AI	Node 373 N	Node 374 N	Node 375 AI	Node 376 AI
Temperature, °F	125.8296	-459.6700	-459.6700	116.6950	-459.6700	-459.6700	116.6829	116.6582
Density, lbm/ft**3	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	7.1000002E-02
Node Results	Node 377 AI	Node 378 AI	Node 379 AI	Node 380 AI	Node 381 AI	Node 382 N	Node 383 N	Node 384 AI
Temperature, °F	116.6400	116.6792	116.6544	116.6362	116.6969	-459.6700	-459.6700	116.6275
Density, lbm/ft**3	490.0000	490.0000	7.1000002E-02	490.0000	490.0000	0.0000000	0.0000000	490.0000
Node Results	Node 385 N	Node 386 N	Node 387 AI	Node 388 N	Node 389 N	Node 390 AI	Node 391 N	Node 392 N
Temperature, °F	-459.6700	-459.6700	116.6297	-459.6700	-459.6700	125.7064	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	490.0000	0.0000000	0.0000000	490.0000	0.0000000	0.0000000
Node Results	Node 393 N	Node 394 N	Node 395 N	Node 396 N	Node 397 N	Node 398 N	Node 399 N	Node 400 N
Temperature, °F	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700	-459.6700
Density, lbm/ft**3	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Node Results	Node 401 N	Node 402 N	Node 403 BI	Node 404 BI	Node 405 BI			
Temperature, °F	-459.6700	-459.6700	122.0000	122.0000	104.0000			
Density, lbm/ft**3	0.0000000	0.0000000	1.000000	1.000000	1.000000			

Path Results	Path 1 CR	Path 2 CR	Path 3 WP	Path 4 CR	Path 5 CR	Path 6 CR	Path 7 CR	Path 8 WP
Heat Rate, Btu/hr	1400.540	4325.844	5206.538	-5602.175	-1771.395	801.5305	2477.229	2989.480
HTC, Btu/ft <sup>2</sup> hr°F	0.1868	Rn 0.5770	NC	4.955	Ck 0.6152	NC	0.1945	Rn 0.1868
Path Results	Path 9 N	Path 10 N	Path 11 CR	Path 12 CR	Path 13 WP	Path 14 N	Path 15 N	Path 16 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	231.9507	716.8724	865.1098	0.0000000	0.0000000	9227.975
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N	0.0000	N	0.1868	Rn 0.5773	NC	5.000
Path Results	Path 17 CR	Path 18 WP	Path 19 CR	Path 20 CR	Path 21 CR	Path 22 CR	Path 23 WP	Path 24 N
Heat Rate, Btu/hr	31234.91	38251.71	1.1251654E-03	1.9276895E-02	650.3291	2009.923	2425.542	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.6208	NC	11.04	Ck 8.8403E-03	NC	0.1509	Rn 0.1868	Rn 0.5773
Path Results	Path 25 N	Path 26 CR	Path 27 CR	Path 28 WP	Path 29 N	Path 30 N	Path 31 CR	Path 32 CR
Heat Rate, Btu/hr	0.0000000	680.6777	2103.739	2538.733	0.0000000	0.0000000	1403.324	4342.601
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N	0.1868	Rn 0.5773	NC	5.000	Ck 0.0000	N
Path Results	Path 33 WP	Path 34 CR	Path 35 CR	Path 36 CR	Path 37 CR	Path 38 WP	Path 39 N	Path 40 N
Heat Rate, Btu/hr	5237.518	-4840.783	-1543.723	269.3446	832.4429	1004.579	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	4.955	Ck 0.5937	NC	0.1868	Rn 0.5773	NC	5.000	Ck 0.0000
Path Results	Path 41 CR	Path 42 CR	Path 43 WP	Path 44 N	Path 45 N	Path 46 CR	Path 47 CR	Path 48 WP
Heat Rate, Btu/hr	247.6670	765.4455	923.7271	0.0000000	0.0000000	1391.704	4303.334	5390.659
HTC, Btu/ft <sup>2</sup> hr°F	0.1868	Rn 0.5773	NC	5.000	Ck 0.0000	N	0.0000	N
Path Results	Path 49 N	Path 50 N	Path 51 CR	Path 52 CR	Path 53 WP	Path 54 CR	Path 55 CR	Path 56 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	551.9743	1619.271	1983.843	-243.3876	-121.8924	631.6506
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N	0.0000	N	0.1868	Rn 0.5773	NC	5.000
Path Results	Path 57 CR	Path 58 WP	Path 59 CR	Path 60 CR	Path 61 CR	Path 62 CR	Path 63 WP	Path 64 N
Heat Rate, Btu/hr	1853.009	2270.206	-278.5201	-139.4873	1359.146	4200.738	5069.382	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5530	NC	4.876	Ck 0.3455	NC	0.1731	Rn 0.1868	Rn
Path Results	Path 65 N	Path 66 CR	Path 67 CR	Path 68 WP	Path 69 N	Path 70 N	Path 71 CR	Path 72 CR
Heat Rate, Btu/hr	0.0000000	566.3282	1750.308	2112.242	0.0000000	0.0000000	1025.733	3238.604
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N	0.1868	Rn 0.5773	NC	5.000	Ck 0.0000	N
Path Results	Path 73 WP	Path 74 N	Path 75 N	Path 76 CR	Path 77 CR	Path 78 WP	Path 79 N	Path 80 N
Heat Rate, Btu/hr	3865.360	0.0000000	0.0000000	654.0414	2065.041	2464.681	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000	Ck 0.0000	N	0.0000	N	0.1946	Rn 0.6144	NC
Path Results	Path 81 CR	Path 82 CR	Path 83 WP	Path 84 CR	Path 85 CR	Path 86 CR	Path 87 CR	Path 88 WP
Heat Rate, Btu/hr	1759.528	5707.356	6950.739	-663.8491	-311.1218	2271.121	7386.267	8995.611
HTC, Btu/ft <sup>2</sup> hr°F	0.1935	Rn 0.6276	NC	11.04	Ck 0.3680	NC	0.1725	Rn 0.1935



Path Results	Path 89 CR	Path 90 CR	Path 91 CR	Path 92 CR	Path 93 WP	Path 94 N	Path 95 N	Path 96 CR
Heat Rate, Btu/hr	-859.1310	-402.6433	656.2362	2137.241	2605.826	0.0000000	0.0000000	1758.223
HTC, Btu/ft <sup>2</sup> hr°F	0.3680	NC	0.1725	Rn 0.1933	Rn 0.6295	NC	11.04	Ch 0.0000
Path Results	Path 97 CR	Path 98 WP	Path 99 N	Path 100 N	Path 101 CR	Path 102 CR	Path 103 WP	Path 104 N
Heat Rate, Btu/hr	4166.571	2997.287	0.0000000	0.0000000	176.1438	423.1646	304.0957	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4829	NC	2.320	Ch 0.0000	N 0.0000	N 0.2034	Rn 0.4886	NC
Path Results	Path 105 N	Path 106 CR	Path 107 CR	Path 108 WP	Path 109 N	Path 110 N	Path 111 CR	Path 112 CR
Heat Rate, Btu/hr	0.0000000	297.4874	714.6781	513.5839	0.0000000	0.0000000	80.42122	193.2024
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N	0.2034	Rn 0.4886	NC	2.320	Ch 0.0000	N
Path Results	Path 113 WP	Path 114 N	Path 115 N	Path 116 CR	Path 117 CR	Path 118 WP	Path 119 N	Path 120 N
Heat Rate, Btu/hr	138.8397	0.0000000	0.0000000	541.5976	1301.124	935.0175	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	2.320	Ch 0.0000	N	0.0000	N	0.2034	Rn 0.4886	NC
Path Results	Path 121 CR	Path 122 CR	Path 123 WP	Path 124 N	Path 125 N	Path 126 CR	Path 127 CR	Path 128 WP
Heat Rate, Btu/hr	85.04722	204.3159	146.8260	0.0000000	0.0000000	170.3931	534.3128	639.2537
HTC, Btu/ft <sup>2</sup> hr°F	0.2034	Rn 0.4886	NC	2.320	Ch 0.0000	N	0.0000	N
Path Results	Path 129 N	Path 130 N	Path 131 CR	Path 132 CR	Path 133 WP	Path 134 N	Path 135 N	Path 136 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	949.4184	2977.154	3561.877	0.0000000	0.0000000	373.1492
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N	0.0000	N	0.1893	Rn 0.5937	NC	5.000
Path Results	Path 137 CR	Path 138 WP	Path 139 N	Path 140 N	Path 141 CR	Path 142 CR	Path 143 WP	Path 144 N
Heat Rate, Btu/hr	894.3436	643.4835	0.0000000	0.0000000	1528.542	3607.092	2597.315	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4723	NC	2.320	Ch 0.0000	N	0.0000	N	0.1893
Path Results	Path 145 N	Path 146 CR	Path 147 CR	Path 148 WP	Path 149 N	Path 150 N	Path 151 CR	Path 152 CR
Heat Rate, Btu/hr	0.0000000	564.0306	1806.508	2210.682	0.0000000	0.0000000	1954.402	6231.338
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N	0.1885	Rn 0.6038	NC	11.04	Ch 0.0000	N
Path Results	Path 153 WP	Path 154 CR	Path 155 CR	Path 156 CR	Path 157 CR	Path 158 WP	Path 159 CR	Path 160 CR
Heat Rate, Btu/hr	7614.815	-859.1487	-402.6494	580.7367	1851.598	2262.688	-255.2899	-119.6444
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ch 0.3680	NC	0.1725	Rn 0.1887	Rn 0.6016	NC	11.04
Path Results	Path 161 CR	Path 162 CR	Path 163 WP	Path 164 N	Path 165 N	Path 166 CR	Path 167 CR	Path 168 WP
Heat Rate, Btu/hr	1258.886	3787.044	4556.358	0.0000000	0.0000000	137.5102	431.1998	515.8890
HTC, Btu/ft <sup>2</sup> hr°F	0.1908	Rn 0.5740	NC	5.000	Ch 0.0000	N	0.0000	N
Path Results	Path 169 N	Path 170 N	Path 171 CR	Path 172 CR	Path 173 WP	Path 174 N	Path 175 N	Path 176 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	826.8549	2592.823	3102.063	0.0000000	0.0000000	267.1769
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N	0.0000	N	0.1893	Rn 0.5937	NC	5.000



Path Results	Path 177 CR	Path 178 WP	Path 179 N	Path 180 N	Path 181 CR	Path 182 CR	Path 183 WP	Path 184 N
Heat Rate, Btu/hr	828.7432	996.4933	0.0000000	0.0000000	227.0732	701.7980	846.9183	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.5773	NC	5.000	Ch 0.0000	N 0.0000	N 0.1868	Rn 0.5773	NC
Path Results	Path 185 N	Path 186 CR	Path 187 CR	Path 188 WP	Path 189 N	Path 190 N	Path 191 CR	Path 192 CR
Heat Rate, Btu/hr	0.0000000	158.7887	490.7561	592.2364	0.0000000	0.0000000	183.1760	566.1282
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1868	Rn 0.5773	NC	5.000	Ch 0.0000	N 0.0000	N 0.1868
Path Results	Path 193 WP	Path 194 N	Path 195 N	Path 196 CR	Path 197 CR	Path 198 WP	Path 199 N	Path 200 N
Heat Rate, Btu/hr	683.1942	0.0000000	0.0000000	556.0313	1718.484	2073.838	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000	Ch 0.0000	N 0.0000	N 0.1868	Rn 0.5773	NC	5.000	Ch 0.0000
Path Results	Path 201 CR	Path 202 CR	Path 203 WP	Path 204 N	Path 205 N	Path 206 CR	Path 207 CR	Path 208 WP
Heat Rate, Btu/hr	545.1925	1684.985	2033.412	0.0000000	0.0000000	227.6152	703.4729	846.9396
HTC, Btu/ft <sup>2</sup> hr°F	0.1868	Rn 0.5773	NC	5.000	Ch 0.0000	N 0.0000	N 0.1868	Rn 0.5773
Path Results	Path 209 N	Path 210 N	Path 211 CR	Path 212 CR	Path 213 WP	Path 214 N	Path 215 N	Path 216 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	341.6838	1078.817	1287.597	0.0000000	0.0000000	93.94337
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1946	Rn 0.6144	NC	5.000	Ch 0.0000	N 0.0000
Path Results	Path 217 CR	Path 218 WP	Path 219 N	Path 220 N	Path 221 CR	Path 222 CR	Path 223 WP	Path 224 N
Heat Rate, Btu/hr	225.6878	162.1844	0.0000000	0.0000000	157.9957	379.5659	272.7647	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4886	NC	2.320	Ch 0.0000	N 0.0000	N 0.2034	Rn 0.4886	NC
Path Results	Path 225 N	Path 226 CR	Path 227 CR	Path 228 WP	Path 229 N	Path 230 N	Path 231 CR	Path 232 CR
Heat Rate, Btu/hr	0.0000000	327.3784	786.4878	565.1880	0.0000000	0.0000000	88.96153	213.7195
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.2034	Rn 0.4886	NC	2.320	Ch 0.0000	N 0.0000	N 0.2034
Path Results	Path 233 WP	Path 234 N	Path 235 N	Path 236 CR	Path 237 CR	Path 238 WP	Path 239 N	Path 240 N
Heat Rate, Btu/hr	153.5837	0.0000000	0.0000000	152.4570	478.0694	571.9639	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	2.320	Ch 0.0000	N 0.0000	N 0.1893	Rn 0.5937	NC	5.000	Ch 0.0000
Path Results	Path 241 CR	Path 242 CR	Path 243 WP	Path 244 N	Path 245 N	Path 246 CR	Path 247 CR	Path 248 WP
Heat Rate, Btu/hr	554.8238	1739.798	2081.500	0.0000000	0.0000000	234.0352	560.9227	403.5860
HTC, Btu/ft <sup>2</sup> hr°F	0.1893	Rn 0.5937	NC	5.000	Ch 0.0000	N 0.0000	N 0.1971	Rn 0.4723
Path Results	Path 249 N	Path 250 N	Path 251 CR	Path 252 CR	Path 253 WP	Path 254 N	Path 255 N	Path 256 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	340.1883	1066.751	1276.264	0.0000000	0.0000000	11571.67
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1893	Rn 0.5937	NC	5.000	Ch 0.0000	N 0.0000
Path Results	Path 257 CR	Path 258 WP	Path 259 CR	Path 260 CR	Path 261 CR	Path 262 CR	Path 263 WP	Path 264 CR
Heat Rate, Btu/hr	37907.57	42517.73	-33.45749	-6074.939	11523.68	37753.62	42347.73	-33.15837
HTC, Btu/ft <sup>2</sup> hr°F	0.6210	NC	11.05	Ch 1.0000E-03	XT 0.1816	Rn 0.1896	Rn 0.6211	NC

Path Results	Path 265 CR	Path 266 CR	Path 267 CR	Path 268 WP	Path 269 N	Path 270 N	Path 271 CR	Path 272 CR
Heat Rate, Btu/hr	-6019.414	3858.118	21.02662	3511.370	0.0000000	0.0000000	3840.950	20.93305
HTC, Btu/ft <sup>2</sup> hr°F	0.1825	Rn 0.1835	Rn 1.0000E-03 XT	11.04	Ch 0.0000	N 0.0000	N 0.1835	Rn 1.0000E-03 XT
Path Results	Path 273 WP	Path 274 N	Path 275 N	Path 276 CR	Path 277 CR	Path 278 WP	Path 279 CR	Path 280 CR
Heat Rate, Btu/hr	3497.736	0.0000000	0.0000000	12611.30	42580.20	47253.55	-39.29561	-7397.447
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ch 0.0000	N 0.0000	N 0.1977	Rn 0.6670	NC 11.05	Ch 1.0000E-03 XT	0.1883 Rn
Path Results	Path 281 CR	Path 282 CR	Path 283 WP	Path 284 N	Path 285 N	Path 286 CR	Path 287 CR	Path 288 WP
Heat Rate, Btu/hr	14962.54	79.00937	13583.55	0.0000000	0.0000000	10353.89	34259.49	38031.66
HTC, Btu/ft <sup>2</sup> hr°F	0.1894	Rn 1.0000E-03 XT	11.04	Ch 0.0000	N 0.0000	N 0.1924	Rn 0.6385	NC 11.05 Ch
Path Results	Path 289 CR	Path 290 CR	Path 291 CR	Path 292 CR	Path 293 WP	Path 294 N	Path 295 N	Path 296 CR
Heat Rate, Btu/hr	-43.16751	-8067.277	12055.78	64.99776	12948.71	0.0000000	0.0000000	17.40131
HTC, Btu/ft <sup>2</sup> hr°F	1.0000E-03 XT	0.1869 Rn	0.1855 Rn	1.0000E-03 XT	11.04	Ch 0.0000	N 0.0000	N 0.2002 Rn
Path Results	Path 297 CR	Path 298 N	Path 299 N	Path 300 CR	Path 301 CR	Path 302 CR	Path 303 CR	Path 304 N
Heat Rate, Btu/hr	20.08793	0.0000000	0.0000000	-25.27940	-30.75572	17.40131	20.08793	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2311	NC 0.0000	N 0.0000	N 0.2111	Rn 0.2569	NC 0.2002	Rn 0.2311	NC 0.0000 N
Path Results	Path 305 N	Path 306 N	Path 307 N	Path 308 CR	Path 309 CR	Path 310 N	Path 311 N	Path 312 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	8.990250	10.39221	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.2002	Rn 0.2314	NC 0.0000	N 0.0000	N 0.0000 N
Path Results	Path 313 N	Path 314 CR	Path 315 CR	Path 316 N	Path 317 N	Path 318 CR	Path 319 CR	Path 320 CR
Heat Rate, Btu/hr	0.0000000	17.40131	20.08793	0.0000000	0.0000000	-21.84166	-26.51744	7.813054
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.2002	Rn 0.2311	NC 0.0000	N 0.0000	N 0.2039	Rn 0.2476	NC 0.2002 Rn
Path Results	Path 321 CR	Path 322 N	Path 323 N	Path 324 N	Path 325 N	Path 326 CR	Path 327 CR	Path 328 N
Heat Rate, Btu/hr	9.026600	0.0000000	0.0000000	0.0000000	0.0000000	6.488703	7.490298	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2313	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.2002	Rn 0.2311	NC 0.0000 N
Path Results	Path 329 N	Path 330 N	Path 331 N	Path 332 CR	Path 333 CR	Path 334 N	Path 335 N	Path 336 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	18.50493	21.36818	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.2002	Rn 0.2312	NC 0.0000	N 0.0000	N 0.0000 N
Path Results	Path 337 N	Path 338 CR	Path 339 CR	Path 340 N	Path 341 N	Path 342 N	Path 343 N	Path 344 CR
Heat Rate, Btu/hr	0.0000000	18.50493	21.36818	0.0000000	0.0000000	0.0000000	0.0000000	7.813054
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.2002	Rn 0.2312	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.2002 Rn
Path Results	Path 345 CR	Path 346 N	Path 347 N	Path 348 N	Path 349 N	Path 350 CR	Path 351 CR	Path 352 N
Heat Rate, Btu/hr	9.026600	0.0000000	0.0000000	0.0000000	0.0000000	9.426337	11.46806	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2313	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.2111	Rn 0.2569	NC 0.0000 N

Path Results	Path 353 N	Path 354 N	Path 355 N	Path 356 CR	Path 357 CR	Path 358 N	Path 359 N	Path 360 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	10.70884	13.03603	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.2111	Rn 0.2570	NC 0.0000	N 0.0000	N 0.0000
Path Results	Path 361 N	Path 362 CR	Path 363 CR	Path 364 N	Path 365 N	Path 366 N	Path 367 N	Path 368 CR
Heat Rate, Btu/hr	0.0000000	26.88253	32.71567	0.0000000	0.0000000	0.0000000	0.0000000	21.84146
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.2111	Rn 0.2570	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.2039
Path Results	Path 369 CR	Path 370 N	Path 371 N	Path 372 N	Path 373 N	Path 374 CR	Path 375 CR	Path 376 N
Heat Rate, Btu/hr	26.51744	0.0000000	0.0000000	0.0000000	0.0000000	9.806525	11.91557	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.2476	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.2039	Rn 0.2476	NC 0.0000
Path Results	Path 377 N	Path 378 N	Path 379 N	Path 380 CR	Path 381 CR	Path 382 N	Path 383 N	Path 384 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	9.073883	11.00556	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.2039	Rn 0.2474	NC 0.0000	N 0.0000	N 0.0000
Path Results	Path 385 N	Path 386 CR	Path 387 CR	Path 388 N	Path 389 N	Path 390 N	Path 391 N	Path 392 CR
Heat Rate, Btu/hr	0.0000000	9.443256	11.45619	0.0000000	0.0000000	0.0000000	0.0000000	17488.81
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.2039	Rn 0.2474	NC 0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.7078
Path Results	Path 393 CR	Path 394 WP	Path 395 CR	Path 396 CR	Path 397 CR	Path 398 CR	Path 399 WP	Path 400 CR
Heat Rate, Btu/hr	8703.998	21546.43	10666.79	6233.321	2801.025	1617.341	3680.149	1954.184
HTC, Btu/ft <sup>2</sup> hr°F	0.3523	NC 2709.	X 0.3705	NC 0.2165	Rn 0.7077	Rn 0.4087	NC 2709.	Ck 0.4283
Path Results	Path 401 CR	Path 402 CR	Path 403 CR	Path 404 CR	Path 405 WP	Path 406 CR	Path 407 WP	Path 408 CR
Heat Rate, Btu/hr	987.7574	68647.31	3293.759	1201.108	2247.441	4168.550	2086.109	20312.74
HTC, Btu/ft <sup>2</sup> hr°F	0.2165	Rn 72.86	NC 0.7146	Rn 0.2606	NC 2709.	Ck 0.7000	XT 1116.	Ck 0.7000
Path Results	Path 409 WP	Path 410 N	Path 411 N	Path 412 CR	Path 413 CR	Path 414 WP	Path 415 CR	Path 416 CR
Heat Rate, Btu/hr	10156.50	0.0000000	0.0000000	16509.53	8455.721	20939.13	10860.38	4092.680
HTC, Btu/ft <sup>2</sup> hr°F	1296.	Ck 0.0000	N 0.0000	N 0.6840	Rn 0.3503	NC 2709.	Ck 0.3728	NC 0.2091
Path Results	Path 417 CR	Path 418 CR	Path 419 WP	Path 420 CR	Path 421 CR	Path 422 CR	Path 423 CR	Path 424 CR
Heat Rate, Btu/hr	2534.149	1506.711	3431.945	1900.481	922.5597	56283.34	2272.258	828.4168
HTC, Btu/ft <sup>2</sup> hr°F	0.6839	Rn 0.4066	NC 2709.	Ck 0.4307	NC 0.2091	Rn 62.36	NC 0.6908	Rn 0.2519
Path Results	Path 425 WP	Path 426 CR	Path 427 WP	Path 428 CR	Path 429 WP	Path 430 N	Path 431 N	Path 432 CR
Heat Rate, Btu/hr	1550.342	3472.160	1735.936	17132.63	8546.428	0.0000000	0.0000000	6650.885
HTC, Btu/ft <sup>2</sup> hr°F	2709.	Ck 0.7000	XT 1116.	Ck 0.7000	XT 1296.	Ck 0.0000	N 0.0000	N 0.6750
Path Results	Path 433 CR	Path 434 WP	Path 435 CR	Path 436 CR	Path 437 CR	Path 438 CR	Path 439 WP	Path 440 CR
Heat Rate, Btu/hr	3695.980	8171.753	3892.947	2103.720	7136.113	3763.889	9799.007	5723.059
HTC, Btu/ft <sup>2</sup> hr°F	0.3751	NC 1296.	Ck 0.3800	NC 0.2053	Rn 0.6769	Rn 0.3570	NC 3098.	Ck 0.3961

Path Results	Path 441 CR	Path 442 CR	Path 443 CR	Path 444 WP	Path 445 CR	Path 446 CR	Path 447 CR	Path 448 CR
Heat Rate, Btu/hr	2974.964	622.5218	328.3444	854.8204	499.2534	259.5222	1725.327	915.1133
HTC, Btu/ft <sup>2</sup> hrF	0.2059	Rn 0.6769	Rn 0.3570	NC	3098.	Ck 0.3961	NC	0.2059
Path Results	Path 449 WP	Path 450 CR	Path 451 CR	Path 452 CR	Path 453 CR	Path 454 WP	Path 455 CR	Path 456 CR
Heat Rate, Btu/hr	2340.113	1340.439	689.3485	3166.051	1962.711	4525.160	2698.073	1223.494
HTC, Btu/ft <sup>2</sup> hrF	2709.	Ck 0.3946	NC	0.2059	Rn 0.6764	Rn 0.4193	NC	2409.
Path Results	Path 457 CR	Path 458 CR	Path 459 WP	Path 460 CR	Path 461 CR	Path 462 CR	Path 463 CR	Path 464 WP
Heat Rate, Btu/hr	157.2598	97.00363	227.2858	137.9619	62.34656	72016.96	9729.546	4866.851
HTC, Btu/ft <sup>2</sup> hrF	0.6766	Rn 0.4173	NC	2709.	Ck 0.4554	NC	0.2058	Rn 319.0
Path Results	Path 465 N	Path 466 N	Path 467 N	Path 468 N	Path 469 N	Path 470 N	Path 471 CR	Path 472 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	1266.273	5618.380
HTC, Btu/ft <sup>2</sup> hrF	0.0000	N	0.0000	N	0.0000	N	0.0000	N
Path Results	Path 473 WP	Path 474 N	Path 475 N	Path 476 CR	Path 477 CR	Path 478 WP	Path 479 CR	Path 480 CR
Heat Rate, Btu/hr	4478.582	0.0000000	0.0000000	949.5122	2655.433	3403.875	-307.2897	-174.9672
HTC, Btu/ft <sup>2</sup> hrF	11.04	Ck 0.0000	N	0.0000	N	0.1855	Rn 0.5216	NC
Path Results	Path 481 CR	Path 482 CR	Path 483 WP	Path 484 CR	Path 485 CR	Path 486 CR	Path 487 CR	Path 488 WP
Heat Rate, Btu/hr	1201.415	3359.913	4306.915	-388.8129	-221.3856	348.1552	979.0993	1255.999
HTC, Btu/ft <sup>2</sup> hrF	0.1865	Rn 0.5216	NC	11.04	Ck 0.3055	NC	0.1739	Rn 0.1864
Path Results	Path 489 N	Path 490 N	Path 491 CR	Path 492 CR	Path 493 WP	Path 494 N	Path 495 N	Path 496 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1845.480	4971.279	6234.494	0.0000000	0.0000000	2212.099
HTC, Btu/ft <sup>2</sup> hrF	0.0000	N	0.0000	N	0.1875	Rn 0.5050	NC	11.04
Path Results	Path 497 CR	Path 498 WP	Path 499 N	Path 500 N	Path 501 CR	Path 502 CR	Path 503 WP	Path 504 CR
Heat Rate, Btu/hr	6321.079	7823.797	0.0000000	0.0000000	1262.808	3647.693	4552.883	-2341.771
HTC, Btu/ft <sup>2</sup> hrF	0.5313	NC	11.04	Ck 0.0000	N	0.1856	Rn 0.5362	NC
Path Results	Path 505 CR	Path 506 CR	Path 507 CR	Path 508 WP	Path 509 N	Path 510 N	Path 511 CR	Path 512 CR
Heat Rate, Btu/hr	-876.2045	779.6626	2113.842	2654.133	0.0000000	0.0000000	1912.757	5014.568
HTC, Btu/ft <sup>2</sup> hrF	0.1797	Rn 0.1794	Rn 0.4865	NC	11.04	Ck 0.0000	N	0.0000
Path Results	Path 513 WP	Path 514 CR	Path 515 CR	Path 516 CR	Path 517 CR	Path 518 WP	Path 519 CR	Path 520 CR
Heat Rate, Btu/hr	6536.089	-727.2059	-430.5288	1799.664	4879.821	6127.684	-4862.335	-1794.397
HTC, Btu/ft <sup>2</sup> hrF	11.04	Ck 0.2925	NC	0.1732	Rn 0.1794	Rn 0.4865	NC	11.04
Path Results	Path 521 CR	Path 522 CR	Path 523 WP	Path 524 CR	Path 525 CR	Path 526 CR	Path 527 CR	Path 528 WP
Heat Rate, Btu/hr	363.0577	888.9886	1156.667	-154.3676	-93.51209	192.0648	553.4095	685.2371
HTC, Btu/ft <sup>2</sup> hrF	0.1814	Rn 0.4442	NC	4.876	Ck 0.2877	NC	0.1743	Rn 0.1780

Path Results	Path 529 N	Path 530 N	Path 531 CR	Path 532 CR	Path 533 WP	Path 534 N	Path 535 N	Path 536 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1476.277	4002.522	5025.551	0.0000000	0.0000000	1907.159
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1794	Rn 0.4865	NC 11.04	Ch 0.0000	N 0.0000	N 0.1801
Path Results	Path 537 CR	Path 538 WP	Path 539 CR	Path 540 CR	Path 541 CR	Path 542 CR	Path 543 WP	Path 544 N
Heat Rate, Btu/hr	4996.673	6513.438	-727.2059	-430.5288	794.8083	2153.950	2704.735	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.4718	NC 11.04	Ch 0.2925	NC 0.1732	Rn 0.1794	Rn 0.4861	NC 11.04	Ch 0.0000
Path Results	Path 545 N	Path 546 CR	Path 547 CR	Path 548 WP	Path 549 CR	Path 550 CR	Path 551 CR	Path 552 CR
Heat Rate, Btu/hr	0.0000000	873.5317	2332.993	2889.875	-3620.176	-1255.007	1570.759	4256.796
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1797	Rn 0.4799	NC 11.04	Ch 0.5352	NC 0.1855	Rn 0.1794	Rn 0.4861
Path Results	Path 553 WP	Path 554 N	Path 555 N	Path 556 CR	Path 557 CR	Path 558 WP	Path 559 N	Path 560 N
Heat Rate, Btu/hr	5345.296	0.0000000	0.0000000	211.8532	610.2324	755.6413	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	11.04	Ch 0.0000	N 0.0000	N 0.1780	Rn 0.5127	NC 11.04	Ch 0.0000	N 0.0000
Path Results	Path 561 CR	Path 562 CR	Path 563 WP	Path 564 CR	Path 565 CR	Path 566 CR	Path 567 CR	Path 568 WP
Heat Rate, Btu/hr	275.7127	674.7044	877.9114	-117.5705	-71.22123	2197.154	6268.324	7765.313
HTC, Btu/ft <sup>2</sup> hr°F	0.1813	Rn 0.4438	NC 4.876	Ch 0.2877	NC 0.1743	Rn 0.1858	Rn 0.5302	NC 11.04
Path Results	Path 569 N	Path 570 N	Path 571 CR	Path 572 CR	Path 573 WP	Path 574 N	Path 575 N	Path 576 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	1831.031	4922.681	6180.075	0.0000000	0.0000000	345.7877
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1874	Rn 0.5038	NC 11.04	Ch 0.0000	N 0.0000	N 0.1863
Path Results	Path 577 CR	Path 578 WP	Path 579 N	Path 580 N	Path 581 CR	Path 582 CR	Path 583 WP	Path 584 CR
Heat Rate, Btu/hr	970.8867	1246.898	0.0000000	0.0000000	1193.131	3331.303	4275.181	-388.8113
HTC, Btu/ft <sup>2</sup> hr°F	0.5230	NC 11.04	Ch 0.0000	N 0.0000	N 0.1864	Rn 0.5205	NC 11.04	Ch 0.3055
Path Results	Path 585 CR	Path 586 CR	Path 587 CR	Path 588 WP	Path 589 CR	Path 590 CR	Path 591 CR	Path 592 CR
Heat Rate, Btu/hr	-221.3854	330.7887	923.5841	1185.269	-107.7959	-61.37779	871.3660	2355.444
HTC, Btu/ft <sup>2</sup> hr°F	0.1739	Rn 0.1864	Rn 0.5205	NC 11.04	Ch 0.3055	NC 0.1739	Rn 0.1873	Rn 0.5062
Path Results	Path 593 WP	Path 594 N	Path 595 N	Path 596 CR	Path 597 CR	Path 598 WP	Path 599 N	Path 600 N
Heat Rate, Btu/hr	2961.022	0.0000000	0.0000000	873.6146	2453.503	3050.076	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	5.000	Ch 0.0000	N 0.0000	N 0.1863	Rn 0.5231	NC 11.04	Ch 0.0000	N 0.0000
Path Results	Path 601 CR	Path 602 CR	Path 603 WP	Path 604 CR	Path 605 N	Path 606 CR	Path 607 CR	Path 608 WP
Heat Rate, Btu/hr	-8014.711	-39.06056	-8807.600	-22266.64	0.0000000	-5565.230	-32.84218	-6892.270
HTC, Btu/ft <sup>2</sup> hr°F	0.2052	Rn 1.0000E-03	XT 11.04	Ch 3.000	XT 0.0000	N 0.1999	Rn 1.0000E-03	XT 11.04
Path Results	Path 609 CR	Path 610 N	Path 611 CR	Path 612 CR	Path 613 WP	Path 614 CR	Path 615 CR	Path 616 CR
Heat Rate, Btu/hr	-12274.51	0.0000000	1004.248	2359.646	3051.785	-9.196892	-1708.736	1194.164
HTC, Btu/ft <sup>2</sup> hr°F	3.000	XT 0.0000	N 0.1839	Rn 0.4322	NC 11.04	Ch 1.0000E-03	XT 0.1858	Rn 0.1839

Path Results	Path 617 CR	Path 618 WP	Path 619 CR	Path 620 CR	Path 621 CR	Path 622 CR	Path 623 WP	Path 624 CR
Heat Rate, Btu/hr	2805.885	3628.916	-10.93814	-2031.879	-6580.105	-32.92276	-6906.582	-12276.64
HTC, Btu/ft <sup>2</sup> hr°F	0.4322	NC	11.04	1.0000E-03 XT	0.1858	Rn 0.1999	Rn 1.0000E-03 XT	11.04
								0.000
Path Results	Path 625 N	Path 626 CR	Path 627 CR	Path 628 WP	Path 629 CR	Path 630 CR	Path 631 CR	Path 632 CR
Heat Rate, Btu/hr	0.0000000	998.3063	2341.840	3029.042	-9.200483	-1709.381	1188.092	2787.035
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.1839	Rn 0.4314	NC	11.04	1.0000E-03 XT	0.1858	Rn 0.1839
								0.4314
Path Results	Path 633 WP	Path 634 CR	Path 635 CR	Path 636 CR	Path 637 CR	Path 638 WP	Path 639 CR	Path 640 N
Heat Rate, Btu/hr	3604.878	-10.94954	-2034.342	-7763.029	-37.84976	-8513.531	-21366.85	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	11.04	1.0000E-03 XT	0.1858	Rn 0.2051	Rn 1.0000E-03 XT	11.04	1.0000E-03 XT	0.0000
								N
Path Results	Path 641 CR	Path 642 CR	Path 643 N	Path 644 N	Path 645 N	Path 646 N	Path 647 CR	Path 648 CR
Heat Rate, Btu/hr	3.805105	3.708948	0.0000000	0.0000000	0.0000000	0.0000000	3.465736	3.208551
HTC, Btu/ft <sup>2</sup> hr°F	0.1965	Rn 0.1915	NC	0.0000	N 0.0000	N 0.0000	N 0.1873	Rn 0.1734
								NC
Path Results	Path 649 N	Path 650 N	Path 651 N	Path 652 N	Path 653 CR	Path 654 CR	Path 655 CR	Path 656 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	3.001135	2.792972	0.1212613	8.9066950E-02
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1873	Rn 0.1743	NC	0.2353
								0.2353
Path Results	Path 657 CR	Path 658 CR	Path 659 CR	Path 660 CR	Path 661 CR	Path 662 CR	Path 663 CR	Path 664 CR
Heat Rate, Btu/hr	-2.906271	-2.677191	2.116703	1.973034	8.5200621E-02	6.2480922E-02	-2.050152	-1.891680
HTC, Btu/ft <sup>2</sup> hr°F	0.1873	Rn 0.1725	NC	0.1873	Rn 0.1746	NC	0.2353	0.1873
								Rn 0.1728
Path Results	Path 665 CR	Path 666 CR	Path 667 N	Path 668 N	Path 669 N	Path 670 N	Path 671 CR	Path 672 CR
Heat Rate, Btu/hr	2.946992	2.726025	0.0000000	0.0000000	0.0000000	0.0000000	2.686870	2.686894
HTC, Btu/ft <sup>2</sup> hr°F	0.1873	Rn 0.1733	NC	0.0000	N 0.0000	N 0.0000	N 0.1873	Rn 0.1734
								NC
Path Results	Path 673 N	Path 674 N	Path 675 N	Path 676 N	Path 677 CR	Path 678 CR	Path 679 N	Path 680 N
Heat Rate, Btu/hr	0.0000000	0.0000000	0.0000000	0.0000000	2.946018	2.726093	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.0000	N 0.0000	N 0.1873	Rn 0.1733	NC	0.0000
								N
Path Results	Path 681 N	Path 682 N	Path 683 CR	Path 684 CR	Path 685 N	Path 686 N	Path 687 N	Path 688 N
Heat Rate, Btu/hr	0.0000000	0.0000000	3.660298	3.525827	0.0000000	0.0000000	0.0000000	0.0000000
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1964	Rn 0.1891	NC	0.0000	N 0.0000	N 0.0000
								N
Path Results	Path 689 CR	Path 690 CR	Path 691 WP	Path 692 N	Path 693 N	Path 694 CR	Path 695 CR	Path 696 WP
Heat Rate, Btu/hr	1800.640	3232.841	2516.789	0.0000000	0.0000000	631.6038	863.5626	750.5983
HTC, Btu/ft <sup>2</sup> hr°F	0.1978	Rn 0.3551	NC	1296.	0.0000	N 0.0000	N 0.1996	Rn 0.2729
								NC
Path Results	Path 697 N	Path 698 N	Path 699 N	Path 700 CR	Path 701 WP	Path 702 N	Path 703 N	Path 704 CR
Heat Rate, Btu/hr	0.0000000	0.0000000	715.5779	3.462124	359.6214	0.0000000	0.0000000	474.9285
HTC, Btu/ft <sup>2</sup> hr°F	0.0000	N 0.0000	N 0.1954	Rn 1.0000E-03 XT	2409.	0.0000	N 0.0000	N 0.2103
								Rn



Path Results	Path 705 CR	Path 706 WF	Path 707 CR	Path 708 CR	Path 709 WF
Heat Rate, Btu/hr	684.3011	579.6160	335.1491	481.7895	408.4702
HTC, Btu/Ft <sup>2</sup> hrF	0.3030 NC	3098.	Ck 0.2032	Rn 0.2921 NC	3098. Ck

(ML00P(I),I=1,2): 0.00000000E+00 0.00000000E+00

CASE ENDED NORMALLY WITH XA.GE.XMAX

NETP 3767 NRJCTD 9 ITOL 5 JEMAX 153

BMAX 2.16493316E-08 XA 8.0000000 XAC 4.06454966E-03 XC 8.0000000 XACD 5.00752393E-03

"Solution Vector" (ZA(J),J=1,NE), NE = 1256

(UI) energy, incompressible, (MN) HCG n moles, (MW) water mass, (UC) energy, compressible, (WP) path mass flow

NE	Type	Vector	Bias	Delta Z	E	Node/Path
1	UI	0.3482942E+06	0.3302545E+06	- .2432868E-03	- .7366647E-09	1
2	UI	0.1715495E+06	0.1597199E+06	0.8429654E-04	0.5277773E-09	2
3	UI	0.1637676E+06	0.1542787E+06	0.6855635E-04	0.4443798E-09	3
4	UI	0.1923000E+06	0.1865945E+06	0.0000000E+00	0.0000000E+00	49
5	UI	0.1922777E+06	0.1865945E+06	0.0000000E+00	0.0000000E+00	50
6	UI	0.1600995E+06	0.1528593E+06	- .5529728E-09	- .3617528E-14	51
7	UI	0.1536503E+06	0.1467422E+06	- .2910383E-10	- .1983330E-15	52
8	UI	0.1173378E+06	0.1169992E+06	0.3085006E-08	0.2636776E-13	56
9	UI	0.1163137E+06	0.1169992E+06	- .5384203E-09	- .4601921E-14	57
10	UI	0.6644570E+05	0.6625919E+05	0.1760782E-08	0.2657415E-13	58
11	UI	0.6649974E+05	0.6625919E+05	0.0000000E+00	0.0000000E+00	59
12	UI	0.1922837E+05	0.1917440E+05	0.5056791E-09	0.2637262E-13	60
13	UI	0.1878099E+05	0.1917440E+05	0.0000000E+00	0.0000000E+00	61
14	UI	0.7271857E+06	0.7344865E+06	0.1234002E-07	0.1680089E-13	62
15	UI	0.7038874E+06	0.7344865E+06	0.1164153E-09	0.1584989E-15	63
16	UI	0.5391132E+06	0.5376000E+06	0.1418812E-08	0.2639159E-13	64
17	UI	0.5265699E+06	0.5376000E+06	0.7275958E-11	0.1353415E-15	65
18	UI	0.5642719E+06	0.5626800E+06	0.1491571E-08	0.2650797E-13	66
19	UI	0.5511432E+06	0.5626800E+06	- .7275958E-11	- .1293072E-15	67
20	UI	0.1170377E+06	0.1167279E+06	0.3070454E-08	0.2630437E-13	68
21	UI	0.1173248E+06	0.1167279E+06	- .8294592E-09	- .7105919E-14	69
22	UI	0.2232827E+06	0.2236560E+06	0.5893526E-09	0.2646920E-13	70
23	UI	0.2180877E+06	0.2236560E+06	0.0000000E+00	0.0000000E+00	71
24	UI	0.2051123E+06	0.2047360E+06	0.5420588E-09	0.2647599E-13	72
25	UI	0.2005354E+06	0.2047360E+06	0.0000000E+00	0.0000000E+00	73
26	UI	0.1153702E+06	0.1150464E+06	0.3055902E-08	0.2656235E-13	74
27	UI	0.1126860E+06	0.1150464E+06	0.0000000E+00	0.0000000E+00	75
28	UI	0.5331167E+06	0.5282812E+06	0.1338776E-08	0.2534211E-13	76
29	UI	0.5272079E+06	0.5282812E+06	0.0000000E+00	0.0000000E+00	77
30	UI	0.6100709E+06	0.6045375E+06	0.1542503E-08	0.2551542E-13	78
31	UI	0.6030748E+06	0.6045375E+06	0.7275958E-11	0.1203558E-15	79
32	UI	0.1126747E+06	0.1123584E+06	0.2983143E-08	0.2655024E-13	80
33	UI	0.1100531E+06	0.1123584E+06	- .1455192E-10	- .1295134E-15	81
34	UI	0.4694778E+06	0.4661600E+06	0.1236913E-08	0.2642073E-13	82
35	UI	0.4589546E+06	0.4661600E+06	0.7275958E-11	0.1554161E-15	83
36	UI	0.6815295E+06	0.6737920E+06	- .3055902E-09	- .4535379E-14	84
37	UI	0.6617849E+06	0.6737920E+06	0.0000000E+00	0.0000000E+00	85
38	UI	0.4345657E+06	0.4296320E+06	- .1964509E-09	- .4572538E-14	86
39	UI	0.4219759E+06	0.4296320E+06	0.0000000E+00	0.0000000E+00	87
40	UI	0.1294099E+06	0.1284665E+06	- .3929017E-09	- .3058398E-14	88
41	UI	0.1278605E+06	0.1284665E+06	0.0000000E+00	0.0000000E+00	89
42	UI	0.1674779E+06	0.1662570E+06	- .4967651E-09	- .2975905E-14	90
43	UI	0.1654727E+06	0.1662570E+06	0.0000000E+00	0.0000000E+00	91
44	UI	0.4782051E+06	0.4750200E+06	- .1455192E-09	- .3063432E-14	92
45	UI	0.4651706E+06	0.4750200E+06	- .7275958E-11	- .1531716E-15	93
46	UI	0.3734778E+06	0.3577700E+06	- .1105946E-08	- .3091219E-14	94
47	UI	0.3718629E+06	0.3577700E+06	- .5820766E-10	- .1626958E-15	95
48	UI	0.3613369E+06	0.3465000E+06	- .1091394E-09	- .3149765E-14	96
49	UI	0.3596984E+06	0.3465000E+06	- .7275958E-11	- .2099843E-15	97
50	UI	0.6102578E+06	0.5852000E+06	- .1746230E-09	- .2983988E-14	98
51	UI	0.6074907E+06	0.5852000E+06	- .1455192E-10	- .2486657E-15	99
52	UI	0.1649740E+06	0.1582000E+06	- .5093170E-10	- .3219450E-14	100

53	UI	0.1642260E+05	0.1582000E+05	- .3637979E-11	- .2299607E-15	101
54	UI	0.1111020E+06	0.1065400E+06	- .3346941E-09	- .3141487E-14	102
55	UI	0.1105982E+06	0.1065400E+06	- .2910383E-10	- .2731728E-15	103
56	UI	0.1744437E+05	0.1673000E+05	- .5093170E-10	- .3044334E-14	104
57	UI	0.1736726E+05	0.1673000E+05	- .7275958E-11	- .4349048E-15	105
58	UI	0.1283330E+05	0.1276800E+05	- .9094947E-10	- .7123236E-14	106
59	UI	0.1250623E+05	0.1276800E+05	0.0000000E+00	0.0000000E+00	107
60	UI	0.7150622E+05	0.7114240E+05	- .5238689E-09	- .7363668E-14	108
61	UI	0.6968381E+05	0.7114240E+05	0.0000000E+00	0.0000000E+00	109
62	UI	0.8672524E+05	0.8393000E+05	- .3637979E-09	- .4334539E-14	110
63	UI	0.8637854E+05	0.8393000E+05	- .1455192E-10	- .1733816E-15	111
64	UI	0.3703180E+06	0.3579800E+06	- .1513399E-08	- .4227608E-14	112
65	UI	0.3689186E+06	0.3579800E+06	- .5820766E-10	- .1624003E-15	113
66	UI	0.4760385E+05	0.4750200E+05	- .2619345E-09	- .5514178E-14	114
67	UI	0.4650951E+05	0.4750200E+05	0.0000000E+00	0.0000000E+00	115
68	UI	0.1667210E+06	0.1662570E+06	- .9022187E-09	- .5426651E-14	116
69	UI	0.1654727E+06	0.1662570E+06	0.2910383E-10	0.1750533E-15	117
70	UI	0.4953995E+05	0.4940208E+05	- .2619345E-09	- .5302094E-14	118
71	UI	0.4916902E+05	0.4940208E+05	- .7275958E-11	- .1472804E-15	119
72	UI	0.1047651E+06	0.1036672E+06	- .6693881E-09	- .6657087E-14	120
73	UI	0.1024653E+06	0.1036672E+06	0.0000000E+00	0.0000000E+00	121
74	UI	0.1035669E+05	0.1030400E+05	- .7457857E-10	- .7237827E-14	122
75	UI	0.1009274E+05	0.1030400E+05	0.0000000E+00	0.0000000E+00	123
76	UI	0.6227526E+05	0.6195840E+05	- .4438334E-09	- .7163410E-14	124
77	UI	0.6068811E+05	0.6195840E+05	0.0000000E+00	0.0000000E+00	125
78	UI	0.2214857E+05	0.2208640E+05	0.5857146E-09	0.2651924E-13	126
79	UI	0.2163325E+05	0.2208640E+05	0.0000000E+00	0.0000000E+00	127
80	UI	0.1882404E+05	0.1877120E+05	0.4984031E-09	0.2655148E-13	128
81	UI	0.1838607E+05	0.1877120E+05	0.0000000E+00	0.0000000E+00	129
82	UI	0.1336335E+05	0.1312440E+05	0.3474270E-09	0.2646781E-13	130
83	UI	0.1285708E+05	0.1312640E+05	0.0000000E+00	0.0000000E+00	131
84	UI	0.1518502E+05	0.1514240E+05	0.3983587E-09	0.2630750E-13	132
85	UI	0.1463172E+05	0.1514240E+05	0.0000000E+00	0.0000000E+00	133
86	UI	0.4609418E+05	0.4596479E+05	0.1207809E-08	0.2627683E-13	134
87	UI	0.4502173E+05	0.4596479E+05	0.0000000E+00	0.0000000E+00	135
88	UI	0.4519566E+05	0.4506880E+05	0.1193257E-08	0.2647635E-13	136
89	UI	0.4414411E+05	0.4506880E+05	0.0000000E+00	0.0000000E+00	137
90	UI	0.1866896E+05	0.1881600E+05	0.4984031E-09	0.2648826E-13	138
91	UI	0.1842995E+05	0.1881600E+05	0.0000000E+00	0.0000000E+00	139
92	UI	0.2270255E+05	0.2244480E+05	- .1055014E-09	- .4700483E-14	140
93	UI	0.2204483E+05	0.2244480E+05	0.3637979E-11	0.1620856E-15	141
94	UI	0.1927130E+05	0.1848000E+05	- .5456968E-10	- .2952905E-14	142
95	UI	0.1918392E+05	0.1848000E+05	- .3637979E-11	- .1968603E-15	143
96	UI	0.3241082E+05	0.3108000E+05	- .9458745E-10	- .3043354E-14	144
97	UI	0.3226386E+05	0.3108000E+05	- .7275958E-11	- .2341042E-15	145
98	UI	0.6715756E+05	0.6440000E+05	- .2037268E-09	- .3163460E-14	146
99	UI	0.6685304E+05	0.6440000E+05	- .1455192E-10	- .2259614E-15	147
100	UI	0.1824934E+05	0.1750000E+05	- .5093170E-10	- .2910383E-14	148
101	UI	0.1816659E+05	0.1750000E+05	- .3637979E-11	- .2078845E-15	149
102	UI	0.1148242E+05	0.1142400E+05	- .8185452E-10	- .7165137E-14	150
103	UI	0.1118978E+05	0.1142400E+05	0.0000000E+00	0.0000000E+00	151
104	UI	0.4178702E+05	0.4157440E+05	- .2983143E-09	- .7175431E-14	152
105	UI	0.4072203E+05	0.4157440E+05	0.0000000E+00	0.0000000E+00	153
106	UI	0.5439314E+05	0.5264000E+05	- .2328306E-09	- .4423075E-14	154
107	UI	0.5417569E+05	0.5264000E+05	- .1455192E-10	- .2764422E-15	155
108	UI	0.2562156E+05	0.2549120E+05	- .1855369E-09	- .7278469E-14	156

109	UI	0.2496857E+05	0.2549120E+05	0.0000000E+00	0.0000000E+00	157
110	UI	0.8404457E+05	0.7878795E+05	-0.1669164E-02	-0.2118553E-07	158
111	UI	0.8404452E+05	0.7878795E+05	0.1693459E-02	0.2149388E-07	159
112	UI	0.6782493E+05	0.6429326E+05	-0.1196126E-02	-0.1860423E-07	160
113	UI	0.6782490E+05	0.6429326E+05	0.1210166E-02	0.1882259E-07	161
114	UI	0.1404614E+07	0.1386357E+07	0.2328306E-07	0.1679442E-13	176
115	UI	0.1397246E+07	0.1386357E+07	0.0000000E+00	0.0000000E+00	177
116	UI	0.1398401E+07	0.1380240E+07	0.2305623E-07	0.1670016E-13	178
117	UI	0.1391058E+07	0.1380240E+07	0.2328306E-09	0.1686885E-15	179
118	UI	0.3054215E+06	0.3083935E+06	0.1047738E-08	0.3397405E-14	180
119	UI	0.3044631E+06	0.3083935E+06	0.0000000E+00	0.0000000E+00	181
120	UI	0.3040624E+06	0.3070213E+06	0.1047738E-08	0.3412590E-14	182
121	UI	0.3031083E+06	0.3070213E+06	0.9820766E-10	0.1895864E-15	183
122	UI	0.1194301E+07	0.1167908E+07	-0.3492460E-08	-0.2990355E-14	184
123	UI	0.1186227E+07	0.1167908E+07	-0.2328306E-09	-0.1993570E-15	185
124	UI	0.9021738E+06	0.9092939E+06	-0.5820766E-09	-0.6401414E-15	186
125	UI	0.8984900E+06	0.9092939E+06	0.0000000E+00	0.0000000E+00	187
126	UI	0.1142391E+07	0.1123933E+07	-0.6286427E-08	-0.5593238E-14	188
127	UI	0.1136199E+07	0.1123933E+07	0.2328306E-09	0.2071570E-15	189
128	UI	0.8574017E+06	0.8654337E+06	-0.1047738E-08	-0.1210651E-14	190
129	UI	0.8544309E+06	0.8654337E+06	0.0000000E+00	0.0000000E+00	191
130	UI	0.8170360E+04	0.7771008E+04	0.3919922E-09	0.5044291E-13	201
131	UI	0.8311951E+04	0.7771008E+04	-0.6730261E-10	-0.6660731E-14	203
132	UI	0.8170360E+04	0.7771008E+04	0.3919922E-09	0.5044291E-13	204
133	UI	0.4223609E+04	0.4017216E+04	0.2028173E-09	0.5048703E-13	207
134	UI	0.8170360E+04	0.7771008E+04	0.3919922E-09	0.5044291E-13	210
135	UI	0.8218002E+04	0.7771008E+04	-0.9458745E-10	-0.1217184E-13	212
136	UI	0.3668711E+04	0.3490368E+04	0.1759872E-09	0.5042082E-13	213
137	UI	0.3046576E+04	0.2897664E+04	0.1459739E-09	0.5037641E-13	216
138	UI	0.8689639E+04	0.8264927E+04	0.4183676E-09	0.5061963E-13	219
139	UI	0.8689639E+04	0.8264927E+04	0.4183676E-09	0.5061963E-13	222
140	UI	0.3668711E+04	0.3490368E+04	0.1759872E-09	0.5042082E-13	225
141	UI	0.3099372E+04	0.2897664E+04	-0.2592060E-10	-0.8945343E-14	228
142	UI	0.3521988E+04	0.3292800E+04	-0.2955858E-10	-0.8976730E-14	231
143	UI	0.8840220E+04	0.8264927E+04	-0.7275958E-10	-0.8803414E-14	234
144	UI	0.8218002E+04	0.7771008E+04	-0.9458745E-10	-0.1217184E-13	237
145	UI	0.3691103E+04	0.3490368E+04	-0.4274625E-10	-0.1224692E-13	240
146	UI	0.3412598E+04	0.3226944E+04	-0.3956302E-10	-0.1226021E-13	243
147	UI	0.3551879E+04	0.3358656E+04	-0.4138201E-10	-0.1232100E-13	246
148	UI	0.2938386E+05	0.2673264E+05	0.1442220E-04	0.5394977E-09	251
149	UI	0.6790511E+06	0.6243691E+06	0.1184783E-01	0.1897569E-07	252
150	UI	0.6790488E+06	0.6243691E+06	-0.1164081E-01	-0.1864412E-07	253
151	UI	0.1081419E+06	0.9943960E+05	0.1859627E-02	0.1870107E-07	254
152	UI	0.1081415E+06	0.9943960E+05	-0.1824977E-02	-0.1835262E-07	255
153	UI	0.3178965E+06	0.2904424E+06	0.6287884E-02	0.2164933E-07	256
154	UI	0.3178962E+06	0.2904424E+06	-0.6153359E-02	-0.2118616E-07	257
155	UI	0.2597354E+06	0.2401533E+06	-0.7050697E-03	-0.2935915E-08	258
156	UI	0.2597341E+06	0.2401533E+06	-0.5852289E-03	-0.2436897E-08	259
157	UI	0.1296883E+07	0.1196039E+07	0.1133327E-01	0.9475668E-08	260
158	UI	0.1296878E+07	0.1196039E+07	-0.1107014E-01	-0.9255663E-08	261
159	UI	0.2761005E+05	0.2540783E+05	0.1281053E-04	0.5041963E-09	264
160	UI	0.6669555E+06	0.6202668E+06	0.1025907E-01	0.1653971E-07	265
161	UI	0.6669533E+06	0.6202668E+06	-0.1006624E-01	-0.1622889E-07	266
162	UI	0.1016233E+06	0.9451685E+05	0.1574383E-02	0.1665717E-07	267
163	UI	0.1016229E+06	0.9451685E+05	-0.1550034E-02	-0.1639956E-07	268
164	UI	0.2486763E+06	0.2297285E+06	0.4474376E-02	0.1947680E-07	269

165	UI	0.24667618+06	0.2297285E+06	- .4380449E-02	- .1906794E-07	270
166	UI	0.2444573E+06	0.2282057E+06	- .6097024E-03	- .2671727E-08	271
167	UI	0.2444562E+06	0.2282053E+06	- .5060777E-03	- .2217642E-08	272
168	UI	0.1237005E+07	0.1152135E+07	0.9923517E-02	0.8613153E-08	273
169	UI	0.1237001E+07	0.1152135E+07	- .9696727E-02	- .8416310E-08	274
170	UI	0.1353013E+05	0.3187639E+05	0.1366274E-04	0.4286164E-09	277
171	UI	0.4598947E+06	0.4301213E+06	- .1890690E-02	- .4395714E-08	278
172	UI	0.4598909E+06	0.4301213E+06	0.1933129E-02	0.4494381E-08	279
173	UI	0.2396592E+06	0.2237348E+06	0.3494523E-02	0.1561904E-07	280
174	UI	0.2396584E+06	0.2237348E+06	- .3483189E-02	- .1556838E-07	281
175	UI	0.2090677E+05	0.1951760E+05	0.3099308E-03	0.1587956E-07	282
176	UI	0.2090670E+05	0.1951760E+05	- .3098700E-03	- .1587644E-07	283
177	UI	0.6519911E+05	0.6087804E+05	0.7747900E-03	0.1272692E-07	284
178	UI	0.6519885E+05	0.6087804E+05	- .7678138E-03	- .1261233E-07	285
179	UI	0.1309886E+06	0.1223457E+06	0.1330693E-02	0.1087650E-07	286
180	UI	0.1309880E+06	0.1223457E+06	- .1321929E-02	- .1080487E-07	287
181	UI	0.5868825E+04	0.5480665E+04	0.7097281E-04	0.1294967E-07	288
182	UI	0.5868800E+04	0.5480665E+04	- .7076824E-04	- .1291235E-07	289
183	UI	0.4896317E+06	0.4695595E+06	- .2437861E-02	- .5191804E-08	291
184	UI	0.4896305E+06	0.4695595E+06	0.2491497E-02	0.5306031E-08	292
185	UI	0.1590156E+06	0.1515484E+06	- .9497092E-04	- .6266706E-09	293
186	UI	0.1590155E+06	0.1515484E+06	- .3442933E-03	- .2271837E-08	294
187	UI	0.6145872E+05	0.5941977E+05	- .7368592E-03	- .1240091E-07	295
188	UI	0.6145867E+05	0.5941977E+05	0.7530627E-03	0.1267361E-07	296
189	UI	0.8925062E+06	0.8317736E+06	0.6984023E-02	0.8396543E-08	297
190	UI	0.8925040E+06	0.8317736E+06	- .6834289E-02	- .8216525E-08	298
191	UI	0.1604713E+06	0.1593428E+06	- .5620766E-10	- .3652983E-15	301
192	UI	0.1592194E+06	0.1593428E+06	0.0000000E+00	0.0000000E+00	302
193	UI	0.1270999E+06	0.1259331E+06	- .4365575E-10	- .3466583E-15	303
194	UI	0.1260577E+06	0.1259331E+06	0.0000000E+00	0.0000000E+00	304
195	UI	0.1608192E+06	0.1593428E+06	- .8731149E-10	- .5379474E-15	305
196	UI	0.1595004E+06	0.1593428E+06	0.0000000E+00	0.0000000E+00	306
197	UI	0.4594590E+05	0.4554914E+05	- .1455192E-10	- .3194773E-15	307
198	UI	0.4522673E+05	0.4554914E+05	0.0000000E+00	0.0000000E+00	308
199	UI	0.2720417E+06	0.2685974E+06	- .1164153E-09	- .4334194E-15	309
200	UI	0.2703076E+06	0.2685974E+06	0.0000000E+00	0.0000000E+00	310
201	UI	0.2803331E+06	0.2783617E+06	- .1164133E-09	- .4182160E-15	311
202	UI	0.2781461E+06	0.2783617E+06	0.0000000E+00	0.0000000E+00	312
203	UI	0.1557244E+06	0.1548037E+06	- .5620766E-10	- .3760094E-15	313
204	UI	0.1549445E+06	0.1548037E+06	0.0000000E+00	0.0000000E+00	314
205	UI	0.1327527E+06	0.1327945E+06	- .2910383E-10	- .2191644E-15	315
206	UI	0.1320171E+06	0.1327945E+06	0.0000000E+00	0.0000000E+00	316
207	UI	0.3559137E+06	0.3551038E+06	0.580767E-10	0.1639173E-15	317
208	UI	0.3550476E+06	0.3551038E+06	0.0000000E+00	0.0000000E+00	318
209	UI	0.3063575E+06	0.3064407E+06	0.0000000E+00	0.0000000E+00	319
210	UI	0.3063463E+06	0.3064407E+06	- .5820766E-10	- .1899476E-15	320
211	UI	0.7064957E+05	0.7014656E+05	0.1455192E-10	0.2074502E-15	321
212	UI	0.7030385E+05	0.7014656E+05	0.0000000E+00	0.0000000E+00	322
213	UI	0.2792071E+05	0.2807896E+05	0.0000000E+00	0.0000000E+00	323
214	UI	0.2772823E+05	0.2807896E+05	0.0000000E+00	0.0000000E+00	324
215	UI	0.2513779E+06	0.2514439E+06	0.0000000E+00	0.0000000E+00	325
216	UI	0.2499720E+06	0.2514439E+06	0.2910383E-10	0.1157468E-15	326
217	UI	0.3559380E+06	0.3551038E+06	0.0000000E+00	0.0000000E+00	327
218	UI	0.3550876E+06	0.3551038E+06	0.5820766E-10	0.1639173E-15	328
219	UI	0.1356544E+06	0.1356974E+06	- .2910383E-10	- .2144760E-15	329
220	UI	0.1348978E+06	0.1356974E+06	0.0000000E+00	0.0000000E+00	330

221	UI	0.1549369E+06	0.1548037E+06	0.0000000E+00	0.0000000E+00	331
222	UI	0.1557161E+06	0.1548037E+06	0.0000000E+00	0.0000000E+00	332
223	UI	0.2680902E+06	0.2681752E+06	0.0000000E+00	0.0000000E+00	333
224	UI	0.2665950E+06	0.2681752E+06	0.0000000E+00	0.0000000E+00	334
225	UI	0.3085799E+05	0.3103464E+05	0.0000000E+00	0.0000000E+00	335
226	UI	0.3064575E+05	0.3103464E+05	0.0000000E+00	0.0000000E+00	336
227	UI	0.5380531E+05	0.5342531E+05	0.0000000E+00	0.0000000E+00	337
228	UI	0.5354511E+05	0.5342531E+05	0.7275958E-11	0.1361893E-15	338
229	UI	0.2803233E+06	0.2783617E+06	0.5820766E-10	0.2091080E-15	339
230	UI	0.2781508E+06	0.2783617E+06	0.5820766E-10	0.2091080E-15	340
231	UI	0.2720326E+06	0.2685974E+06	0.5820766E-10	0.2167097E-15	341
232	UI	0.2703118E+06	0.2685974E+06	0.0000000E+00	0.0000000E+00	342
233	UI	0.4594388E+05	0.4554914E+05	0.0000000E+00	0.0000000E+00	343
234	UI	0.4522690E+05	0.4554914E+05	0.0000000E+00	0.0000000E+00	344
235	UI	0.1608121E+06	0.1593428E+06	0.2910383E-10	0.1826491E-15	345
236	UI	0.1595004E+06	0.1593428E+06	0.0000000E+00	0.0000000E+00	346
237	UI	0.4458-.22E+05	0.4417686E+05	- .7275958E-11	- .1647007E-15	347
238	UI	0.4422056E+05	0.4417686E+05	0.0000000E+00	0.0000000E+00	348
239	UI	0.1083430E+06	0.1070272E+06	0.0000000E+00	0.0000000E+00	349
240	UI	0.1067695E+06	0.1070272E+06	0.0000000E+00	0.0000000E+00	350
241	UI	0.1160015E+06	0.1150076E+06	- .1455192E-10	- .1265300E-15	351
242	UI	0.1151491E+06	0.1150076E+06	0.0000000E+00	0.0000000E+00	352
243	UI	0.1391725E+07	0.1293638E+07	- .2328306E-09	- .1799813E-15	353
244	UI	0.1429104E+07	0.1293638E+07	0.0000000E+00	0.0000000E+00	354
245	UI	0.7647270E+06	0.7120022E+06	0.0000000E+00	0.0000000E+00	355
246	UI	0.7865552E+06	0.7120022E+06	0.0000000E+00	0.0000000E+00	356
247	UI	0.3785488E+06	0.3723101E+06	0.0000000E+00	0.0000000E+00	357
248	UI	0.3780492E+06	0.3723101E+06	0.0000000E+00	0.0000000E+00	358
249	UI	0.4801372E+06	0.4427187E+06	- .5820766E-10	- .1314778E-15	359
250	UI	0.4495430E+06	0.4427187E+06	0.0000000E+00	0.0000000E+00	360
251	UI	0.7647176E+06	0.7120022E+06	0.0000000E+00	0.0000000E+00	361
252	UI	0.7865552E+06	0.7120022E+06	0.0000000E+00	0.0000000E+00	362
253	UI	0.3785334E+06	0.3723101E+06	0.0000000E+00	0.0000000E+00	363
254	UI	0.3780458E+06	0.3723101E+06	0.0000000E+00	0.0000000E+00	364
255	UI	0.4504945E+06	0.4430881E+06	0.0000000E+00	0.0000000E+00	365
256	UI	0.4499141E+06	0.4430881E+06	0.0000000E+00	0.0000000E+00	366
257	UI	0.1335499E+07	0.1241386E+07	0.2328306E-09	0.1875571E-15	367
258	UI	0.1371380E+07	0.1241386E+07	0.0000000E+00	0.0000000E+00	368
259	UI	0.3201746E+04	0.3062304E+04	- .1818989E-11	- .5939937E-15	369
260	UI	0.4066831E+04	0.3951360E+04	0.4547474E-12	0.1150863E-15	372
261	UI	0.3456734E+04	0.3358656E+04	0.0000000E+00	0.0000000E+00	375
262	UI	0.1961671E+02	0.1906094E+02	0.0000000E+00	0.0000000E+00	376
263	UI	0.3456477E+04	0.3358656E+04	0.0000000E+00	0.0000000E+00	377
264	UI	0.2440032E+04	0.2370816E+04	- .4547474E-12	- .1918105E-15	378
265	UI	0.1384291E+02	0.1345081E+02	- .3552714E-14	- .2641264E-15	379
266	UI	0.2439850E+04	0.2370816E+04	0.0000000E+00	0.0000000E+00	380
267	UI	0.3456818E+04	0.3358656E+04	0.0000000E+00	0.0000000E+00	381
268	UI	0.3151425E+04	0.3062304E+04	0.0000000E+00	0.0000000E+00	384
269	UI	0.3456415E+04	0.3358656E+04	0.0000000E+00	0.0000000E+00	387
270	UI	0.3201073E+04	0.3062304E+04	- .4547474E-12	- .1484984E-15	390
271	UI	0.2329791E+06	0.2339983E+06	0.1018634E-08	0.4353168E-14	406
272	UI	0.2316157E+06	0.2339983E+06	0.0000000E+00	0.0000000E+00	407
273	UI	0.2305810E+06	0.2339983E+06	0.0000000E+00	0.0000000E+00	408
274	UI	0.2298718E+06	0.2339983E+06	- .2910383E-10	- .1243762E-15	409
275	UI	0.2294880E+06	0.2339983E+06	0.2910383E-10	0.1243762E-15	410
276	UI	0.2294325E+06	0.2339983E+06	- .2910383E-10	- .1243762E-15	411



277	UI	0.2297120E+06	0.2339983E+06	- .2910383E-10	- .1243762E-15	412
278	UI	0.2303370E+06	0.2339983E+06	0.0000000E+00	0.0000000E+00	413
279	UI	0.2313221E+06	0.2339983E+06	0.0000000E+00	0.0000000E+00	414
280	UI	0.2326850E+06	0.2339983E+06	0.0000000E+00	0.0000000E+00	415
281	UI	0.2344461E+06	0.2339983E+06	- .1746230E-09	- .7462574E-15	416
282	UI	0.1319348E+06	0.1325184E+06	0.6111804E-09	0.4612043E-14	417
283	UI	0.1311594E+06	0.1325184E+06	0.0000000E+00	0.0000000E+00	418
284	UI	0.1305613E+06	0.1325184E+06	0.0000000E+00	0.0000000E+00	419
285	UI	0.1301371E+06	0.1325184E+06	0.0000000E+00	0.0000000E+00	420
286	UI	0.1298837E+06	0.1325184E+06	0.0000000E+00	0.0000000E+00	421
287	UI	0.1381799E+05	0.1383488E+05	0.1818989E-09	0.4743276E-14	422
288	UI	0.1379553E+05	0.1383488E+05	0.0000000E+00	0.0000000E+00	423
289	UI	0.1377824E+05	0.1383488E+05	0.0000000E+00	0.0000000E+00	424
290	UI	0.1376596E+05	0.1383488E+05	- .7275958E-11	- .1897311E-15	425
291	UI	0.1375863E+05	0.1383488E+05	0.0000000E+00	0.0000000E+00	426
292	UI	0.1447840E+07	0.1468973E+07	0.1117587E-07	0.7607948E-14	427
293	UI	0.1442021E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	428
294	UI	0.1436870E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	429
295	UI	0.1432338E+07	0.1468973E+07	- .2328306E-09	- .1584989E-15	430
296	UI	0.1428380E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	431
297	UI	0.1424945E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	432
298	UI	0.1421987E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	433
299	UI	0.1419457E+07	0.1468973E+07	0.2328306E-09	0.1584989E-15	434
300	UI	0.1417310E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	435
301	UI	0.1415502E+07	0.1468973E+07	0.2328306E-09	0.1584989E-15	436
302	UI	0.1413991E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	437
303	UI	0.1412738E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	438
304	UI	0.1411708E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	439
305	UI	0.1410868E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	440
306	UI	0.1410188E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	441
307	UI	0.1409643E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	442
308	UI	0.1409210E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	443
309	UI	0.1408869E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	444
310	UI	0.1408601E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	445
311	UI	0.1408394E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	446
312	UI	0.1408235E+07	0.1468973E+07	- .2328306E-09	- .1584989E-15	447
313	UI	0.1408114E+07	0.1468973E+07	- .2328306E-09	- .1584989E-15	448
314	UI	0.1408023E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	449
315	UI	0.1407954E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	450
316	UI	0.1407904E+07	0.1468973E+07	- .2328306E-09	- .1584989E-15	451
317	UI	0.1407867E+07	0.1468973E+07	0.2328306E-09	0.1584989E-15	452
318	UI	0.1407840E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	453
319	UI	0.1407820E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	454
320	UI	0.1407806E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	455
321	UI	0.1407796E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	456
322	UI	0.1407789E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	457
323	UI	0.1407785E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	458
324	UI	0.1407781E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	459
325	UI	0.1407779E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	460
326	UI	0.1407778E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	461
327	UI	0.1407776E+07	0.1468973E+07	0.2328306E-09	0.1584989E-15	462
328	UI	0.1407776E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	463
329	UI	0.1407775E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	464
330	UI	0.1407775E+07	0.1468973E+07	0.2328306E-09	0.1584989E-15	465
331	UI	0.1407775E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	466
332	UI	0.1407775E+07	0.1468973E+07	0.0000000E+00	0.0000000E+00	467

333	UI	0.1070465E+06	0.1075200E+06	0.4602132E-09	0.4466269E-14	468
334	UI	0.1064174E+06	0.1075200E+06	0.1455192E-10	0.1353415E-15	469
335	UI	0.1059321E+06	0.1075200E+06	0.0000000E+00	0.0000000E+00	470
336	UI	0.1055879E+06	0.1075200E+06	0.0000000E+00	0.0000000E+00	471
337	UI	0.1053823E+06	0.1075200E+06	0.0000000E+00	0.0000000E+00	472
338	UI	0.1120420E+06	0.1125376E+06	0.5093170E-09	0.4525750E-14	473
339	UI	0.1113835E+06	0.1125376E+06	0.0000000E+00	0.0000000E+00	474
340	UI	0.1108756E+06	0.1125376E+06	0.0000000E+00	0.0000000E+00	475
341	UI	0.1105193E+06	0.1125376E+06	- .1455192E-10	- .1293072E-15	476
342	UI	0.1103002E+06	0.1125376E+06	0.0000000E+00	0.0000000E+00	477
343	UI	0.2323686E+06	0.2334558E+06	0.1018634E-08	0.4363284E-14	478
344	UI	0.2309863E+06	0.2334558E+06	0.0000000E+00	0.0000000E+00	479
345	UI	0.2299217E+06	0.2334558E+06	0.0000000E+00	0.0000000E+00	480
346	UI	0.2291696E+06	0.2334558E+06	0.2910383E-10	0.1246652E-15	481
347	UI	0.2287267E+06	0.2334558E+06	0.0000000E+00	0.0000000E+00	482
348	UI	0.2285925E+06	0.2334558E+06	0.0000000E+00	0.0000000E+00	483
349	UI	0.2287697E+06	0.2334558E+06	0.0000000E+00	0.0000000E+00	484
350	UI	0.2292646E+06	0.2334558E+06	0.2910383E-10	0.1246652E-15	485
351	UI	0.2300862E+06	0.2334558E+06	0.2910383E-10	0.1246652E-15	486
352	UI	0.2312475E+06	0.2334558E+06	0.0000000E+00	0.0000000E+00	487
353	UI	0.2327631E+06	0.2334558E+06	- .1164153E-09	- .49886610E-15	488
354	UI	0.4433508E+05	0.4453120E+05	0.2037268E-09	0.4574923E-14	489
355	UI	0.4407453E+05	0.4453120E+05	0.0000000E+00	0.0000000E+00	490
356	UI	0.4387356E+05	0.4453120E+05	0.0000000E+00	0.0000000E+00	491
357	UI	0.4373099E+05	0.4453120E+05	0.0000000E+00	0.0000000E+00	492
358	UI	0.4364585E+05	0.4453120E+05	0.7275958E-11	0.1633901E-15	493
359	UI	0.4076687E+05	0.4094720E+05	0.1891749E-09	0.4619972E-14	494
360	UI	0.4052728E+05	0.4094720E+05	0.0000000E+00	0.0000000E+00	495
361	UI	0.4034249E+05	0.4094720E+05	- .7275958E-11	- .1776912E-15	496
362	UI	0.4021139E+05	0.4094720E+05	0.0000000E+00	0.0000000E+00	497
363	UI	0.4013311E+05	0.4094720E+05	0.0000000E+00	0.0000000E+00	498
364	UI	0.2290775E+06	0.2300928E+06	0.1047738E-08	0.4553545E-14	499
365	UI	0.2277332E+06	0.2300928E+06	0.0000000E+00	0.0000000E+00	500
366	UI	0.2266948E+06	0.2300928E+06	0.0000000E+00	0.0000000E+00	501
367	UI	0.2259581E+06	0.2300928E+06	0.0000000E+00	0.0000000E+00	502
368	UI	0.2255182E+06	0.2300928E+06	0.0000000E+00	0.0000000E+00	503
369	UI	0.1059559E+06	0.1056562E+06	0.4365575E-09	0.4131866E-14	504
370	UI	0.1054055E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	505
371	UI	0.1049623E+06	0.1056562E+06	- .1455192E-10	- .1377289E-15	506
372	UI	0.1046156E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	507
373	UI	0.1043544E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	508
374	UI	0.1041678E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	509
375	UI	0.1040450E+06	0.1056562E+06	0.1455192E-10	0.1377289E-15	510
376	UI	0.1039758E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	511
377	UI	0.1039509E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	512
378	UI	0.1039619E+06	0.1056562E+06	- .1455192E-10	- .1377289E-15	513
379	UI	0.1040015E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	514
380	UI	0.1040634E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	515
381	UI	0.1041424E+06	0.1056562E+06	- .1455192E-10	- .1377289E-15	516
382	UI	0.1042342E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	517
383	UI	0.1043355E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	518
384	UI	0.1044436E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	519
385	UI	0.1045566E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	520
386	UI	0.1046731E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	521
387	UI	0.1047918E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	522
388	UI	0.1049121E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	523

389	UI	0.1050334E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	524
390	UI	0.1051554E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	525
391	UI	0.1052778E+06	0.1056562E+06	0.0000000E+00	0.0000000E+00	526
392	UI	0.1212504E+06	0.1209075E+06	0.4947651E-09	0.4092096E-14	527
393	UI	0.1206206E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	528
394	UI	0.1201134E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	529
395	UI	0.1197166E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	530
396	UI	0.1194178E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	531
397	UI	0.1192042E+06	0.1209075E+06	-1.455192E-10	-1.203558E-15	532
398	UI	0.1190636E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	533
399	UI	0.1189845E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	534
400	UI	0.1189560E+06	0.1209075E+06	0.1455192E-10	0.1203558E-15	535
401	UI	0.1189686E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	536
402	UI	0.1190139E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	537
403	UI	0.1190847E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	538
404	UI	0.1191751E+06	0.1209075E+06	0.1455192E-10	0.1203558E-15	539
405	UI	0.1192802E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	540
406	UI	0.1193961E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	541
407	UI	0.1195198E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	542
408	UI	0.1196492E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	543
409	UI	0.1197824E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	544
410	UI	0.1199183E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	545
411	UI	0.1200559E+06	0.1209075E+06	0.1455192E-10	0.1203558E-15	546
412	UI	0.1201947E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	547
413	UI	0.1203343E+06	0.1209075E+06	0.0000000E+00	0.0000000E+00	548
414	UI	0.1204745E+06	0.1209075E+06	0.1455192E-10	0.1203558E-15	549
415	UI	0.1227271E+06	0.1224716E+06	0.1018634E-08	0.4532968E-14	550
416	UI	0.1224123E+06	0.1224716E+06	0.0000000E+00	0.0000000E+00	551
417	UI	0.1221382E+06	0.1224716E+06	0.0000000E+00	0.0000000E+00	552
418	UI	0.1220678E+06	0.1224716E+06	0.0000000E+00	0.0000000E+00	553
419	UI	0.1220249E+06	0.1224716E+06	0.0000000E+00	0.0000000E+00	554
420	UI	0.9321964E+05	0.9363199E+05	0.4365575E-09	0.4662482E-14	555
421	UI	0.9247179E+05	0.9363199E+05	0.0000000E+00	0.0000000E+00	556
422	UI	0.9224923E+05	0.9363199E+05	0.0000000E+00	0.0000000E+00	557
423	UI	0.9194945E+05	0.9363199E+05	-1.455192E-10	-1.554161E-15	558
424	UI	0.9177045E+05	0.9363199E+05	0.0000000E+00	0.0000000E+00	559
425	UI	0.1350690E+06	0.1347584E+06	-8.731149E-10	-6.479113E-15	560
426	UI	0.1340760E+06	0.1347584E+06	0.2910383E-10	0.2159704E-15	561
427	UI	0.1333164E+06	0.1347584E+06	0.2910383E-10	0.2159704E-15	562
428	UI	0.1327809E+06	0.1347584E+06	0.0000000E+00	0.0000000E+00	563
429	UI	0.1324626E+06	0.1347584E+06	0.0000000E+00	0.0000000E+00	564
430	UI	0.8612445E+05	0.8592640E+05	-7.275958E-10	-8.467663E-15	565
431	UI	0.8549130E+05	0.8592640E+05	0.0000000E+00	0.0000000E+00	566
432	UI	0.8500693E+05	0.8592640E+05	0.0000000E+00	0.0000000E+00	567
433	UI	0.8466549E+05	0.8592640E+05	0.0000000E+00	0.0000000E+00	568
434	UI	0.8446251E+05	0.8592640E+05	0.1455192E-10	0.1693533E-15	569
435	UI	0.2576330E+06	0.2569330E+06	-2.910383E-09	-1.132740E-14	570
436	UI	0.2566093E+06	0.2569330E+06	-2.910383E-10	-1.132740E-15	571
437	UI	0.2557356E+06	0.2569330E+06	0.2910383E-10	0.1132740E-15	572
438	UI	0.2549988E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	573
439	UI	0.2543859E+06	0.2569330E+06	0.2910383E-10	0.1132740E-15	574
440	UI	0.2538845E+06	0.2569330E+06	-2.910383E-10	-1.132740E-15	575
441	UI	0.2534826E+06	0.2569330E+06	0.2910383E-10	0.1132740E-15	576
442	UI	0.2531687E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	577
443	UI	0.2529322E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	578
444	UI	0.2527630E+06	0.2569330E+06	-2.910383E-10	-1.132740E-15	579

445	UI	0.2526520E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	580
446	UI	0.2525909E+06	0.2569330E+06	-.2910373E-10	-.1132740E-15	581
447	UI	0.2525721E+06	0.2569330E+06	0.2910383E-10	0.1132740E-15	582
448	UI	0.2525890E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	583
449	UI	0.2526356E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	584
450	UI	0.2527088E+06	0.2569330E+06	0.2910383E-10	0.1132740E-15	585
451	UI	0.2527982E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	586
452	UI	0.2529060E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	587
453	UI	0.2530270E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	588
454	UI	0.2531585E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	589
455	UI	0.2532983E+06	0.2569330E+06	-.2910383E-10	-.1132740E-15	590
456	UI	0.2534447E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	591
457	UI	0.2535961E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	592
458	UI	0.2537514E+06	0.2569330E+06	-.2910383E-10	-.1132740E-15	593
459	UI	0.2539096E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	594
460	UI	0.2540701E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	595
461	UI	0.2542323E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	596
462	UI	0.2543956E+06	0.2569330E+06	-.2910383E-10	-.1132740E-15	597
463	UI	0.2545599E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	598
464	UI	0.2547249E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	599
465	UI	0.2548903E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	600
466	UI	0.2550561E+06	0.2569330E+06	0.2910383E-10	0.1132740E-15	601
467	UI	0.2552221E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	602
468	UI	0.2553882E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	603
469	UI	0.2555546E+06	0.2569330E+06	0.0000000E+00	0.0000000E+00	604
470	UI	0.3324198E+06	0.3325140E+06	-.4074536E-09	-.1225373E-14	605
471	UI	0.3320951E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	606
472	UI	0.3309643E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	607
473	UI	0.3300107E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	608
474	UI	0.3292176E+06	0.3325140E+06	0.5820766E-10	0.1750533E-15	609
475	UI	0.3285687E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	610
476	UI	0.3280485E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	611
477	UI	0.3276423E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	612
478	UI	0.3273362E+06	0.3325140E+06	0.5820766E-10	0.1750533E-15	613
479	UI	0.3271173E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	614
480	UI	0.3269737E+06	0.3325140E+06	-.5820766E-10	-.1750533E-15	615
481	UI	0.3268945E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	616
482	UI	0.3268702E+06	0.3325140E+06	0.5820766E-10	0.1750533E-15	617
483	UI	0.3268920E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	618
484	UI	0.3269524E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	619
485	UI	0.3270445E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	620
486	UI	0.3271628E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	621
487	UI	0.3273023E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	622
488	UI	0.3274589E+06	0.3325140E+06	-.5820766E-10	-.1750533E-15	623
489	UI	0.3276291E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	624
490	UI	0.3278101E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	625
491	UI	0.3279995E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	626
492	UI	0.3281954E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	627
493	UI	0.3283964E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	628
494	UI	0.3286012E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	629
495	UI	0.3288089E+06	0.3325140E+06	0.5820766E-10	0.1750533E-15	630
496	UI	0.3290188E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	631
497	UI	0.3292302E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	632
498	UI	0.3294428E+06	0.3325140E+06	-.5820766E-10	-.1750533E-15	633
499	UI	0.3296563E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	634
500	UI	0.3298704E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	635

501	UI	0.3300849E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	636
502	UI	0.3302997E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	637
503	UI	0.3305146E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	638
504	UI	0.3307300E+06	0.3325140E+06	- 5620766E-10	- .1750533E-15	639
505	UI	0.9519610E+05	0.9500400E+05	- .8731149E-10	- .9190296E-15	640
506	UI	0.9481028E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	641
507	UI	0.9445785E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	642
508	UI	0.9419589E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	643
509	UI	0.9395736E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	644
510	UI	0.9375813E+05	0.9500400E+05	- .1455192E-10	- .1531716E-15	645
511	UI	0.9359356E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	646
512	UI	0.9345922E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	647
513	UI	0.9335095E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	648
514	UI	0.9326688E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	649
515	UI	0.9319751E+05	0.9500400E+05	- .1455192E-10	- .1531716E-15	650
516	UI	0.931456E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	651
517	UI	0.9310677E+05	0.9500400E+05	- .1455192E-10	- .1531716E-15	652
518	UI	0.9307786E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	653
519	UI	0.9304757E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	654
520	UI	0.9304418E+05	0.9500400E+05	0.1455192E-10	0.1531716E-15	655
521	UI	0.9304659E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	656
522	UI	0.2546203E+05	0.2553600E+05	- .1818989E-10	- .7123236E-15	657
523	UI	0.2529761E+05	0.2553600E+05	0.0000000E+00	0.0000000E+00	658
524	UI	0.2517168E+05	0.2553600E+05	- .1637979E-11	- .1424647E-15	659
525	UI	0.2508286E+05	0.2553600E+05	0.0000000E+00	0.0000000E+00	660
526	UI	0.2502999E+05	0.2553600E+05	0.0000000E+00	0.0000000E+00	661
527	UI	0.1418726E+06	0.1422848E+06	- .8731149E-10	- .6136390E-15	662
528	UI	0.1409565E+06	0.1422848E+06	0.0000000E+00	0.0000000E+00	663
529	UI	0.1402548E+06	0.1422848E+06	0.0000000E+00	0.0000000E+00	664
530	UI	0.1397598E+06	0.1422848E+06	0.0000000E+00	0.0000000E+00	665
531	UI	0.1394653E+06	0.1422848E+06	0.0000000E+00	0.0000000E+00	666
532	UI	0.9483025E+05	0.9500400E+05	- .8731149E-10	- .9190296E-15	667
533	UI	0.9450321E+05	0.9500400E+05	0.1455192E-10	0.1531716E-15	668
534	UI	0.9422235E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	669
535	UI	0.9398343E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	670
536	UI	0.9378227E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	671
537	UI	0.9361473E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	672
538	UI	0.9347684E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	673
539	UI	0.9336479E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	674
540	UI	0.9327498E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	675
541	UI	0.9320409E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	676
542	UI	0.9314903E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	677
543	UI	0.9310706E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	678
544	UI	0.9307574E+05	0.9500400E+05	- .1455192E-10	- .1531716E-15	679
545	UI	0.9305300E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	680
546	UI	0.9301711E+05	0.9500400E+05	0.0000000E+00	0.0000000E+00	681
547	UI	0.9302673E+05	0.9500400E+05	0.1455192E-10	0.1531716E-15	682
548	UI	0.9302090E+05	0.9500400E+05	- .1455192E-10	- .1531716E-15	683
549	UI	0.3321418E+06	0.3325140E+06	- .1492460E-09	- .1050320E-14	684
550	UI	0.3310224E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	685
551	UI	0.3300695E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	686
552	UI	0.3292688E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	687
553	UI	0.3286063E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	688
554	UI	0.3280683E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	689
555	UI	0.3276415E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	690
556	UI	0.3273135E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	691

557	UI	0.3270723E+06	0.3325140E+06	0.5820766E-10	0.1750533E-15	692
558	UI	0.3269070E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	693
559	UI	0.3268072E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	694
560	UI	0.3267638E+06	0.3325140E+06	0.5820766E-10	0.1750533E-15	695
561	UI	0.3267682E+06	0.3325140E+06	-0.5820766E-10	-0.1750533E-15	696
562	UI	0.3268130E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	697
563	UI	0.3268916E+06	0.3325140E+06	0.5820766E-10	0.1750533E-15	698
564	UI	0.3269982E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	699
565	UI	0.3271277E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	700
566	UI	0.3272759E+06	0.3325140E+06	0.5820766E-10	0.1750533E-15	701
567	UI	0.3274392E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	702
568	UI	0.3276146E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	703
569	UI	0.3277994E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	704
570	UI	0.3279917E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	705
571	UI	0.3281898E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	706
572	UI	0.3283924E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	707
573	UI	0.3285984E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	708
574	UI	0.3288069E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	709
575	UI	0.3290173E+06	0.3325140E+06	-0.5820766E-10	-0.1750533E-15	710
576	UI	0.3292292E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	711
577	UI	0.3294421E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	712
578	UI	0.3296558E+06	0.3325140E+06	0.5820766E-10	0.1750533E-15	713
579	UI	0.3298700E+06	0.3325140E+06	-0.5820766E-10	-0.1750533E-15	714
580	UI	0.3300847E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	715
581	UI	0.3302996E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	716
582	UI	0.3305147E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	717
583	UI	0.3307299E+06	0.3325140E+06	0.0000000E+00	0.0000000E+00	718
584	UI	0.9869357E+05	0.9880416E+05	-0.731149E-10	-0.8836824E-15	719
585	UI	0.9836095E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	720
586	UI	0.9807779E+05	0.9880416E+05	0.1455192E-10	0.1472804E-15	721
587	UI	0.9783988E+05	0.9880416E+05	-0.1455192E-10	-0.1472804E-15	722
588	UI	0.9764301E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	723
589	UI	0.9748314E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	724
590	UI	0.9735634E+05	0.9880416E+05	0.1455192E-10	0.1472804E-15	725
591	UI	0.9725887E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	726
592	UI	0.9718721E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	727
593	UI	0.9713807E+05	0.9880416E+05	0.1455192E-10	0.1472804E-15	728
594	UI	0.9710843E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	729
595	UI	0.9709551E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	730
596	UI	0.9709683E+05	0.9880416E+05	-0.1455192E-10	-0.1472804E-15	731
597	UI	0.9711015E+05	0.9880416E+05	-0.1455192E-10	-0.1472804E-15	732
598	UI	0.9713351E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	733
599	UI	0.9716517E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	734
600	UI	0.9720366E+05	0.9880416E+05	0.1455192E-10	0.1472804E-15	735
601	UI	0.9724771E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	736
602	UI	0.9729623E+05	0.9880416E+05	-0.1455192E-10	-0.1472804E-15	737
603	UI	0.9734832E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	738
604	UI	0.9740325E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	739
605	UI	0.9746039E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	740
606	UI	0.9751926E+05	0.9880416E+05	-0.1455192E-10	-0.1472804E-15	741
607	UI	0.9757945E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	742
608	UI	0.9764065E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	743
609	UI	0.9770261E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	744
610	UI	0.9776515E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	745
611	UI	0.9782811E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	746
612	UI	0.9789137E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	747



613	UI	0.9795487E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	748
614	UI	0.9801852E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	749
615	UI	0.9808230E+05	0.9880416E+05	0.1455192E-10	0.1472804E-15	750
616	UI	0.9814615E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	751
617	UI	0.9821007E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	752
618	UI	0.9827404E+05	0.9880416E+05	0.0000000E+00	0.0000000E+00	753
619	UI	0.2080722E+06	0.2073344E+06	-5.820766E-10	-2.807429E-15	754
620	UI	0.2069091E+06	0.2073344E+06	0.0000000E+00	0.0000000E+00	755
621	UI	0.2060240E+06	0.2073344E+06	0.2910383E-10	0.1403715E-15	756
622	UI	0.2054028E+06	0.2073344E+06	0.0000000E+00	0.0000000E+00	757
623	UI	0.2050346E+06	0.2073344E+06	-2.910383E-10	-1.403715E-15	758
624	UI	0.2054831E+05	0.2060800E+05	-1.091394E-10	-5.295971E-15	759
625	UI	0.2041561E+05	0.2060800E+05	0.3637979E-11	0.1765324E-15	760
626	UI	0.2031399E+05	0.2060800E+05	0.0000000E+00	0.0000000E+00	761
627	UI	0.2024229E+05	0.2060800E+05	0.3637979E-11	0.1765324E-15	762
628	UI	0.2019964E+05	0.2060800E+05	0.0000000E+00	0.0000000E+00	763
629	UI	0.1235579E+06	0.1239168E+06	-7.275958E-10	-5.871648E-15	764
630	UI	0.1227600E+06	0.1239168E+06	0.0000000E+00	0.0000000E+00	765
631	UI	0.1221489E+06	0.1239168E+06	0.0000000E+00	0.0000000E+00	766
632	UI	0.1217178E+06	0.1239168E+06	0.0000000E+00	0.0000000E+00	767
633	UI	0.1214613E+06	0.1239168E+06	-1.455192E-10	-1.174330E-15	768
634	UI	0.4397826E+05	0.4417280E+05	0.2037268E-09	0.4612042E-14	769
635	UI	0.4371980E+05	0.4417280E+05	0.0000000E+00	0.0000000E+00	770
636	UI	0.4352045E+05	0.4417280E+05	0.0000000E+00	0.0000000E+00	771
637	UI	0.4337902E+05	0.4417280E+05	0.0000000E+00	0.0000000E+00	772
638	UI	0.4329457E+05	0.4417280E+05	0.0000000E+00	0.0000000E+00	773
639	UI	0.3737706E+05	0.3754240E+05	0.1746230E-09	0.4651354E-14	774
640	UI	0.3715740E+05	0.3754240E+05	0.0000000E+00	0.0000000E+00	775
641	UI	0.3698797E+05	0.3754240E+05	0.7275958E-11	0.1938064E-15	776
642	UI	0.3686777E+05	0.3754240E+05	0.0000000E+00	0.0000000E+00	777
643	UI	0.3679600E+05	0.3754240E+05	0.7275958E-11	0.1938064E-15	778
644	UI	0.2613718E+05	0.2625280E+05	0.1164153E-09	0.4434397E-14	779
645	UI	0.2598357E+05	0.2625280E+05	-3.637979E-11	-1.385749E-15	780
646	UI	0.2586509E+05	0.2625280E+05	0.0000000E+00	0.0000000E+00	781
647	UI	0.2578104E+05	0.2625280E+05	-3.637979E-11	-1.385749E-15	782
648	UI	0.2573085E+05	0.2625280E+05	0.3637979E-11	0.1385749E-15	783
649	UI	0.3015143E+05	0.3028480E+05	0.1382432E-09	0.4564772E-14	784
650	UI	0.2997423E+05	0.3028480E+05	0.0000000E+00	0.0000000E+00	785
651	UI	0.2983755E+05	0.3028480E+05	0.3637979E-11	0.1201256E-15	786
652	UI	0.2974059E+05	0.3028480E+05	0.0000000E+00	0.0000000E+00	787
653	UI	0.2968269E+05	0.3028480E+05	0.0000000E+00	0.0000000E+00	788
654	UI	0.9152473E+05	0.9192959E+05	0.4220055E-09	0.4590530E-14	789
655	UI	0.9098684E+05	0.9192959E+05	0.1455192E-10	0.1582941E-15	790
656	UI	0.9057197E+05	0.9192959E+05	0.0000000E+00	0.0000000E+00	791
657	UI	0.9027764E+05	0.9192959E+05	0.0000000E+00	0.0000000E+00	792
658	UI	0.9010189E+05	0.9192959E+05	0.0000000E+00	0.0000000E+00	793
659	UI	0.8974063E+05	0.9013759E+05	0.4220055E-09	0.4581793E-14	794
660	UI	0.8921322E+05	0.9013759E+05	0.0000000E+00	0.0000000E+00	795
661	UI	0.8880643E+05	0.9013759E+05	-1.455192E-10	-1.614411E-15	796
662	UI	0.8851784E+05	0.9013759E+05	0.1455192E-10	0.1614411E-15	797
663	UI	0.8834552E+05	0.9013759E+05	-1.455192E-10	-1.614411E-15	798
664	UI	0.3746627E+05	0.3763200E+05	0.1746230E-09	0.4640275E-14	799
665	UI	0.3724608E+05	0.3763200E+05	0.0000000E+00	0.0000000E+00	800
666	UI	0.3707625E+05	0.3763200E+05	0.7275958E-11	0.1933450E-15	801
667	UI	0.3695576E+05	0.3763200E+05	0.0000000E+00	0.0000000E+00	802
668	UI	0.3688382E+05	0.3763200E+05	0.7275958E-11	0.1933450E-15	803

669	UI	0.4499306E+05	0.4488960E+05	- .3637979E-10	- .8104280E-15	804
670	UI	0.4466230E+05	0.4488960E+05	- .7275958E-11	- .1620856E-15	805
671	UI	0.4440925E+05	0.4488960E+05	- .7275958E-11	- .1620856E-15	806
672	UI	0.4423088E+05	0.4488960E+05	- .7275958E-11	- .1620856E-15	807
673	UI	0.4412486E+05	0.4488960E+05	0.0000000E+00	0.0000000E+00	808
674	UI	0.2278182E+05	0.2286400E+05	- .1455192E-10	- .6369011E-15	809
675	UI	0.2263470E+05	0.2286400E+05	0.0000000E+00	0.0000000E+00	810
676	UI	0.2252203E+05	0.2286400E+05	0.3637979E-11	0.1592253E-15	811
677	UI	0.2244254E+05	0.2286400E+05	0.3637979E-11	0.1592253E-15	812
678	UI	0.2239525E+05	0.2286400E+05	0.0000000E+00	0.0000000E+00	813
679	UI	0.8290795E+05	0.8314880E+05	- .5820766E-10	- .7000421E-15	814
680	UI	0.8237257E+05	0.8314880E+05	0.0000000E+00	0.0000000E+00	815
681	UI	0.8196253E+05	0.8314880E+05	0.0000000E+00	0.0000000E+00	816
682	UI	0.8167325E+05	0.8314880E+05	- .1455192E-10	- .1750105E-15	817
683	UI	0.8150116E+05	0.8314880E+05	0.0000000E+00	0.0000000E+00	818
684	UI	0.5083472E+05	0.5098240E+05	- .2910383E-10	- .5708604E-15	819
685	UI	0.5050645E+05	0.5098240E+05	0.0000000E+00	0.0000000E+00	820
686	UI	0.5025504E+05	0.5098240E+05	0.0000000E+00	0.0000000E+00	821
687	UI	0.5007767E+05	0.5098240E+05	0.0000000E+00	0.0000000E+00	822
688	UI	0.4997216E+05	0.5098240E+05	0.0000000E+00	0.0000000E+00	823
689	UI	0.2801982E+07	0.2772714E+07	0.2142042E-07	0.7725435E-14	824
690	UI	0.2797115E+07	0.2772714E+07	0.0000000E+00	0.0000000E+00	825
691	UI	0.2794622E+07	0.2772714E+07	- .4656613E-09	- .1679442E-15	826
692	UI	0.2789587E+07	0.2760481E+07	0.2142042E-07	0.7759669E-14	827
693	UI	0.2784737E+07	0.2760481E+07	0.0000000E+00	0.0000000E+00	828
694	UI	0.2782251E+07	0.2760481E+07	0.0000000E+00	0.0000000E+00	829
695	UI	0.6102431E+06	0.6167871E+06	0.1047738E-08	0.1698703E-14	830
696	UI	0.6097615E+06	0.6167871E+06	0.1164153E-09	0.1887447E-15	831
697	UI	0.6093927E+06	0.6167871E+06	0.0000000E+00	0.0000000E+00	832
698	UI	0.6091324E+06	0.6167871E+06	0.0000000E+00	0.0000000E+00	833
699	UI	0.6089775E+06	0.6167871E+06	0.0000000E+00	0.0000000E+00	834
700	UI	0.6075277E+06	0.6140426E+06	0.9313226E-09	0.1516707E-14	835
701	UI	0.6070482E+06	0.6140426E+06	0.0000000E+00	0.0000000E+00	836
702	UI	0.6066811E+06	0.6140426E+06	- .1164153E-09	- .1895884E-15	837
703	UI	0.6064220E+06	0.6140426E+06	- .1164153E-09	- .1895884E-15	838
704	UI	0.6062678E+06	0.6140426E+06	- .1164153E-09	- .1895884E-15	839
705	UI	0.2380550E+07	0.2335816E+07	- .2793968E-08	- .1196142E-14	840
706	UI	0.2375188E+07	0.2335816E+07	- .4656613E-09	- .1993570E-15	841
707	UI	0.2372497E+07	0.2335816E+07	0.0000000E+00	0.0000000E+00	842
708	UI	0.1802028E+07	0.1818588E+07	- .4656613E-09	- .2560565E-15	843
709	UI	0.1800175E+07	0.1818588E+07	0.0000000E+00	0.0000000E+00	844
710	UI	0.1798761E+07	0.1818588E+07	0.0000000E+00	0.0000000E+00	845
711	UI	0.1797767E+07	0.1818588E+07	0.0000000E+00	0.0000000E+00	846
712	UI	0.1797176E+07	0.1818588E+07	0.0000000E+00	0.0000000E+00	847
713	UI	0.2278302E+07	0.2247867E+07	- .1862645E-08	- .8286279E-15	848
714	UI	0.2274087E+07	0.2247867E+07	0.0000000E+00	0.0000000E+00	849
715	UI	0.2272125E+07	0.2247867E+07	0.0000000E+00	0.0000000E+00	850
716	UI	0.1712934E+07	0.1730867E+07	- .2328304E-09	- .1345167E-15	851
717	UI	0.1711440E+07	0.1730867E+07	0.0000000E+00	0.0000000E+00	852
718	UI	0.1710299E+07	0.1730867E+07	0.0000000E+00	0.0000000E+00	853
719	UI	0.1709497E+07	0.1730867E+07	0.0000000E+00	0.0000000E+00	854
720	UI	0.1709020E+07	0.1730867E+07	0.0000000E+00	0.0000000E+00	855
721	UI	0.3201779E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	856
722	UI	0.3195520E+06	0.3186856E+06	0.5820766E-10	0.1826491E-15	857
723	UI	0.3190651E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	858
724	UI	0.3187172E+06	0.3186856E+06	0.5820766E-10	0.1826491E-15	859

725	UI	0.3105085E+06	0.3106856E+06	- .5820766E-10	- .1826491E-15	860
726	UI	0.2536186E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	861
727	UI	0.2531020E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	862
728	UI	0.2526493E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	863
729	UI	0.2522544E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	864
730	UI	0.2519144E+06	0.2518662E+06	0.2910383E-10	0.1155528E-15	865
731	UI	0.2516256E+06	0.2518662E+06	0.2910383E-10	0.1155528E-15	866
732	UI	0.2513840E+06	0.2518662E+06	0.2910383E-10	0.1155528E-15	867
733	UI	0.2511857E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	868
734	UI	0.2510267E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	869
735	UI	0.2509032E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	870
736	UI	0.2508113E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	871
737	UI	0.2507473E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	872
738	UI	0.2507079E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	873
739	UI	0.2506898E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	874
740	UI	0.2506899E+06	0.2518662E+06	0.2910383E-10	0.1155528E-15	875
741	UI	0.2507085E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	876
742	UI	0.2507342E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	877
743	UI	0.2507739E+06	0.2518662E+06	- .2910383E-10	- .1155528E-15	878
744	UI	0.2508225E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	879
745	UI	0.2508784E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	880
746	UI	0.2509403E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	881
747	UI	0.2510070E+06	0.2518662E+06	- .2910383E-10	- .1155528E-15	882
748	UI	0.2510774E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	883
749	UI	0.2511507E+06	0.2518662E+06	- .2910383E-10	- .1155528E-15	884
750	UI	0.2512264E+06	0.2518662E+06	- .2910383E-10	- .1155528E-15	885
751	UI	0.2513038E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	886
752	UI	0.2513825E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	887
753	UI	0.2514622E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	888
754	UI	0.2515427E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	889
755	UI	0.2516237E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	890
756	UI	0.2517051E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	891
757	UI	0.2517868E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	892
758	UI	0.2518687E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	893
759	UI	0.2519508E+06	0.2518662E+06	- .2910383E-10	- .1155528E-15	894
760	UI	0.2520330E+06	0.2518662E+06	0.0000000E+00	0.0000000E+00	895
761	UI	0.3209030E+06	0.3106856E+06	0.0000000E+00	0.0000000E+00	896
762	UI	0.3702505E+06	0.3106856E+06	0.0000000E+00	0.0000000E+00	897
763	UI	0.3196766E+06	0.3106856E+06	0.5820766E-10	0.1826491E-15	898
764	UI	0.3191769E+06	0.3106856E+06	0.0000000E+00	0.0000000E+00	899
765	UI	0.3187467E+06	0.3106856E+06	0.5820766E-10	0.1826491E-15	900
766	UI	0.3183812E+06	0.3106856E+06	0.5820766E-10	0.1826491E-15	901
767	UI	0.3180755E+06	0.3106856E+06	0.0000000E+00	0.0000000E+00	902
768	UI	0.3178246E+06	0.3106856E+06	0.0000000E+00	0.0000000E+00	903
769	UI	0.3176235E+06	0.3106856E+06	0.0000000E+00	0.0000000E+00	904
770	UI	0.3174672E+06	0.3106856E+06	0.0000000E+00	0.0000000E+00	905
771	UI	0.3173509E+06	0.3106856E+06	0.5820766E-10	0.1826491E-15	906
772	UI	0.3172700E+06	0.3106856E+06	- .5820766E-10	- .1826491E-15	907
773	UI	0.3172201E+06	0.3106856E+06	0.5820766E-10	0.1826491E-15	908
774	UI	0.3171972E+06	0.3106856E+06	- .5820766E-10	- .1826491E-15	909
775	UI	0.3171973E+06	0.3106856E+06	0.0000000E+00	0.0000000E+00	910
776	UI	0.3172171E+06	0.3106856E+06	0.0000000E+00	0.0000000E+00	911
777	UI	0.3172534E+06	0.3106856E+06	0.0000000E+00	0.0000000E+00	912
778	UI	0.3173036E+06	0.3106856E+06	0.5820766E-10	0.1826491E-15	913
779	UI	0.3173651E+06	0.3106856E+06	0.0000000E+00	0.0000000E+00	914
780	UI	0.3174359E+06	0.3106856E+06	0.0000000E+00	0.0000000E+00	915

781	UI	0.3175142E+06	0.3186856E+06	- .5820766E-10	- .1826491E-15	916
782	UI	0.3175985E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	917
783	UI	0.3176876E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	918
784	UI	0.3177804E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	919
785	UI	0.3178761E+06	0.3186856E+06	0.5820766E-10	0.1826491E-15	920
786	UI	0.3179740E+06	0.3186856E+06	0.5820766E-10	0.1826491E-15	921
787	UI	0.3180736E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	922
788	UI	0.3181745E+06	0.3186856E+06	0.5820766E-10	0.1826491E-15	923
789	UI	0.3182763E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	924
790	UI	0.3183788E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	925
791	UI	0.3184818E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	926
792	UI	0.3185852E+06	0.3186856E+06	- .5820766E-10	- .1826491E-15	927
793	UI	0.3186889E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	928
794	UI	0.3187927E+06	0.3186856E+06	- .5820766E-10	- .1826491E-15	929
795	UI	0.3188968E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	930
796	UI	0.9167773E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	931
797	UI	0.9168603E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	932
798	UI	0.9131658E+05	0.9109829E+05	- .1455192E-10	- .1597386E-15	933
799	UI	0.9116765E+05	0.9109829E+05	0.1455192E-10	0.1597386E-15	934
800	UI	0.9103785E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	935
801	UI	0.9092573E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	936
802	UI	0.9082978E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	937
803	UI	0.9074852E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	938
804	UI	0.9068045E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	939
805	UI	0.9062410E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	940
806	UI	0.9057781E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	941
807	UI	0.9054113E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	942
808	UI	0.9051202E+05	0.9109829E+05	- .1455192E-10	- .1597386E-15	943
809	UI	0.9048970E+05	0.9109829E+05	- .1455192E-10	- .1597386E-15	944
810	UI	0.9047330E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	945
811	UI	0.9046211E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	946
812	UI	0.9045560E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	947
813	UI	0.5430190E+06	0.5371948E+06	0.0000000E+00	0.0000000E+00	948
814	UI	0.5421511E+06	0.5371948E+06	0.0000000E+00	0.0000000E+00	949
815	UI	0.5414780E+06	0.5371948E+06	- .1164153E-09	- .2167097E-15	950
816	UI	0.5409983E+06	0.5371948E+06	0.0000000E+00	0.0000000E+00	951
817	UI	0.5407109E+06	0.5371948E+06	0.0000000E+00	0.0000000E+00	952
818	UI	0.5593304E+06	0.5567235E+06	0.0000000E+00	0.0000000E+00	953
819	UI	0.5582370E+06	0.5567235E+06	0.0000000E+00	0.0000000E+00	954
820	UI	0.5573864E+06	0.5567235E+06	- .1164153E-09	- .2091080E-15	955
821	UI	0.5567786E+06	0.5567235E+06	0.1164153E-09	0.2091080E-15	956
822	UI	0.5564139E+06	0.5567235E+06	0.0000000E+00	0.0000000E+00	957
823	UI	0.3106712E+06	0.3096075E+06	0.5820766E-10	0.1880047E-15	958
824	UI	0.3100151E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	959
825	UI	0.3094792E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	960
826	UI	0.3090626E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	961
827	UI	0.3087642E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	962
828	UI	0.3085828E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	963
829	UI	0.3085174E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	964
830	UI	0.3085666E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	965
831	UI	0.3087292E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	966
832	UI	0.3090041E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	967
833	UI	0.3093898E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	968
834	UI	0.2650661E+06	0.2655890E+06	0.0000000E+00	0.0000000E+00	969
835	UI	0.2646949E+06	0.2655890E+06	0.0000000E+00	0.0000000E+00	970
836	UI	0.2644060E+06	0.2655890E+06	0.0000000E+00	0.0000000E+00	971

837	UI	0.2641995E+06	0.2655890E+06	0.0000000E+00	0.0000000E+00	972
838	UI	0.2640756E+06	0.2655890E+06	0.0000000E+00	0.0000000E+00	973
839	UI	0.7107914E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	974
840	UI	0.7098034E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	975
841	UI	0.7089374E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	976
842	UI	0.7081869E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	977
843	UI	0.7075449E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	978
844	UI	0.7070042E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	979
845	UI	0.7065571E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	980
846	UI	0.7061960E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	981
847	UI	0.7059131E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	982
848	UI	0.7057007E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	983
849	UI	0.7055513E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	984
850	UI	0.7054576E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	985
851	UI	0.7054128E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	986
852	UI	0.7054103E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	987
853	UI	0.7054442E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	988
854	UI	0.7055090E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	989
855	UI	0.7055999E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	990
856	UI	0.7057125E+06	0.7102077E+06	- .1164153E-09	- .1639173E-15	991
857	UI	0.7058431E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	992
858	UI	0.7059882E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	993
859	UI	0.7061452E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	994
860	UI	0.7063116E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	995
861	UI	0.7064855E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	996
862	UI	0.7066653E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	997
863	UI	0.7068496E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	998
864	UI	0.7070373E+06	0.7102077E+06	0.1164153E-09	0.1639173E-15	999
865	UI	0.7072278E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1000
866	UI	0.7074202E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1001
867	UI	0.7076141E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1002
868	UI	0.7078091E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1003
869	UI	0.7080049E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1004
870	UI	0.7082012E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1005
871	UI	0.7083980E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1006
872	UI	0.7085950E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1007
873	UI	0.7087923E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1008
874	UI	0.7089897E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1009
875	UI	0.7091872E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1010
876	UI	0.7093847E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1011
877	UI	0.7095823E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1012
878	UI	0.7097799E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1013
879	UI	0.7099776E+06	0.7102077E+06	- .1164153E-09	- .1639173E-15	1014
880	UI	0.6116688E+06	0.6128813E+06	0.0000000E+00	0.0000000E+00	1015
881	UI	0.6108116E+06	0.6128813E+06	0.0000000E+00	0.0000000E+00	1016
882	UI	0.6101440E+06	0.6128813E+06	0.0000000E+00	0.0000000E+00	1017
883	UI	0.6096663E+06	0.6128813E+06	0.0000000E+00	0.0000000E+00	1018
884	UI	0.6093789E+06	0.6128813E+06	0.0000000E+00	0.0000000E+00	1019
885	UI	0.6092818E+06	0.6128813E+06	0.1164153E-09	0.1639173E-15	1020
886	UI	0.6093752E+06	0.6128813E+06	0.0000000E+00	0.0000000E+00	1021
887	UI	0.6094589E+06	0.6128813E+06	- .1164153E-09	- .1639173E-15	1022
888	UI	0.6101329E+06	0.6128813E+06	0.0000000E+00	0.0000000E+00	1023
889	UI	0.6107967E+06	0.6128813E+06	- .1164153E-09	- .1639173E-15	1024
890	UI	0.6116501E+06	0.6128813E+06	- .1164153E-09	- .1639173E-15	1025
891	UI	0.1409100E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1026
892	UI	0.1405821E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1027

893	UI	0.1403122E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1028
894	UI	0.1400960E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1029
895	UI	0.1399290E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1030
896	UI	0.1398062E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1031
897	UI	0.1397225E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1032
898	UI	0.1396726E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1033
899	UI	0.1396514E+06	0.1402931E+06	- .2910363E-10	- .2074502E-15	1034
900	UI	0.1396541E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1035
901	UI	0.1396763E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1036
902	UI	0.1397142E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1037
903	UI	0.1397642E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1038
904	UI	0.1398237E+06	0.1402931E+06	0.2910363E-10	0.2074502E-15	1039
905	UI	0.1398902E+06	0.1402931E+06	0.2910363E-10	0.2074502E-15	1040
906	UI	0.1399619E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1041
907	UI	0.1400374E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1042
908	UI	0.1401155E+06	0.1402931E+06	- .2910363E-10	- .2074502E-15	1043
909	UI	0.1401955E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1044
910	UI	0.1402767E+06	0.1402931E+06	- .2910363E-10	- .2074502E-15	1045
911	UI	0.1403588E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1046
912	UI	0.1404414E+06	0.1402931E+06	0.2910363E-10	0.2074502E-15	1047
913	UI	0.1405244E+06	0.1402931E+06	0.0000000E+00	0.0000000E+00	1048
914	UI	0.5572442E+05	0.5615792E+05	0.0000000E+00	0.0000000E+00	1049
915	UI	0.5562829E+05	0.5615792E+05	0.7275958E-11	0.1295624E-15	1050
916	UI	0.5555126E+05	0.5615792E+05	0.7275958E-11	0.1295624E-15	1051
917	UI	0.5549953E+05	0.5615792E+05	0.0000000E+00	0.0000000E+00	1052
918	UI	0.5546724E+05	0.5615792E+05	0.0000000E+00	0.0000000E+00	1053
919	UI	0.5018977E+06	0.5028879E+06	0.0000000E+00	0.0000000E+00	1054
920	UI	0.5011950E+06	0.5028879E+06	- .5820766E-10	- .1157468E-15	1055
921	UI	0.5006479E+06	0.5028879E+06	0.0000000E+00	0.0000000E+00	1056
922	UI	0.5002670E+06	0.5028879E+06	0.5820766E-10	0.1157468E-15	1057
923	UI	0.5000223E+06	0.5028879E+06	0.0000000E+00	0.0000000E+00	1058
924	UI	0.7107639E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1059
925	UI	0.7097795E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1060
926	UI	0.7089167E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1061
927	UI	0.7081692E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1062
928	UI	0.7075298E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1063
929	UI	0.7069914E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1064
930	UI	0.7065464E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1065
931	UI	0.7061871E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1066
932	UI	0.7059058E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1067
933	UI	0.7056947E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1068
934	UI	0.7055465E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1069
935	UI	0.7054537E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1070
936	UI	0.7054097E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1071
937	UI	0.7054078E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1072
938	UI	0.7054422E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1073
939	UI	0.7055075E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1074
940	UI	0.7055988E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1075
941	UI	0.7057116E+06	0.7102077E+06	- .1164153E-09	- .1639173E-15	1076
942	UI	0.7058424E+06	0.7102077E+06	0.1164153E-09	0.1639173E-15	1077
943	UI	0.7059877E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1078
944	UI	0.7061448E+06	0.7102077E+06	- .1164153E-09	- .1639173E-15	1079
945	UI	0.7063113E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1080
946	UI	0.7064853E+06	0.7102077E+06	- .1164153E-09	- .1639173E-15	1081
947	UI	0.7066651E+06	0.7102077E+06	- .1164153E-09	- .1639173E-15	1082
948	UI	0.7068495E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1083



949	UI	0.7070373E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1084
950	UI	0.7072277E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1085
951	UI	0.7074202E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1086
952	UI	0.7076141E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1087
953	UI	0.7078091E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1088
954	UI	0.7080049E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1089
955	UI	0.7082012E+06	0.7102077E+06	0.1164153E-09	0.1639173E-15	1090
956	UI	0.7083980E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1091
957	UI	0.7085950E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1092
958	UI	0.7087923E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1093
959	UI	0.7089897E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1094
960	UI	0.7091872E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1095
961	UI	0.7093847E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1096
962	UI	0.7095823E+06	0.7102077E+06	0.1164153E-09	0.1639173E-15	1097
963	UI	0.7097799E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1098
964	UI	0.7099776E+06	0.7102077E+06	0.0000000E+00	0.0000000E+00	1099
965	UI	0.2708470E+06	0.2713948E+06	0.0000000E+00	0.0000000E+00	1100
966	UI	0.2704688E+06	0.2713948E+06	0.0000000E+00	0.0000000E+00	1101
967	UI	0.2701744E+06	0.2713948E+06	0.5820766E-10	0.2144760E-15	1102
968	UI	0.2699640E+06	0.2713948E+06	0.0000000E+00	0.0000000E+00	1103
969	UI	0.2697577E+06	0.2713948E+06	0.5820766E-10	0.2144760E-15	1104
970	UI	0.3093805E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	1105
971	UI	0.3089965E+06	0.3096075E+06	0.5820766E-10	0.1880047E-15	1106
972	UI	0.3087231E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	1107
973	UI	0.3085617E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	1108
974	UI	0.3085134E+06	0.3096075E+06	- 5820766E-10	- 1880047E-15	1109
975	UI	0.3085794E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	1110
976	UI	0.3087608E+06	0.3096075E+06	- 5820766E-10	- 1880047E-15	1111
977	UI	0.3090586E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	1112
978	UI	0.3094739E+06	0.3096075E+06	- 5820766E-10	- 1880047E-15	1113
979	UI	0.3100073E+06	0.3096075E+06	- 5820766E-10	- 1880047E-15	1114
980	UI	0.3106599E+06	0.3096075E+06	0.0000000E+00	0.0000000E+00	1115
981	UI	0.5352677E+06	0.5363504E+06	0.0000000E+00	0.0000000E+00	1116
982	UI	0.5345203E+06	0.5363504E+06	0.0000000E+00	0.0000000E+00	1117
983	UI	0.5339385E+06	0.5363504E+06	0.0000000E+00	0.0000000E+00	1118
984	UI	0.5335227E+06	0.5363504E+06	0.0000000E+00	0.0000000E+00	1119
985	UI	0.5332731E+06	0.5363504E+06	0.0000000E+00	0.0000000E+00	1120
986	UI	0.6158696E+05	0.6206928E+05	0.0000000E+00	0.0000000E+00	1121
987	UI	0.6148095E+05	0.6206928E+05	0.0000000E+00	0.0000000E+00	1122
988	UI	0.6139822E+05	0.6206928E+05	0.0000000E+00	0.0000000E+00	1123
989	UI	0.6123898E+05	0.6206928E+05	0.0000000E+00	0.0000000E+00	1124
990	UI	0.6130337E+05	0.6206928E+05	0.7275958E-11	0.1172232E-15	1125
991	UI	0.1073152E+06	0.1068506E+06	0.0000000E+00	0.0000000E+00	1126
992	UI	0.1070665E+06	0.1068506E+06	0.0000000E+00	0.0000000E+00	1127
993	UI	0.1068617E+06	0.1068506E+06	0.1455192E-10	0.1361893E-15	1128
994	UI	0.1066977E+06	0.1068506E+06	0.0000000E+00	0.0000000E+00	1129
995	UI	0.1065711E+06	0.1068506E+06	0.0000000E+00	0.0000000E+00	1130
996	UI	0.1064781E+06	0.1068506E+06	- 1455192E-10	- 1361893E-15	1131
997	UI	0.1064147E+06	0.1068506E+06	0.0000000E+00	0.0000000E+00	1132
998	UI	0.1063770E+06	0.1068506E+06	0.0000000E+00	0.0000000E+00	1133
999	UI	0.1063611E+06	0.1068506E+06	0.0000000E+00	0.0000000E+00	1134
1000	UI	0.1063634E+06	0.1068506E+06	- 1455192E-10	- 1361893E-15	1135
1001	UI	0.1063805E+06	0.1068506E+06	0.1455192E-10	0.1361893E-15	1136
1002	UI	0.1064094E+06	0.1068506E+06	0.0000000E+00	0.0000000E+00	1137
1003	UI	0.1064476E+06	0.1068506E+06	0.0000000E+00	0.0000000E+00	1138
1004	UI	0.1064930E+06	0.1068506E+06	- 1455192E-10	- 1361893E-15	1139

1005	UI	0.1065437E+06	0.1068506E+06	0.0000000E+00	0.0000000E+00	1140
1006	UI	0.1065993E+06	0.1068506E+06	0.0000000E+00	0.0000000E+00	1141
1007	UI	0.1066558E+06	0.1068507E+06	0.1455192E-10	0.1361893E-15	1142
1008	UI	0.1067153E+06	0.1068506E+06	0.1455192E-10	0.1361893E-15	1143
1009	UI	0.1067762E+06	0.1068506E+06	0.1455192E-10	0.1361893E-15	1144
1010	UI	0.1068381E+06	0.1068506E+06	-0.1455192E-10	-0.1361893E-15	1145
1011	UI	0.1069006E+06	0.1068506E+06	0.0000000E+00	0.0000000E+00	1146
1012	UI	0.1069636E+06	0.1068506E+06	-0.1455192E-10	-0.1361893E-15	1147
1013	UI	0.1070268E+06	0.1068506E+06	0.0000000E+00	0.0000000E+00	1148
1014	UI	0.5593207E+06	0.5567235E+06	0.0000000E+00	0.0000000E+00	1149
1015	UI	0.5582347E+06	0.5567235E+06	0.0000000E+00	0.0000000E+00	1150
1016	UI	0.5573894E+06	0.5567235E+06	0.0000000E+00	0.0000000E+00	1151
1017	UI	0.5567851E+06	0.5567235E+06	-0.1164153E-09	-0.2091080E-15	1152
1018	UI	0.5564225E+06	0.5567235E+06	-0.1164153E-09	-0.2091080E-15	1153
1019	UI	0.5430099E+06	0.5371948E+06	0.0000000E+00	0.0000000E+00	1154
1020	UI	0.5421489E+06	0.5371948E+06	-0.1164153E-09	-0.2167097E-15	1155
1021	UI	0.5414807E+06	0.5371948E+06	0.0000000E+00	0.0000000E+00	1156
1022	UI	0.5410043E+06	0.5371948E+06	0.0000000E+00	0.0000000E+00	1157
1023	UI	0.5407287E+06	0.5371948E+06	-0.1164153E-09	-0.2167097E-15	1158
1024	UI	0.9147886E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	1159
1025	UI	0.9148669E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	1160
1026	UI	0.9131605E+05	0.9109829E+05	0.1455192E-10	0.1597386E-15	1161
1027	UI	0.9116769E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	1162
1028	UI	0.9103826E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	1163
1029	UI	0.9092636E+05	0.9109829E+05	-0.1455192E-10	-0.1597386E-15	1164
1030	UI	0.9083052E+05	0.9109829E+05	0.1455192E-10	0.1597386E-15	1165
1031	UI	0.9074930E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	1166
1032	UI	0.9068212E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	1167
1033	UI	0.9062482E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	1168
1034	UI	0.9057875E+05	0.9109829E+05	-0.1455192E-10	-0.1597386E-15	1169
1035	UI	0.9054172E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	1170
1036	UI	0.9051253E+05	0.9109829E+05	-0.1455192E-10	-0.1597386E-15	1171
1037	UI	0.9049016E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	1172
1038	UI	0.9047371E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	1173
1039	UI	0.9046248E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	1174
1040	UI	0.9045595E+05	0.9109829E+05	0.0000000E+00	0.0000000E+00	1175
1041	UI	0.3208943E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1176
1042	UI	0.3202458E+06	0.3166856E+06	0.5820766E-10	0.1826491E-15	1177
1043	UI	0.3196748E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1178
1044	UI	0.3191770E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1179
1045	UI	0.3187481E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1180
1046	UI	0.3183834E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1181
1047	UI	0.3180781E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1182
1048	UI	0.3178273E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1183
1049	UI	0.3176261E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1184
1050	UI	0.3174696E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1185
1051	UI	0.3173512E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1186
1052	UI	0.3172719E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1187
1053	UI	0.3172218E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1188
1054	UI	0.3171985E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1189
1055	UI	0.3171984E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1190
1056	UI	0.3172180E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1191
1057	UI	0.3172542E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1192
1058	UI	0.3173042E+06	0.3166856E+06	-0.5820766E-10	-0.1826491E-15	1193
1059	UI	0.3173555E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1194
1060	UI	0.3174362E+06	0.3166856E+06	0.0000000E+00	0.0000000E+00	1195

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1061	UI	0.3175145E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	1196
1062	UI	0.3175987E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	1197
1063	UI	0.3176878E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	1198
1064	UI	0.3177805E+06	0.3186856E+06	- .5820766E-10	- .1826491E-15	1199
1065	UI	0.3178762E+06	0.3186856E+06	0.5820766E-10	0.1826491E-15	1200
1066	UI	0.3179741E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	1201
1067	UI	0.3180737E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	1202
1068	UI	0.3181745E+06	0.3186856E+06	0.5820766E-10	0.1826491E-15	1203
1069	UI	0.3182763E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	1204
1070	UI	0.3183788E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	1205
1071	UI	0.3184818E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	1206
1072	UI	0.3185852E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	1207
1073	UI	0.3186889E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	1208
1074	UI	0.3187928E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	1209
1075	UI	0.3188968E+06	0.3186856E+06	0.0000000E+00	0.0000000E+00	1210
1076	UI	0.8896607E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1211
1077	UI	0.8878627E+05	0.8835372E+05	0.1455192E-10	0.1647007E-15	1212
1078	UI	0.8862795E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1213
1079	UI	0.8846995E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1214
1080	UI	0.8837104E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1215
1081	UI	0.8826992E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1216
1082	UI	0.8818527E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1217
1083	UI	0.8811574E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1218
1084	UI	0.8805996E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1219
1085	UI	0.8801658E+05	0.8835372E+05	0.1455192E-10	0.1647007E-15	1220
1086	UI	0.8798427E+05	0.8835372E+05	0.1455192E-10	0.1647007E-15	1221
1087	UI	0.8796178E+05	0.8835372E+05	- .1455192E-10	- .1647007E-15	1222
1088	UI	0.8794787E+05	0.8835372E+05	0.1455192E-10	0.1647007E-15	1223
1089	UI	0.8794143E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1224
1090	UI	0.8794140E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1225
1091	UI	0.8794683E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1226
1092	UI	0.8795686E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1227
1093	UI	0.8797071E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1228
1094	UI	0.8798773E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1229
1095	UI	0.8800733E+05	0.8835372E+05	0.1455192E-10	0.1647007E-15	1230
1096	UI	0.8802902E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1231
1097	UI	0.8805238E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1232
1098	UI	0.8807706E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1233
1099	UI	0.8810278E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1234
1100	UI	0.8812931E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1235
1101	UI	0.8815645E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1236
1102	UI	0.8818405E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1237
1103	UI	0.8821202E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1238
1104	UI	0.8824024E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1239
1105	UI	0.8826866E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1240
1106	UI	0.8829722E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1241
1107	UI	0.8832588E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1242
1108	UI	0.8835462E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1243
1109	UI	0.8838342E+05	0.8835372E+05	0.0000000E+00	0.0000000E+00	1244
1110	UI	0.8841225E+05	0.8835372E+05	0.1455192E-10	0.1647007E-15	1245
1111	UI	0.2157384E+06	0.2140544E+06	- .2910383E-10	- .1359647E-15	1246
1112	UI	0.2149619E+06	0.2140544E+06	0.2910383E-10	0.1359647E-15	1247
1113	UI	0.2143573E+06	0.2140544E+06	0.0000000E+00	0.0000000E+00	1248
1114	UI	0.2139250E+06	0.2140544E+06	0.0000000E+00	0.0000000E+00	1249
1115	UI	0.2136655E+06	0.2140544E+06	0.0000000E+00	0.0000000E+00	1250
1116	UI	0.2314821E+06	0.2300152E+06	0.0000000E+00	0.0000000E+00	1251

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1117	UI	0.2310560E+06	0.2300152E+06	0.2910383E-10	0.1265300E-15	1252
1118	UI	0.2307245E+06	0.2300152E+06	0.0000000E+00	0.0000000E+00	1253
1119	UI	0.2304877E+06	0.2300152E+06	0.2910383E-10	0.1265300E-15	1254
1120	UI	0.2303457E+06	0.2300152E+06	0.0000000E+00	0.0000000E+00	1255
1121	UI	0.2764954E+07	0.2587276E+07	0.0000000E+00	0.0000000E+00	1256
1122	UI	0.2766701E+07	0.2587276E+07	- .4656613E-09	- .1799813E-15	1257
1123	UI	0.2788676E+07	0.2587276E+07	0.0000000E+00	0.0000000E+00	1258
1124	UI	0.2790863E+07	0.2587276E+07	- .4656613E-09	- .1799813E-15	1259
1125	UI	0.2793248E+07	0.2587276E+07	0.0000000E+00	0.0000000E+00	1260
1126	UI	0.2795815E+07	0.2587276E+07	0.0000000E+00	0.0000000E+00	1261
1127	UI	0.2798548E+07	0.2587276E+07	0.0000000E+00	0.0000000E+00	1262
1128	UI	0.2801433E+07	0.2587276E+07	0.0000000E+00	0.0000000E+00	1263
1129	UI	0.2804453E+07	0.2587276E+07	0.0000000E+00	0.0000000E+00	1264
1130	UI	0.2807596E+07	0.2587276E+07	0.0000000E+00	0.0000000E+00	1265
1131	UI	0.2810846E+07	0.2587276E+07	- .4656613E-09	- .1799813E-15	1266
1132	UI	0.2814191E+07	0.2587276E+07	- .4656613E-09	- .1799813E-15	1267
1133	UI	0.2817618E+07	0.2587276E+07	0.0000000E+00	0.0000000E+00	1268
1134	UI	0.2821116E+07	0.2587276E+07	0.0000000E+00	0.0000000E+00	1269
1135	UI	0.2824674E+07	0.2587276E+07	0.0000000E+00	0.0000000E+00	1270
1136	UI	0.2828284E+07	0.2587276E+07	0.0000000E+00	0.0000000E+00	1271
1137	UI	0.2831937E+07	0.2587276E+07	0.4656613E-09	0.1799813E-15	1272
1138	UI	0.2835625E+07	0.2587276E+07	0.4656613E-09	0.1799813E-15	1273
1139	UI	0.2839343E+07	0.2587276E+07	0.0000000E+00	0.0000000E+00	1274
1140	UI	0.2843084E+07	0.2587276E+07	0.0000000E+00	0.0000000E+00	1275
1141	UI	0.2846845E+07	0.2587276E+07	- .4656613E-09	- .1799813E-15	1276
1142	UI	0.2850622E+07	0.2587276E+07	0.4656613E-09	0.1799813E-15	1277
1143	UI	0.2854410E+07	0.2587276E+07	0.0000000E+00	0.0000000E+00	1278
1144	UI	0.1530611E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1279
1145	UI	0.1531903E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1280
1146	UI	0.1533265E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1281
1147	UI	0.1534712E+07	0.1424004E+07	- .2328306E-09	- .1635042E-15	1282
1148	UI	0.1536236E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1283
1149	UI	0.1537834E+07	0.1424004E+07	0.2328306E-09	0.1635042E-15	1284
1150	UI	0.1539498E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1285
1151	UI	0.1541223E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1286
1152	UI	0.1543002E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1287
1153	UI	0.1544821E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1288
1154	UI	0.1546703E+07	0.1424004E+07	- .2328306E-09	- .1635042E-15	1289
1155	UI	0.1548613E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1290
1156	UI	0.1550557E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1291
1157	UI	0.1552529E+07	0.1424004E+07	0.2328306E-09	0.1635042E-15	1292
1158	UI	0.1554526E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1293
1159	UI	0.1556544E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1294
1160	UI	0.1558579E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1295
1161	UI	0.1560628E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1296
1162	UI	0.1562690E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1297
1163	UI	0.1564761E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1298
1164	UI	0.1566840E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1299
1165	UI	0.1568926E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1300
1166	UI	0.1571016E+07	0.1424004E+07	- .2328306E-09	- .1635042E-15	1301
1167	UI	0.7565766E+06	0.7446203E+06	0.1164153E-09	0.1563419E-15	1302
1168	UI	0.7561548E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1303
1169	UI	0.7558254E+06	0.7446203E+06	0.1164153E-09	0.1563419E-15	1304
1170	UI	0.7554181E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1305
1171	UI	0.7554181E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1306
1172	UI	0.7553283E+06	0.7446203E+06	0.1164153E-09	0.1563419E-15	1307

1173	UI	0.7553074E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1308
1174	UI	0.7553508E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1309
1175	UI	0.7554546E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1310
1176	UI	0.7556154E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1311
1177	UI	0.7558306E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1312
1178	UI	0.8996547E+06	0.8854373E+06	- .1164153E-09	- .1314778E-15	1313
1179	UI	0.8991532E+06	0.8854373E+06	0.0000000E+00	0.0000000E+00	1314
1180	UI	0.8987615E+06	0.8854373E+06	0.0000000E+00	0.0000000E+00	1315
1181	UI	0.8984719E+06	0.8854373E+06	0.0000000E+00	0.0000000E+00	1316
1182	UI	0.8982771E+06	0.8854373E+06	0.0000000E+00	0.0000000E+00	1317
1183	UI	0.8981703E+06	0.8854373E+06	0.1164153E-09	0.1314778E-15	1318
1184	UI	0.8981455E+06	0.8854373E+06	0.0000000E+00	0.0000000E+00	1319
1185	UI	0.8981971E+06	0.8854373E+06	0.0000000E+00	0.0000000E+00	1320
1186	UI	0.898206E+06	0.8854373E+06	0.0000000E+00	0.0000000E+00	1321
1187	UI	0.8985118E+06	0.8854373E+06	0.0000000E+00	0.0000000E+00	1322
1188	UI	0.8987677E+06	0.8854373E+06	0.0000000E+00	0.0000000E+00	1323
1189	UI	0.1530614E+07	0.1424004E+07	0.2328306E-09	0.1635042E-15	1324
1190	UI	0.1531889E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1325
1191	UI	0.1533253E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1326
1192	UI	0.1534701E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1327
1193	UI	0.1536228E+07	0.1424004E+07	- .2328306E-09	- .1635042E-15	1328
1194	UI	0.1537826E+07	0.1424004E+07	0.2328306E-09	0.1635042E-15	1329
1195	UI	0.1539492E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1330
1196	UI	0.1541238E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1331
1197	UI	0.1542998E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1332
1198	UI	0.1544827E+07	0.1424004E+07	0.2328306E-09	0.1635042E-15	1333
1199	UI	0.1546700E+07	0.1424004E+07	0.2328306E-09	0.1635042E-15	1334
1200	UI	0.1548611E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1335
1201	UI	0.1550555E+07	0.1424004E+07	0.2328306E-09	0.1635042E-15	1336
1202	UI	0.1552528E+07	0.1424004E+07	0.2328306E-09	0.1635042E-15	1337
1203	UI	0.1554525E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1338
1204	UI	0.1556543E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1339
1205	UI	0.1558578E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1340
1206	UI	0.1560628E+07	0.1424004E+07	0.2328306E-09	0.1635042E-15	1341
1207	UI	0.1562690E+07	0.1424004E+07	0.2328306E-09	0.1635042E-15	1342
1208	UI	0.1564761E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1343
1209	UI	0.1566840E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1344
1210	UI	0.1568926E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1345
1211	UI	0.1571016E+07	0.1424004E+07	0.0000000E+00	0.0000000E+00	1346
1212	UI	0.7565497E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1347
1213	UI	0.7561314E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1348
1214	UI	0.7558052E+06	0.7446203E+06	- .1164153E-09	- .1563419E-15	1349
1215	UI	0.7555645E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1350
1216	UI	0.7554032E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1351
1217	UI	0.7553155E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1352
1218	UI	0.7552564E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1353
1219	UI	0.7553413E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1354
1220	UI	0.7554462E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1355
1221	UI	0.7556079E+06	0.7446203E+06	0.0000000E+00	0.0000000E+00	1356
1222	UI	0.7558236E+06	0.7446203E+06	- .1164153E-09	- .1563419E-15	1357
1223	UI	0.8903735E+06	0.8861763E+06	0.0000000E+00	0.0000000E+00	1358
1224	UI	0.8998757E+06	0.8861763E+06	0.0000000E+00	0.0000000E+00	1359
1225	UI	0.8994875E+06	0.8861763E+06	0.0000000E+00	0.0000000E+00	1360
1226	UI	0.8992010E+06	0.8861763E+06	0.0000000E+00	0.0000000E+00	1361
1227	UI	0.8990090E+06	0.8861763E+06	0.0000000E+00	0.0000000E+00	1362
1228	UI	0.8989047E+06	0.8861763E+06	0.1164153E-09	0.1313681E-15	1363

1229	UI	0.8988819E+06	0.8861763E+06	0.0000000E+00	0.0000000E+00	1364
1230	UI	0.8989354E+06	0.8861763E+06	0.0000000E+00	0.0000000E+00	1365
1231	UI	0.8990602E+06	0.8861763E+06	0.0000000E+00	0.0000000E+00	1366
1232	UI	0.8992526E+06	0.8861763E+06	0.0000000E+00	0.0000000E+00	1367
1233	UI	0.8995094E+06	0.8861763E+06	0.0000000E+00	0.0000000E+00	1368
1234	UI	0.2672652E+07	0.2482771E+07	0.4656613E-09	0.1875571E-15	1369
1235	UI	0.2674135E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1370
1236	UI	0.2676035E+07	0.2482771E+07	-4.656613E-09	-1.875571E-15	1371
1237	UI	0.2678138E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1372
1238	UI	0.2680429E+07	0.2482771E+07	-4.656613E-09	-1.875571E-15	1373
1239	UI	0.2682893E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1374
1240	UI	0.2685516E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1375
1241	UI	0.2688284E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1376
1242	UI	0.2691183E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1377
1243	UI	0.2694198E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1378
1244	UI	0.2697316E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1379
1245	UI	0.2700525E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1380
1246	UI	0.2703813E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1381
1247	UI	0.2707169E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1382
1248	UI	0.2710583E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1383
1249	UI	0.2714047E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1384
1250	UI	0.2717552E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1385
1251	UI	0.2721091E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1386
1252	UI	0.2724658E+07	0.2482771E+07	0.4656613E-09	0.1875571E-15	1387
1253	UI	0.2728288E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1388
1254	UI	0.2731857E+07	0.2482771E+07	0.4656613E-09	0.1875571E-15	1389
1255	UI	0.2735481E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1390
1256	UI	0.2739116E+07	0.2482771E+07	0.0000000E+00	0.0000000E+00	1391

1 cases completed. Elapsed time: 0:13:28

Records in plot output file: 189

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