ENCLOSURE 1
ATTACHMENT 18

NEXTERA ENERGY POINT BEACH, LLC
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

LICENSE AMENDMENT REQUEST 261
EXTENDED POWER UPRATE
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

2008-12355, REVISION 0, MASS AND ENERGY CALCULATION FOR HIGH ENERGY LINE BREAK IN 3" STEAM LINE WITHIN CCWHX ROOM

201 pages follow

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1.0 PURPOSE

The purpose of this calculation is to determine the Mass and Energy (M&E) release rates for High Energy Line Breaks (HELBs) of a 3" Steam Line within the Component Cooling Water Heat Exchanger (CCWHX) Room. The resulting calculated M&E release rates and flow durations will be used as input into other calculations for environmental transient conditions.

2.0 DESIGN INPUT

2.1 The P&IDs and physical arrangement of the Auxiliary Feedwater and Radwaste Evaporator steam supply piping of interest are given in the drawings in Reference 8.5. Piping take-offs were determined using these drawings.

2.2 The steam generator operating temperature is 547 °F at zero load, per the Fuel Upgrade / Power Uprate Safety Report (Reference 8.10, portions included in Attachment A). The Extended Power Uprate (EPU) maximum operating pressure is 813 psia during normal operating conditions, per FPL Expected Steam Generator Pressure (Reference 8.15-b, portions included in Attachment C).

2.3 The absolute roughness for commercial steel pipe is 0.00015 [ft], page A-23 of Crane (Reference 8.4).

2.4 From page A-26 of Crane (Reference 8.4), the friction factor for fully turbulent flow in clean commercial steel pipe is 0.018 for 3" pipe (Auxiliary Feedwater and Radwaste Evaporator piping). This factor is applied to high velocity steam flow (turbulent) created from de-mineralized water (clean).

2.5 Main steam quality is between 99.75% and 100%. During normal operation, the maximum moisture content is 0.25% per the Fuel Upgrade/Power Uprate Safety Report (Reference 8.10). In the event of a HELB, Reference 8.18 identifies that there is sufficient makeup capability for the Condensate and Feedwater system to prevent the steam generator tubes from being exposed and the blowdown steam from becoming superheated prior to the break being isolated. Reference 8.18 identifies that the steam generator tube bundle will remain covered for at least 30 minutes after a steam line break with a flow rate of 40 lb_m/sec. Hence, the blowdown steam will not be superheated.

The break flow for 3 inch break in the CCWHX room is determined in this calculation to be less than 40 lb_m/sec by using a model that accounts for line losses from the 30 inch line to the break location.

2.6 Per Reference 8.6, all piping considered by this calculation is of the following schedules:

Pipe Class	Pipe Size	Schedule	Reference
EB-8 (AFW steam piping)	3"	Schedule 40	DG-M03 pg. 11 (Reference 8.6-a)
SA-601 (Aux steam to radwaste evaporator)	3"	Schedule 40	DG-M04 pg. 26 (Reference 8.6-b)

2.7 Water and steam properties were determined using STMFUNC (Reference 8.12), which is based on data from the ASME Steam Tables (Reference 8.11).

2.8 The sonic velocity (c_0) of Saturated Steam between 800 and 1100 psia is 1450 ft/sec as scaled from Figure B-10 in Appendix B of ANSI 58.2 (Reference 8.2).

2.9 The Seat Area of the Radwaste Steam Supply (RWSS) control valve, RS-SA-1, is 2.06 in^2 (0.0143 ft^2) per Point Beach Modification Request and Table 1 of the Valtek Catalogue (References 8.16 & 8.17, Attachment D & E). This is based on a 3" 600# Valtek Mark One control valve with unbalanced plug, equal percentage trim, and flow over seat, with a 1.62 trim size.

3.0 ASSUMPTIONS

3.1 It is assumed that break isolation is completed within 30 minutes.
Basis: This is sufficient time for an operator to locate the break and manually close the appropriate isolation valves in the façade.

4.0 METHODOLOGY

In this calculation, mass and energy release rates are calculated for steam lines which branch off the main steam piping.

4.1 AUXILIARY BUILDING STEAM LINE BREAKS

A postulated HELB (for the purpose of this calculation), is considered to be a circumferential guillotine pipe rupture with the two ends completely offset. Blowdown proceeds from both ends of the broken pipe following the line break. The blowdown from the end connected to the Main Steam Line is termed "forward" blowdown, and the discharge from the other end is termed "reverse" blowdown. The designations "forward" and "reverse" have been applied solely for ease in describing the flow. Forward indicates the flow through the pipe to the break location is in the same direction as in the intact pipe during normal operation. Reverse indicates the fluid flow through the pipe to the break location is in the opposite direction as the intact pipe in normal operation.

Both forward and reverse blowdowns are comprised of initial and steady state periods. The initial blowdown releases the fluid in the pipe, thereby decompressing it. This initial blowdown lasts for a short duration and is immediately followed by a steady state blowdown. Forward and reverse blowdowns are calculated independently of each other. For the development of the event timeline, all pipe ruptures are treated as immediately opening.

Figure 1 below shows the evaluated system line up. The Radwaste Steam Supply system has only one steam generator from one unit supplying flow at any given time. Either RS-SA-9 or RS-SA-10, but not both, may supply the RWSS, thus the system is connected to only one unit, based on Section 3.1 of OI-18B (Reference 8.9). Either MS-251 or MS-252 but not both may supply the RWSS; therefore only one steam generator is connected to the system, based on Section 3.1 of OI-18A (References 8.7).

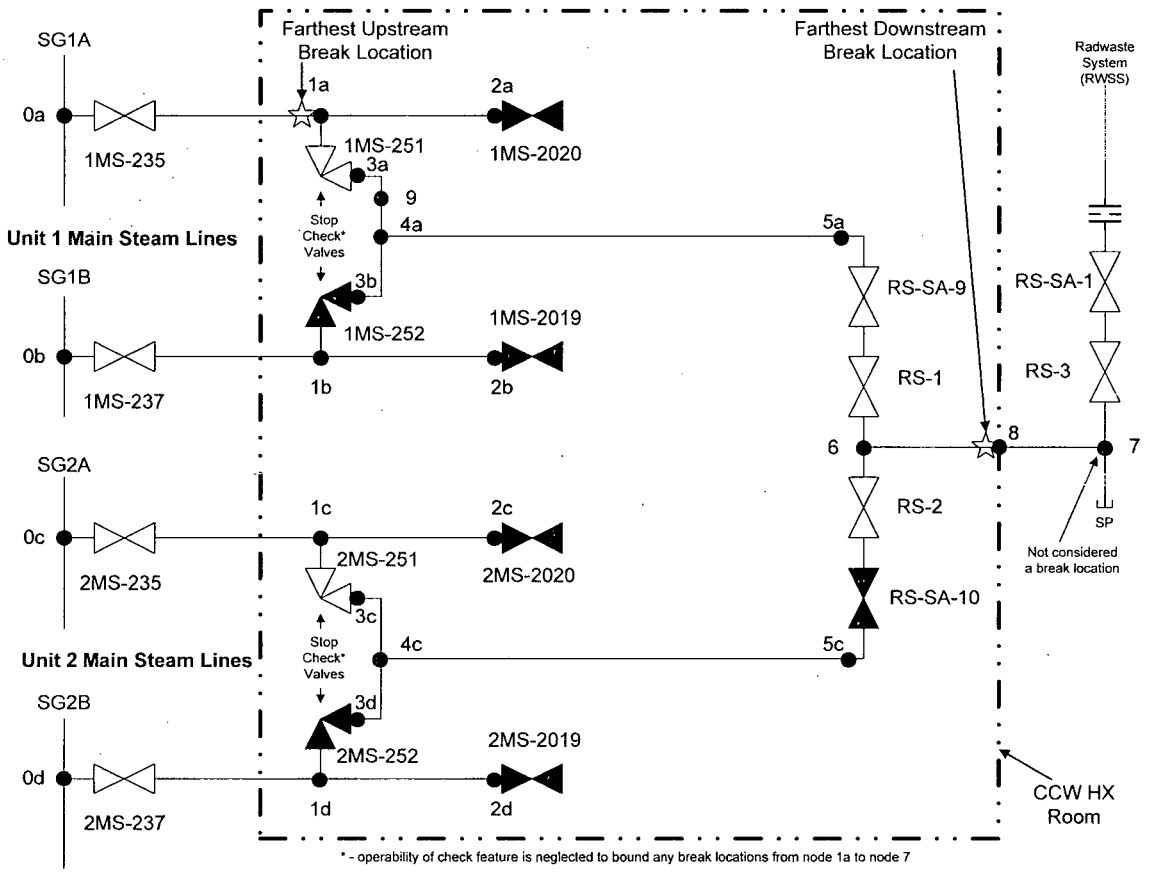
The 30" Main Steam line has a branch connection to the 3" line at node 0a. This 3" line goes through valve 1MS-235 continues to the tee at node 1a before terminating at the connection to 1MS-2020, node 2a. The node 1a tee branches and a 3" line connects to the other steam generator in the unit at node 1b. The node 1a to 1b line includes two stop check valves, 1MS-251 and 1MS-252, with nodes 3a and 3b being the respective valve's downstream connection points with a tee in the middle at node 4a. The tee at node 4a connects to a 3" pipe leading to the RWSS, along the way passing node 5a, valve RS-SA-9, valve RS-1, and running through tees at nodes 6 and 7 before terminating at the capped end denoted 'SP'. The tee at node 6 connects the described Unit 1 portion of the system with the similar Unit 2 system. The tee at node 7 leads to the RWSS system, starting as a 3" pipe at node 7 which continues through valves RS-3 and RS-SA-1 before going through a 6 x 3 reducer expanding to 6" pipe. This 6" pipe includes a restrictor plate and continues on to the RWSS system. The combination of control valve RS-SA-1 and the restrictor plate are used to reduce the Main Steam pressure to the lower RWSS system pressure.

Node 8 denotes the point where the 3" pipe exits the CCWHX Room. Node 9 is the midpoint of the initial inventory volume; the point half-way between the energy source (node 0a) and the downstream limiting seat area of valve RS-SA-1.

The interest of this calculation is only concerned with breaks within the CCWHX Room, which includes nodes 1a, 2a, 3a, 4a, 5a, 6, 8 and 9.

Figure 1

Nodal Diagram For Point Beach High Energy Line Breaks



The following sections describe the steps used to determine the mass and energy release for this HELB.

4.1.1 Break Location

The piping system was divided into different nodes to facilitate this analysis. The ends of each segment are denoted on the nodal diagram, presented as Figure 1 above. The interest of this calculation is mass and energy release into the CCWHX Room.

4.1.2 Forward Blowdown

Forward blowdown is initiated instantaneously and continues until the line from the steam source is isolated. The flowrate is determined as two time periods: an initial depressurization period followed by a steady state flow supplied by the main steam line. The Forward Blowdown periods are further described below.

4.1.2.1 Initial Forward Blowdown – Mass & Energy Flowrates

Immediately following the break, the inventory of fluid between the break and the first upstream limiting area or energy source is considered to be available for blowdown. This mass and energy release is based on the initial line conditions; pressure and enthalpy from known data. In this first period, frictional losses are conservatively neglected since not all of the mass within the pipe must traverse the entire distance, and therefore incur the total calculated piping loss. The critical flow is calculated using the Moody Critical flow model per Sections 3.3.2 & 3.3.3.5 of ANSI 56.10 (Reference 8.1).

$$\dot{m} = G * A * C \qquad \text{Equation 1}$$

where:

$\dot{m}$	=	mass flow rate	[lbm/sec]
C	=	discharge coefficient	[unitless]
A	=	break area	[ft^2]
G	=	Moody critical mass flux	[lbm/(sec*ft^2)]

The energy flowrate is calculated as follows:

$$\dot{E} = \dot{m} * h \qquad \text{Equation 2}$$

where:

$\dot{E}$	=	energy flowrate	[BTU/sec]
$\dot{m}$	=	mass flow rate	[lbm/sec]
h	=	fluid enthalpy	[BTU/lbm]

4.1.2.2 Initial Forward Blowdown – Interval End Time

The duration for blowdown of the pipe upstream of the break is determined by calculating the time required for the wave (at sonic velocity) to travel from the break location back to the nearest upstream limiting area or energy source and then return back to the break. Per Appendix E & Equation E-9 of ANSI 58.2 (Reference 8.2), this time is calculated by taking twice the length from the break back to the upstream limiting area or energy source and dividing by the sonic velocity of the fluid.

$$t = \frac{2 * l}{c} \qquad \text{Equation 3}$$

where:

l	=	inventory length	[ft]
c	=	sonic velocity	[ft/sec]

4.1.2.3 Steady State Forward Blowdown – Mass & Energy Flowrates

When the forward blowdown reaches a steady-state, the flow rate and pressure drop in the line are high. During this period the line losses downstream of the steam source control the flowrate. The pressure drop through the lines is accounted for during this period.

The steady-state blowdown is calculated using the RELAP software (Reference 8.13).

The RELAP model considers piping from the 30" Main Steam Line (node 0a) to the break location in the 3" line (node 1a). The RELAP Model employs the hydraulic resistances of the piping and fittings components.

The energy flowrate is calculated using Equation 2.

4.1.2.4 Steady Sate Forward Blowdown – Interval End Time
Steady state forward blowdown continues from the end of the initial forward blowdown interval until the HELB is isolated.

4.1.3 Reverse Blowdown
Reverse blowdown begins immediately following the break and, like forward blowdown, is comprised of two time periods: an initial depressurization period followed by a steady state reverse blowdown releasing energy stored in the Radwaste Steam Supply (RWSS) system. These Reverse Blowdown periods are further described below.

The stop check valve, 1MS-251, is not considered to prevent reverse blowdown for breaks upstream of node 3a.

4.1.3.1 Initial Reverse Blowdown – Mass & Energy Flowrates
The initial reverse blowdown mass and energy flowrates are calculated in the same manner as for the initial forward blowdown using Equations 1 and 2 described in Section 4.1.2.1.

4.1.3.2 Initial Reverse Blowdown – Interval End Time
The initial reverse blowdown interval end time is calculated in the same manner as for the initial forward blowdown using Equation 3 described in Section 4.1.2.2 with the length being measured from the break to the downstream limiting area.

4.1.3.3 Steady State Reverse Blowdown – Mass & Energy Flowrates
Following the initial reverse blowdown, steady state reverse blowdown releases mass and energy contained in the RWSS system. The flowrates for this release are calculated in the same manner as the initial reverse blowdown flowrates (Section 4.1.3.1).

4.1.3.4 Steady State Reverse Blowdown – Interval End Time
The steady state reverse blowdown is considered to continue from the end of the initial reverse blowdown interval until the HELB is isolated.

4.1.4 Hydraulic Resistance of Pipe and Fittings
The loss coefficients for both the piping and the fittings were calculated for use in determining the steady state break flow rate. The loss coefficients for the various piping systems are included in the RELAP model and are presented Appendix 3.

4.1.4.1 Tee Branch Loss
The hydraulic resistance of the fluid entering the 3" branch from the 30" Main Steam line is calculated using equations from Diagram 7-18 on page 451 of the Handbook of Hydraulic Resistance by Idelchick, Reference 8.14. A tee has two resistances associated with it. The first is for the straight passage in which the flow path has no turn. The second resistance is for the side branch that includes a turn in the flow path. The resistance of a tee also depends upon whether the flow is converging or diverging at the

tee. In our case the tee is diverging and the common flow branch is the inlet branch. For this case the following equation applies for a 90° tee.

Diverging Tee, Side Branch

$$K = 1 + \left(\frac{Q_s F_c}{Q_c F_s} \right)^2$$

where:
- K = the hydraulic resistance coefficient for that passage of the tee
- Q_c = flow rate in the common flow branch of the tee
- Q_s = flow rate in the side branch of the tee
- F_c = area of the common flow branch of the tee
- F_s = area of the side branch of the tee

In RELAP junctions were used to represent the tees. Consequently, an additional manipulation must be made to the hydraulic resistance coefficient as the coefficient calculated in the equation above is based on the area and flow rate of the common flow branch. This manipulation is done using an equation found on page 451 of Reference 8.14.

Side Branch adjustment

$$K_s = \frac{K}{\left(\frac{Q_s F_c}{Q_c F_s} \right)^2}$$

Even though RELAP is a transient analysis program, and the flow rate ratios in the above equation change with time, only time independent hydraulic resistance coefficients are allowed in RELAP junction components. It is therefore necessary to use steady state flow rate ratios in the calculation of these coefficients. For the purposes of this calculation, a minimum K_s indicates a higher flowrate and is more conservative.

Noting 'a' must be positive

$$a = \left(\frac{Q_s F_c}{Q_c F_s} \right)^2$$

The above equations simplify to

$$K_s = \frac{1 + a}{a}$$

Therefore, $K_s > 1$ for all cases. A value of $K_s = 1$ is conservatively used.

4.1.4.2 Straight Pipe

The hydraulic resistance of a straight length of pipe is due primarily to the friction between the fluid and the pipe wall. RELAP accounts for this resistance with an input for the surface roughness of the pipe wall. For clean commercial steel pipe, the absolute roughness is 0.00015 [ft] (Section 2.3). This roughness has been applied to pipe component volumes in the RELAP model.

4.1.4.3 Elbows

Unless otherwise specified in Section 8.5 reference drawings, elbows in the system are treated as 90° long radius elbows with an r/d of 1.5. There are no short radius elbows in the piping considered. On page 357 of Idelchik's Handbook of Hydraulic Resistance,

Reference 8.14, the hydraulic resistance of this type of elbow is separated into two components: a frictional component that is associated with the length of the pipe through the bend, and a local component that is associated with the angle and radius of the bend. The frictional component on the bend resistance will be accounted for in RELAP using the same pipe wall surface roughness input described in 4.1.4.2 above. The local component of the resistance is calculated using the following correlation.

$K_{loc}=A_1B_1C_1$

where:

A_1: if $\delta \leq 70°$, $A_1 = 0.9*\sin(\delta)$
if $\delta = 90°$, $A_1 = 1.0$
if $\delta \geq 100°$, $A_1 = 0.7 + 0.35 * \delta/90$

B_1: if $r/d > 1.0$, $B_1 = 0.21 * (r/d)^{-0.5}$
if $0.5 \geq r/d \geq 1.0$, $B_1 = 0.21 * (r/d)^{-2.5}$

$C_1 = 1.0$ for circular cross sections

δ = the angle of the bend in degrees

r = the radius of the centerline of the bend

d = the inner diameter of the pipe

The local component of the bend hydraulic resistances are applied to the internal junctions of the RELAP pipe components and the single junction components that correspond to the positions of the elbows

4.1.4.4 Valves

The loss coefficients for the system valves were based on gate valves from page A-27 of Crane (Reference 8.4). Gate valve treatment results in the lowest K value, which is conservative for the purposes of this calculation. The loss coefficient for system valves is calculated as follows:

Gate Valve: $K_D = 8 * f_T$

4.2 COMPUTER & SOFTWARE DOCUMENTATION

4.2.1 Microsoft Office Excel 2003 SP2. For Revision 0 all computer runs are made on Sargent and Lundy L.L.C. PC No. ZL4705. Verification of the Excel spreadsheets is implicit in the detailed review of the analysis.

4.2.2 ASME 1967 Steam Table Add-In for Excel, STMFUNC (Reference 8.12)

4.2.3 RELAP Analysis Software (Reference 8.13). A thermal-hydraulic model was developed using the RELAP5/MOD 3.3 code, Sargent & Lundy program number 03.7.459-3.31 (Reference 8.13). The controlled files for RELAP5/MOD3.3 are located on the Sargent & Lundy LAN at \\SNLVS5\SYS3\OPS$\REL459331\. All computer runs are made on Sargent & Lundy personal computer #ZL4705.

4.2.4 Critical Flow Function Add-In for Excel, CRF (Reference 8.3). Critical flowrates in CRF are based on the critical flow tables in RELAP4/Mod5.

5.0 ACCEPTANCE CRITERIA

5.1 There are no acceptance criteria for the generation of mass and energy releases in this calculation.

6.0 CALCULATIONS

The calculation of mass and energy release rates for two scenarios are considered. The first scenario is at Hot Shutdown conditions and the second is at the Extended Power Uprate (EPU) conditions. The fluid properties for these two conditions are the only notable difference for the purposes of this calculation. Unless otherwise noted, the same input applies to both the Hot Shutdown and the EPU scenarios. Appendix 1 contains the calculation spreadsheet for Hot Shutdown conditions; Appendix 2 contains the calculation spreadsheet for EPU conditions.

6.1 Break Location

This calculation considers pipe breaks from node 1a downstream within the CCWHX Room. This includes nodes 1a, 2a, 3a, 4a, 5a, 6, 8 and 9.

6.2 Forward Blowdown

6.2.1 Initial Forward Blowdown – Mass & Energy Flowrates

The mass flowrate is calculated per Equation 1 from Section 4.1.2.1.

The Moody critical mass flux (G) is calculated using the Critical Flow Function (CRF) (Reference 8.3). The critical mass flux is a function of pressure and enthalpy. The pressure and enthalpy used are steam generator conditions. Steam generator pressure neglects minor line losses resulting in a higher calculated mass flow rate. The flow of steam through insulated pipe from the steam generator to the break is isenthalpic. For the determination of G, the following steam conditions are considered:

Table 1: Steam Generator Conditions

	Pressure (P)	Moisture Content	Enthalpy (h)
	[psia]	[%]	[BTU/lbm]
Hot Shutdown	1020.1	0.00	1192.2
Hot Shutdown	1020.1	0.25	1190.6
EPU	813.0	0.00	1199.0
EPU	813.0	0.25	1197.3

Note that Hot Shutdown Pressure is the saturation pressure based on steam generator temperature of 547 °F (Design Input 2.2).

G is proportional to pressure and inversely proportional to enthalpy. To bound the mass flowrate, the highest pressure and lowest enthalpy are used for each reactor condition:

Table 2: Steam Generator Conditions for Calculation of Mass Flowrates

	Pressure (P)	Moisture Content	Enthalpy (h)
	[psia]	[%]	[BTU/lbm]
Hot Shutdown	1020.1	0.25	1190.6
EPU	813.0	0.25	1197.3

The energy flowrate is calculated using Equation 2 of Section 4.1.2.3. To maximize the

energy flowrate, the highest enthalpy at each reactor condition is used instead of the enthalpy used in the critical mass flow calculation.

Because friction is not considered this mass and energy release rate is applicable for breaks anywhere between node 0a and valve RS-SA-1.

6.2.2 Initial Forward Blowdown – Interval End Time

The duration for blowdown of this period is determined by Equation 3 from Section 4.1.2.2. The length, l, is measured from the 30" main steam line (energy source at node 0a) to the break location in accordance with Section 4.1.2.2. Piping drawings (References 8.5-c through k) were reviewed and no significant differences were found between Unit 1 and Unit 2. The inventory length is calculated from Unit 1 piping.

The interval end time for each break location is as follows:

Table 3: Initial Forward Blowdown Interval End Times

Initial Forward Blowdown		
Location	Inventory Length	Interval End Time
	l [ft]	t [sec]
1a	179.25	0.247
2a*	370.87	0.512
3a	184.04	0.254
9	185.43	0.256
4a	202.57	0.279
5a	258.68	0.357
6	274.14	0.378
8	356.35	0.492

*Node 2a has no downstream inventory. Upstream inventory is conservatively treated as the entire line length.

6.2.3 Steady State Forward Blowdown – Mass & Energy Flowrates

As friction is considered by the RELAP model, the farthest upstream break location results in a mass flow rate that is bounding for all downstream locations. The RELAP model reflects piping from node 0a to node 1a. Piping drawings (References 8.5-c through k) were reviewed and no significant differences were found between Unit 1 and Unit 2. The RELAP model is based on Unit 1 piping.

The RELAP model uses the Henry-Fauske critical flow model. The critical flow is proportional to pressure and inversely proportional to enthalpy. The initial conditions input into RELAP are the same conditions used in calculating the initial forward blowdown mass flowrate; the values are shown in Table 2 above.

The energy flowrate is calculated using Equation 2 of Section 4.1.2.3. The highest enthalpy at each reactor condition was used instead of the enthalpy used in the critical flow calculation (see Section 6.2.1).

Because friction is considered this mass and energy release rate is applicable for breaks from node 1a downstream to valve RS-SA-1.

6.2.4 Steady Sate Forward Blowdown – Interval End Time

Steady state forward blowdown continues from the end of the initial forward blowdown interval until and the HELB is isolated. The interval end time is therefore 30 minutes after the HELB per Assumption 3.1.

6.3 Reverse Blowdown

Reverse blowdown begins immediately following the break and, like forward blowdown, is comprised of two time periods: an initial depressurization period followed by a steady state reverse blowdown releasing energy stored in the Radwaste Steam Supply (RWSS) system. These Reverse Blowdown periods are further described below.

6.3.1 Initial Reverse Blowdown – Mass & Energy Flowrates

Conditions for the initial reverse blowdown are the same as the conditions for the initial forward blowdown. Therefore, the initial reverse blowdown mass and energy flowrates are the same as for the initial forward blowdown described in Section 6.2.1.

Because friction is not considered this initial reverse mass and energy release rate is applicable for breaks anywhere between node 0a and valve RS-SA-1.

6.3.2 Initial Reverse Blowdown – Interval End Time

The duration for blowdown of this period is determined by Equation 3 from Section 4.1.2.2. The length, l, is measured from the break location to the seat area of valve RS-SA-1 (limiting area) in accordance with Section 4.1.2.2. Piping drawings (References 8.5-c through k) were reviewed and no significant differences were found between Unit 1 and Unit 2. The inventory length is calculated from Unit 1 piping.

The interval end time for each break location is as follows:

Table 4: Initial Reverse Blowdown Interval End Times

Initial Reverse Blowdown		
Location	Inventory Length	Interval End Time
	l [ft]	t [sec]
1a	191.62	0.264
2a*	0.00	0.000
3a	186.82	0.258
9	185.43	0.256
4a	168.30	0.232
5a	112.18	0.155
6	96.73	0.133
8	14.52	0.020

*Node 2a has no downstream inventory.

6.3.3 Steady State Reverse Blowdown – Mass & Energy Flowrates

The steady state reverse blowdown mass flowrate is calculated in the same way as the initial reverse blowdown with the exception of the pressure used. The pressure is the RWSS system maximum pressure based on the Relief Valve set-points of PBM-227, Reference 8.5-k. The enthalpies used are at steam generator conditions per the table below. The flow of steam through insulated pipe from the steam generator to the break is isenthalpic. For the determination of G, the following steam conditions are considered:

Table 5: Steady State Reverse Blowdown Conditions

	Pressure (P)	Enthalpy (h)
	[psia]	[BTU/lbm]
Hot Shutdown	117.7	1192.2
Hot Shutdown	117.7	1190.6
EPU	117.7	1199.0
EPU	117.7	1197.3

Note that Enthalpies come from Table 1.

G is proportional to pressure and inversely proportional to enthalpy. To bound the Mass Flowrate, the following steam conditions are used:

Table 6: Steady State Reverse Blowdown Conditions for Calculation of Mass Flowrates

	Pressure (P)	Enthalpy (h)
	[psia]	[BTU/lbm]
Hot Shutdown	117.7	1190.6
EPU	117.7	1197.3

The energy flowrate is calculated using Equation 2 of Section 4.1.2.3. The highest enthalpy at each reactor condition was used instead of the enthalpy used in the critical flow calculation (see Section 6.2.1).

Because friction is not considered this steady state reverse mass and energy release rate is applicable for breaks anywhere between node 0a and valve RS-SA-1.

6.3.4 Steady State Reverse Blowdown – Interval End Time

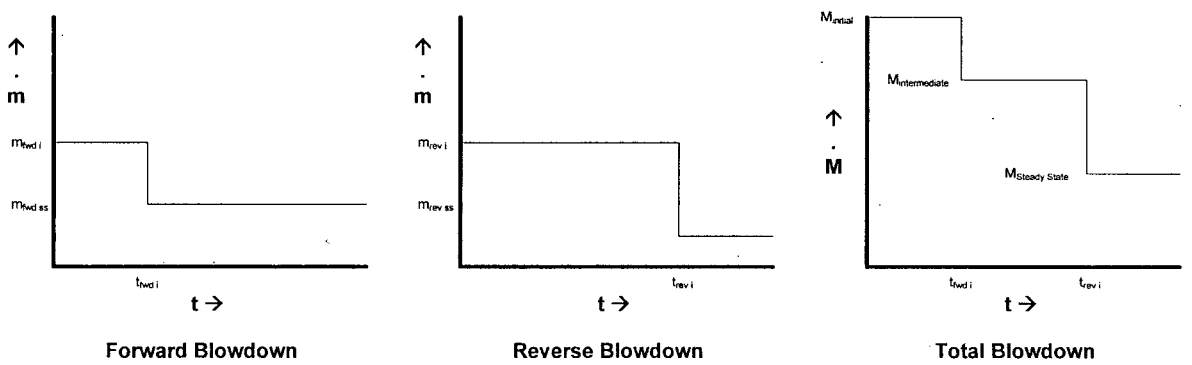
Steady state reverse blowdown continues from the end of the initial reverse blowdown interval until and the HELB is isolated, the same isolation time as the steady state forward blowdown. The available inventory of the RWSS System is not considered, treating it as a constant source maximizes mass and energy release. The interval end time is therefore 30 minutes after the HELB per Assumption 3.1.

6.4 Bounding Break Profile

For each blowdown period, the mass and energy release (M&E) are treated as constant. The actual blowdown flow from a break will vary with time before settling on the steady state flowrate. The maximum flowrate during this time is the initial blowdown flowrate. Treating the initial blowdown period as a constant flowrate at the maximum value conservatively over estimates the M&E release. Hence, the forward and reverse M&E profile (with respect to time) can each be represented by a descending "staircase" function as shown in Figure 2. It is descending because the steady state M&E is less than the initial M&E. At each break location, the M&E profile can be constructed using the M&E flowrates and the interval end times. Note that Figure 2 below shows the mass flowrate with respect to time. The energy flowrate is directly proportional to the mass flowrate, related by the enthalpy of saturated steam in the Steam Generator per Equation 2 from Section 4.1.2.1.

For each break location, the total M&E is the sum of the corresponding forward and reverse M&E. The resulting total M&E is shown in Figure 2. In this figure, the first step in the "staircase" represents the time period when both sides of the break are in the initial blowdown period where M&E are highest. The second step represents the time period where one side of the break has completed the initial blowdown while the other side has not. The third step represents the time period when both sides are in the steady state period where M&E are lowest.

Figure 2: Graphical Representation of Forward, Reverse & Total Blowdown



The sum of the initial forward and initial reverse interval end times is the same for all break locations because the total line length, and hence the sum of the initial interval end times, is the same. For a break at the midpoint of the line (node 9), the interval end times for the initial forward and reverse blowdown are the same, therefore there is no second step.

In terms of compartment response analysis, the profile which has the highest total M&E lasting the longest time is of interest. This is the case where the second step disappears, i.e. where both the initial forward and initial reverse blowdown interval end times are the same. This condition occurs at the midpoint of the broken line, approximately 185 feet downstream of node 0a at node 9. Note that node 1a is approximately 6 ft upstream of node 9. The M&E at node 9 is determined for Hot Shutdown and EPU conditions in Appendices 1 & 2 respectively and summarized in Tables 1 & 2 respectively.

6.5 Hydraulic Resistance of Pipe and Fittings

The loss coefficients for both the piping and the fittings were calculated for use in determining the steady state break flow rate. The loss coefficients for the various piping systems are included in the RELAP model and are presented Appendix 3.

6.5.1 Tee Branch Loss

Per Section 4.1.4.1, $K_s > 1$ for all cases. A value of $K_s = 1$ is conservatively used.

6.5.2 Straight Pipe

The absolute roughness is 0.00015 [ft] (Design Input 2.3).

6.5.3 Elbows

$$K_{loc}=A_1B_1C_1$$

where:

A_1: if $\delta \leq 70°$, $A_1 = 0.9*\sin(\delta)$
if $\delta = 90°$, $A_1 = 1.0$
B_1: $r/d > 1.0$, $B_1 = 0.21 * (r/d)^{-0.5}$
$C_1 = 1.0$ for circular cross sections
δ = the angle of the bend in degrees, either 90° or 60°
$r/d = 1.5$

6.5.4 Valves

Gate Valve: $K_D = 8 * f_T$

where:

$f_T = 0.018$

7.0 RESULTS

The results of the mass and energy release calculations are shown in Sections 7.2 and 7.3 for Hot Shutdown and EPU conditions respectively. This data is used as input into other calculations analyzing environmental transient conditions, i.e. the calculation of peak pressure and temperature in the CCWHX Room resulting from a HELB. Appendices 1 & 2 contain the spreadsheets further supporting these results.

7.1 SUMMARY & CONCLUSIONS

The maximum energy release occurs at the Hot Shutdown conditions. The results contained in Section 7.2 are bounding for a single break at any point on the 3 inch line within the CCWHX Room. Effects of pipe whip, possibly resulting in additional line breaks in the CCWHX Room, are beyond the scope of this calculation and are not addressed herein. Mass and Energy Flowrates are based on isolation of the HELB within 30 minutes of the pipe break occurring. Station Operations personnel should confirm that such breaks in the CCWHX room can be detected and isolated within 30 minutes.

7.2 RESULTS AT HOT SHUTDOWN CONDITIONS

Compilation of AFW HELB Mass and Energy Release Rates in the CCWHX Room
AFW Bounding Break - Hot Shutdown Conditions

Time Interval [sec]		[sec]	Forward Mass Flow Rate [lbm/sec]	Reverse Mass Flow Rate [lbm/sec]	Total Mass Flow Rate [lbm/sec]	Forward Flow Energy Release Rate [Btu/sec]	Reverse Flow Energy Release Rate [Btu/sec]	Total Energy Release Rate [Btu/sec]
0.000	≤ t <	0.256	108.90	108.90	217.80	129,831	129,831	259,662
0.256	≤ t <	1800.0	38.19	3.52	41.71	45,530	4,197	49,727
1800.0	≤ t <	∞	0.00	0.00	0.00	0	0	0

Enthalpy of Release Used for Calculating Energy Release: 1192.2 [BTU/lbm]

7.3 RESULTS AT EXTENDED POWER UPRATE CONDITIONS

Compilation of AFW HELB Mass and Energy Release Rates in the CCWHX Room
AFW Bounding Break - Extented Power Uprate (EPU) Conditions

Time Interval [sec]		[sec]	Forward Mass Flow Rate [lbm/sec]	Reverse Mass Flow Rate [lbm/sec]	Total Mass Flow Rate [lbm/sec]	Forward Flow Energy Release Rate [Btu/sec]	Reverse Flow Energy Release Rate [Btu/sec]	Total Energy Release Rate [Btu/sec]
0.000	≤ t <	0.256	86.10	86.10	172.20	103,234	103,234	206,468
0.256	≤ t <	1800.0	30.13	3.51	33.64	36,126	4,208	40,334
1800.0	≤ t <	∞	0.00	0.00	0.00	0	0	0

Enthalpy of Release Used for Calculating Energy Release: 1199.0 [BTU/lbm]

8.0 REFERENCES

8.1 ANSI/ANS-56.10-1982, "American National Standard for Subcompartment Pressure and Temperature Transient Analysis in Light Water Reactors," American Nuclear Society.

8.2 ANSI/ANS-58.2-1980, "Design Basis for Protection of Light Water Nuclear Power Plants Against Effects of Postulated Pipe Rupture," American Nuclear Society.

8.3 CRF Excel Add-In, "Critical Flow Functions Link to Excel," Sargent & Lundy Program No. 03.7.671-1.0, Revision 0, dated September 1999.

8.4 Crane Technical Paper No. 410, "Flow of Fluids Through Valves, Fittings, and Pipe," 25th Printing, 1988.

8.5 Main Steam & Auxiliary Steam Drawings & P&IDs:

a	M-201	Sheet 1	Rev 54	P&ID, Main & Reheat Steam System, Unit 1
b	M-2201	Sheet 1	Rev 49	P&ID, Main & Reheat Steam System, Unit 2
c	P-106	Sheet 1	Rev 9	Isometric Drawing, Main Steam to AFW Pump
d	P-172	Sheet 1	Rev. 9	Isometric Drawing, Auxiliary Steam Supply to Evaporator
e	P-206	Sheet 1	Rev. 7	Isometric Drawing, Main Steam to Aux. F.W. Pump 2P-29 3"-EB-8, Unit 2
f	P-207	Sheet 1	Rev. 1	Isometric Drawing, Main Steam Outside Ctmt to HP Turbine Control Valves, Unit 2
g	PBA-2044	Sheet 1	Rev. 0	Isometric Drawing, Aux Steam to Aux FW Pump 2P29, Unit 2
h	PBA-2044	Sheet 2	Rev. 0	Isometric Drawing, Aux Steam to Aux FW Pump 2P29, Unit 2
i	PBA-3004	Sheet 1	Rev. 4	Isometric Drawing, Aux Steam to WD Blowdown Area, Elevation 44' 0", Unit 1&2
j	PBA-3042	Sheet 1	Rev. 2	Isometric Drawing, Piping Isometric, Radwaste Steam Supply, Unit 1&2
k	PBM-227	Sheet 1	Rev. 18	P&ID, Radwaste Steam Supply, Unit 1&2

8.6 Pipe Class Summaries:

a. DG-M03, Rev. 18, Bechtel Pipe Class Summary

b. DG-M04, Rev. 2, Stone & Webster Pipe Class Summary

8.7 Operating Procedure OI 18A, Rev 5, "Shifting Radwaste Steam Supplies."

8.8 Point Beach FSAR:

a) Appendix A.2, "High Energy Pipe Failure Outside Containment" (2007).

b) Section 14.2.5.1, Rupture of a Steam Pipe (General) (2006)

c) Section 14.2.5.3, Rupture of a Steam Pipe (Results) (2006)

8.9 Operating Procedure OI 18B, Rev. 6, "Operation of the Radwaste Steam and Condensate System."

8.10 Westinghouse Report, NPC-1999-05997, Revision 2, "Fuel Upgrade/Power Uprating Reload Transition Safety Report for Point Beach Units 1 and 2," (Attachment A)

8.11 ASME Steam Tables, Fifth Edition, 1983.

8.12 Steam Table Function Dynamic Link Library (STMFUNC), Sargent & Lundy Program Number STM 03.7.598-2.0

8.13 Computer Program RELAP5/MOD3.3, S&L Program No. 03.7.459-3.31.

8.14 I. E. Idelchik, "Handbook of Hydraulic Resistance," 3rd Edition, CRC Press, 1994.

8.15 FPL Energy Design Information Transmittal, DIT-PB-08-SL-0001, dated 8/8/2008, "DIT-PB-SL-0001 SG Pressure, temperature, and steam quality at EPU" (Attachment B). Includes:

a Westinghouse Electric Company Calculation, CN-PCWG-07-16, Revision 0, "Point Beach Units 1 & 2 (WEP/WIS) Best Estimate Performance Parameters Based on Plant Calorimetric Data to Support the Extended Power Uprate (EPU) Program."

b FPL Energy Design Information Transmittal, DIT # PB-EPU-08 SSW-0012, Rev. 0, "Point Beach EPU Project Expected Steam Generator Outlet Pressures." (Attachment C)

c Westinghouse Electric Company Calculation, CN-NCE-08-21, Revision 1, "Point Beach Units 1 & 2 Replacement Steam Generator GENF Computer code Models and Thermal-Hydraulic Data to Support the Extended Power Uprate Program."

8.16 Point Beach Nuclear Plant Modification Request, MR Number 87-053, "Modification to suppress Rad Waste Steam Valve SA1 Noise" (Attachment D).

8.17 Valtek Catalogue, Rev 11/88/5M/B, "Sizing and Selection Control Valve C_v" (Attachment E).

8.18 DIT-PB-PMED-0054-00, dated 11/25/2008, "PBNP Condensate and Feedwater System Makeup Capability"

Appendix 1: Calculation Pages for Hot Shutdown Conditions

Excel Sheet Name: "Energy Calcs - Hot SD"

Mass Flowrate Determination for Bounding Break at Hot Shutdown Conditions

Postulated break is made up flow contributions for break locations at Node 1a downstream to node 8. This postulated break bounds breaks downstream of node 1a within the CCW HX Room.

Initial Conditions:			**Basis**
Main Steam Line Pressure (P)	psia	1020.1	P_{sat} at T, Ref. 8.12
Break Location Initial Temperature	°F	547.0	Reference 8.10, Design Input 2.2
Break location initial enthalpy (h)	BTU/lbm	1192.2	h_{sat} of Main Steam
Minimum initial enthalpy at max. moisture content (h_{min})	BTU/lbm	1190.6	h of 99.75% quality steam at P
Moody Mass Flux (G)	lbm/ft^2-sec	2122.1	Moody, Reference 8.3
AFW Steam supply inlet density (ρ_f)	lbm/ft^3	2.29	ASME Steam Tables
Sonic Velocity (c_0)	ft/sec	1450.0	Section 2.8
Area of AFW Steam line, 3" Schedule 40 pipe (A)	ft^2	0.0513	Reference 8.4
Maximum Isolation time after break	hours	0.5	Assumption 3.1

Initial Forward Blowdown (Main Steam Line to Break):			**Basis**
Break location pipe internal area (A)	ft^2	0.0513	Reference 8.4
Discharge Coefficient (C)		1.00	Section 4.1.4.1
Critical mass flow rate ($m_{fwd\ i}$)	lbm/sec	108.9	G * A * C
Length of Piping from Break to Main Steam (l_F)	ft	185.44	Section 6.2.2
Time duration of Forward Inventory Flow ($t_{fwd\ i}$)	sec	0.256	Section 6.2.2

Steady State Forward Blowdown (RELAP Results):			
Mass flow rate at break location (m_{dotFss})	lbm/sec	38.187	RELAP Output (Attachment F)

Initial Reverse Blowdown (Downstream of Break, neglecting check valve):			**Basis**
Break location pipe internal area (A)	ft^2	0.0513	Reference 8.4
Discharge Coefficient (C)		1.00	Section 4.1.4.1
Critical mass flow rate (m_{dotR})	lbm/sec	108.9	G * A * C
Length of Piping to Downstream Change of Area (l_R)	ft	185.43	Section 6.3.2
Time duration of Reverse Inventory Flow (t_R)	sec	0.256	Section 6.3.2

Steady State Reverse Inventory Flow (Downstream of Break, neglecting check valve):			**Basis**
Restriction limiting area (A") (Valve RS-SA-1)	in^2	2.06	Design Input 2.9
Restriction limiting area (A)	ft^2	0.0143	A"[in^2]/144[in^2/ft^2]
Reverse Inventory Pressure (P_{RWSS})	psia	117.70	Reference 8.5-k
Reverse Inventory Enthalpy (h_{min})	BTU/lbm	1,190.6	h of 99.75% quality steam at P
Moody Mass Flux (G)	lbm/ft^2-sec	246.20	Moody, Reference 8.3
Discharge Coefficient (C)		1.00	Section 4.1.4.1
Critical mass flow rate (m_{dotRss})	lbm/sec	3.52	G * A * C

	Initial Forward Blowdown End Time ($t_{fwd\ i}$)	Initial Reverse Blowdown End Time ($t_{rev\ i}$)	Forward & Reverse Steady State Flow End Time (HELB Isolation)
Time Line Development (seconds)	0.256	0.256	1800.0

Appendix 2: Calculation Pages for Extended Power Uprate Conditions

Excel Sheet Name: "Energy Calcs – EPU"

Mass Flowrate Determination for Bounding Break at Extended Power Uprate Conditions

Postulated break is made up flow contributions for break locations at Node 1a downstream to node 8. This postulated break bounds breaks downstream of node 1a within the CCW HX Room.

Initial Conditions:			**Basis**
Main Steam Line Pressure (P)	psia	813.0	Reference 8.21, Design Input 2.2
Break Location Initial Temperature	°F	520.1	T_{sat} at P, Ref. 8.12
Break location initial enthalpy (h)	BTU/lbm	1199.0	h_{sat} of Main Steam
Minimum initial enthalpy at max. moisture content (h_{min})	BTU/lbm	1197.3	h of 99.75% quality steam at P
Moody Mass Flux (G)	lbm/ft^2-sec	1677.7	Moody, Reference 8.3
AFW Steam supply inlet density (ρ_f)	lbm/ft^3	1.79	ASME Steam Tables
Sonic Velocity (c_0)	ft/sec	1450.0	Section 2.8
Area of AFW Steam line, 3" Schedule 40 pipe (A)	ft^2	0.0513	Section 2.8
Maximum Isolation time after break	hours	0.5	Assumption 3.1

Initial Forward Blowdown (Main Steam Line to Break):			**Basis**
Break location pipe internal area (A)	ft^2	0.0513	
Discharge Coefficient (C)		1.00	Section 4.1.4.1
Critical mass flow rate ($m_{fwd\ i}$)	lbm/sec	86.1	G * A * C
Length of Piping from Break to Main Steam (l_F)	ft	185.44	Section 6.2.2
Time duration of Forward Inventory Flow ($t_{fwd\ i}$)	sec	0.256	Section 6.2.2

Steady State Forward Blowdown (RELAP Results):			
Mass flow rate at break location (m_{dotFss})	lbm/sec	30.126	RELAP Output (Attachment G)

Initial Reverse Blowdown (Downstream of Break, neglecting check valve):			**Basis**
Break location pipe internal area (A)	ft^2	0.0513	Reference 8.4
Discharge Coefficient (C)		1.00	Section 4.1.4.1
Critical mass flow rate (m_{dotR})	lbm/sec	86.1	G * A * C
Length of Piping to Downstream Change of Area (l_R)	ft	185.43	Section 6.3.2
Time duration of Reverse Inventory Flow (t_R)	sec	0.256	Section 6.3.2

Steady State Reverse Inventory Flow (Downstream of Break, neglecting check valve):			**Basis**
Restriction limiting area (A") (Valve RS-SA-1)	in^2	2.06	Design Input 2.9
Restriction limiting area (A)	ft^2	0.0143	A"[in^2]/144[in^2/ft^2]
Reverse Inventory Pressure (P_{RWSS})	psia	117.70	Reference 8.5-k
Reverse Inventory Enthalpy (h_{min})	BTU/lbm	1,197.3	h of 99.75% quality steam at P
Moody Mass Flux (G)	lbm/ft^2-sec	245.55	Moody, Reference 8.3
Discharge Coefficient (C)		1.00	Section 4.1.4.1
Critical mass flow rate (m_{dotRss})	lbm/sec	3.51	G * A * C

	Initial Forward Blowdown End Time ($t_{fwd\ i}$)	Initial Reverse Blowdown End Time ($t_{rev\ i}$)	Forward & Reverse Steady State Flow End Time (HELB Isolation)
Time Line Development (seconds)	0.256	0.256	1800.0

Appendix 3: RELAP & Volume Input Worksheet

Excel Sheet Name: "Pipe Inputs (RELAP & Rvrs Vol)"

Nodes	Drawing	Length [ft]	Lengh Sum [ft]	Orientation [°]	Nom. Dia [in]	Sch	ID [in]	Area [ft²]	Volume [ft³]	Volume Sum [ft³]	No. of Vols	Length per vol. [ft]	Vol. No.	RELAP
0A ->1A	P-106	3.58	3.5833	90	3	40	3.068	0.0513	0.1840	0.18396	4	0.8958	4	Pipe 103
	P-106	2.00	5.5833	0	3	40	3.068	0.0513	0.1027	0.28664	3	0.6667	7	
	P-106	5.73	11.3125	-90	3	40	3.068	0.0513	0.2941	0.58076	7	0.8185	14	
	P-106	11.17	22.4792	0	3	40	3.068	0.0513	0.5733	1.15403	13	0.8590	27	
	P-106	4.02	26.5000	-90	3	40	3.068	0.0513	0.2064	1.36045	5	0.8042	32	
	P-106	13.04	39.5417	0	3	40	3.068	0.0513	0.6695	2.02999	15	0.8694	47	
	P-106	18.83	58.3750	-90	3	40	3.068	0.0513	0.9669	2.99685	20	0.9417	67	
	P-106	7.00	65.3750	0	3	40	3.068	0.0513	0.3594	3.35622	8	0.8750	75	
	P-106	80.00	145.3750	0	3	40	3.068	0.0513	4.1070	7.46325	90	0.8889	90	Pipe 105
	P-106	1.54	146.9167	-76	3	40	3.068	0.0513	0.0791	7.54239	2	0.7708	92	
	P-106	15.29	162.2083	0	3	40	3.068	0.0513	0.7850	8.32744	18	0.8495	18	Pipe 107
	P-106	14.75	176.9583	-90	3	40	3.068	0.0513	0.7572	9.08467	18	0.8194	36	
	P-106	2.29	**179.2500**	0	3	40	3.068	0.0513	0.1176	**9.20232**	3	0.7639	39	

Flow Energy Loss Coefficients

			Units	Per Section
f_f (3" Pipe)	=	0.018	[ul]	Reference 8.4
30" to 3" Pipe				
$K_{30\ to\ 3}$	=	1.0000	[ul]	Section 4.1.4.1
K_{valve}	=	0.1440	[ul]	Reference 8.4

			Units	Per Section
Straight Pipe (Section 4.1.9.1)				
ε	=	0.00015	[ft]	Section 2.3
Elbows				
$K_{90°}$	=	0.1715	[ul]	Section 4.1.9.2
$K_{60°}$	=	0.1336	[ul]	Section 4.1.9.2

Forward Piping Lengths and Volumes

Nodes	Drawing	Length [ft]	Lengh Sum [ft]	Orientation [°]	Nom. Dia [in]	Sch	ID [in]	Area [ft²]	Volume [ft³]	Volume Sum [ft³]
0A->1A	P-106	179.25	179.2500	N/A	3	40	3.068	0.0513	9.2023	9.2023
1A -> 2A*	P-106	2.88	182.1250	0	3	40	3.068	0.0513	0.1476	9.3499
1A -> 3A	P-172	1.92	184.0417	90	3	40	3.068	0.0513	0.0984	9.4483
3A -> 4A	P-172	0.94	184.9792	0	3	40	3.068	0.0513	0.0481	9.4964
	P-172	3.67	188.6458	90	3	40	3.068	0.0513	0.1882	9.6847
	P-172	7.65	196.2957	0	3	40	3.068	0.0513	0.3927	10.0774
3B -> 4A	P-172	0.94	197.2332	0	3	40	3.068	0.0513	0.0481	10.1255
	P-172	2.83	200.0666	90	3	40	3.068	0.0513	0.1455	10.2710
	P-172	2.50	202.5666	0	3	40	3.068	0.0513	0.1283	10.3993
4A -> 5A	P-172	1.75	204.3166	0	3	40	3.068	0.0513	0.0898	10.4892
	P-172	2.53	206.8504	45	3	40	3.068	0.0513	0.1301	10.6193
	P-172	44.21	251.0587	0	3	40	3.068	0.0513	2.2696	12.8888
	P-172	6.54	257.6004	-90	3	40	3.068	0.0513	0.3358	13.2247
	PBA-3004	1.08	258.6837	0	3	40	3.068	0.0513	0.0556	13.2803
5A -> 6	PBA-3004	1.92	260.6004	0	3	40	3.068	0.0513	0.0984	13.3787
	PBA-3004	6.83	267.4337	90	3	40	3.068	0.0513	0.3508	13.7295
	PBA-3004	4.83	272.2618	0	3	40	3.068	0.0513	0.2479	13.9774
5C -> 6	PBA-3004	1.88	274.1368	0	3	40	3.068	0.0513	0.0963	14.0736
6 -> 8	PBA-3004	7.56	281.6993	0	3	40	3.068	0.0513	0.3882	14.4619
	PBA-3004	0.75	282.4493	-90	3	40	3.068	0.0513	0.0385	14.5004
	PBA-3004	52.46	334.9077	0	3	40	3.068	0.0513	2.6931	17.1935
	PBA-3004	1.31	336.2202	-45	3	40	3.068	0.0513	0.0674	17.2608
	PBA-3004	14.13	350.3452	0	3	40	3.068	0.0513	0.7251	17.9860
	PBA-3042	6.00	356.3452	0	3	40	3.068	0.0513	0.3080	18.2940
8->7	PBA-3042	4.08	360.4285	0	3	40	3.068	0.0513	0.2096	18.5036
	PBA-3042	5.25	365.6785	-90	3	40	3.068	0.0513	0.2695	18.7732
7 -> SP	PBA-3042	2.13	367.8035	-90	3	40	3.068	0.0513	0.1091	18.8823
7 -> RS-SA-1	PBA-3042	3.06	**370.87**	0	3	40	3.068	0.0513	0.1572	**19.0395**

0A->RS-SA-1	N/A	370.87	370.87	N/A	3	40	3.068	0.0513	19.0395	**19.0395**
0A->9	N/A	185.43	185.43	N/A	3	40	3.068	0.0513	9.5197	**9.5197**

*Node 2a has no downstream inventory. Upstream inventory is conservatively treated as the entire line volume.

Appendix 4: Excel Formula Sheets

Formulas for Section 7.0 – Results (Hot Shutdown Shown)

	B	C	D	E	F	G	H	I	J
1	**Compilation of AFW HELB Mass and Energy Release Rates in the CCWHX Room**								
2	**AFW Bounding Break - Hot Shutdown Conditions**								
3									
4	**Time Interval**			**Forward Mass Flow Rate**	**Reverse Mass Flow Rate**	**Total Mass Flow Rate**	**Forward Flow Energy Release Rate**	**Reverse Flow Energy Release Rate**	**Total Energy Release Rate**
5	[sec]		[sec]	[lbm/sec]	[lbm/sec]	[lbm/sec]	[Btu/sec]	[Btu/sec]	[Btu/sec]
6	0.000	≤ t <	=B7	='Energy Calcs - Hot SD'!$C$20	='Energy Calcs - Hot SD'!C30	=F6+E6	=E6*$H$10	=F6*$H$10	=H6+I6
7	='Energy Calcs - Hot SD'!C45	≤ t <	=B8	='Energy Calcs - Hot SD'!$C$25	='Energy Calcs - Hot SD'!C41	=F7+E7	=E7*$H$10	=F7*$H$10	=H7+I7
8	='Energy Calcs - Hot SD'!D45	≤ t <	∞	0.0	0.0	=F8+E8	=E8*$H$10	=F8*$H$10	=H8+I8
9									
10					Enthalpy of Release Used for Calculating Energy Release:		='Energy Calcs - Hot SD'!$C$9	[BTU/lbm]	

Appendix 4: Excel Formula Sheets

Formulas for Appendices 1 & 2 – Calculation Pages (Hot Shutdown shown)

	A	B	C	D
2	Mass Flowrate Determination for Bounding Break at Hot Shutdown Conditions			
3				
4	Postulated break is made up flow contributions for break locations at Node 1a downstream to node 8. This postulated break bounds breaks			
5	downstream of node 1a within the CCW HX Room.			
6	**Initial Conditions:**			**Basis**
7	Main Steam Line Pressure (P)	psia	=ptsat(C8)	Psat at T, Ref. 8.12
8	Break Location Initial Temperature	°F	547.0	Reference 8.10, Design Input 2.2
9	Break location initial enthalpy (h)	BTU/lbm	=hgtsat(C8)	hsat of Main Steam
10	Minimum initial enthalpy at max. moisture content (hmin)	BTU/lbm	=htq(C8,99.75)	h of 99.75% quality steam at P
11	Moody Mass Flux (G)	lbm/ft2-sec	=gmdy($C$7,$C$10)	Moody, Reference 8.3
12	AFW Steam supply inlet density (rf)	lbm/ft3	=1/vgtsat(C8)	ASME Steam Tables
13	Sonic Velocity (c0)	ft/sec	1450.0	Section 2.8
14	Area of AFW Steam line, 3" Schedule 40 pipe (A)	ft2	=PI()*('Pipe Inputs (RELAP & Rvrs Vol)'!H3/12/2)^2	Reference 8.4
15	Maximum Isolation time after break	hours	0.5	Assumption 3.1
16				
17	**Initial Forward Blowdown (Main Steam Line to Break):**			**Basis**
18	Break location pipe internal area (A)	ft2	=C14	Reference 8.4
19	Discharge Coefficient (C)		1.00	=D29
20	Critical mass flow rate (mfwd i)	lbm/sec	=C11*C18*C19	G * A * C
21	Length of Piping from Break to Main Steam (IF)	ft	='Section 6 Spreadsheets'!G9	Section 6.2.2
22	Time duration of Forward Inventory Flow (tfwd i)	sec	=2*C21/$C$13	Section 6.2.2
23				
24	**Steady State Forward Blowdown (RELAP Results):**			
25	Mass flow rate at break location (mdotFss)	lbm/sec	38.187	RELAP Output (Attachment F)
26				
27	**Initial Reverse Blowdown (Downstream of Break, neglecting check valve):**			**Basis**
28	Break location pipe internal area (A)	ft2	=$C$14	Reference 8.4
29	Discharge Coefficient (C)		1.00	='Pipe Inputs (RELAP & Rvrs Vol)'!E22
30	Critical mass flow rate (mdotR)	lbm/sec	=$C$11*C28*C29	G * A * C
31	Length of Piping to Downstream Change of Area (lR)	ft	='Section 6 Spreadsheets'!G25	Section 6.3.2
32	Time duration of Reverse Inventory Flow (tR)	sec	=2*$C$31/$C$13	Section 6.3.2
33				
34	**Steady State Reverse Inventory Flow (Downstream of**			**Basis**
35	Restriction limiting area (A") (Valve RS-SA-1)	in2	2.06	Design Input 2.9
36	Restriction limiting area (A)	ft2	=C35/144	A"[in2]/144[in2/ft2]
37	Reverse Inventory Pressure (PRWSS)	psia	=103+14.7	Reference 8.5-k
38	Reverse Inventory Enthalpy (hmin)	BTU/lbm	=C10	h of 99.75% quality steam at P
39	Moody Mass Flux (G)	lbm/ft2-sec	=gmdy($C$37,$C$38)	Moody, Reference 8.3
40	Discharge Coefficient (C)		1.00	=D29
41	Critical mass flow rate (mdotRss)	lbm/sec	=C39*C36*C40	G * A * C
42				
43		Initial Forward Blowdown End Time	Initial Reverse Blowdown End Time	Forward & Reverse Steady State Flow End Time
44		(tfwd i)	(trev i)	(HELB Isolation)
45	Time Line Development (seconds)	=C22	=C32	=C15*3600

Appendix 4: Excel Formula Sheets

Formulas for Appendix 3 – RELAP & Volume Input Worksheet

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Nodes	Drawing	Length	Lengh Sum	Orientation	Nom. Dia	Sch	ID	Area	Volume	Volume Sum	No. of Vols	Length per vol.	Vol. No.	RELAP
2			[ft]	[ft]	[°]	[in]		[in]	[ft2]	[ft2]	[ft2]		[ft]		
3		P-106	=(91+7/12)-88	=C3	90	3	40	3.068	=PI()*(H3/2/12)^2	=C3*I3	=J3	4	=C3/L3	=L3	
4		P-106	2.00	=C4+D3	0	3	40	3.068	=PI()*(H4/2/12)^2	=C4*I4	=J4+K3	3	=C4/L4	=L4+N3	
5		P-106	=91+7/12-85-10.25/12	=C5+D4	-90	3	40	3.068	=PI()*(H5/2/12)^2	=C5*I5	=J5+K4	7	=C5/L5	=L5+N4	
6		P-106	=11+2/12	=C6+D5	0	3	40	3.068	=PI()*(H6/2/12)^2	=C6*I6	=J6+K5	13	=C6/L6	=L6+N5	Pipe 103
7		P-106	=85+10.25/12-81-10/12	=C7+D6	-90	3	40	3.068	=PI()*(H7/2/12)^2	=C7*I7	=J7+K6	5	=C7/L7	=L7+N6	
8		P-106	=1+9/12+11+3.5/12	=C8+D7	0	3	40	3.068	=PI()*(H8/2/12)^2	=C8*I8	=J8+K7	15	=C8/L8	=L8+N7	
9	0A ->1A	P-106	=81+10/12-63	=C9+D8	-90	3	40	3.068	=PI()*(H9/2/12)^2	=C9*I9	=J9+K8	20	=C9/L9	=L9+N8	
10		P-106	=5+2	=C10+D9	0	3	40	3.068	=PI()*(H10/2/12)^2	=C10*I10	=J10+K9	8	=C10/L10	=L10+N9	
11		P-106	=2+7/12+5+8.25/12+12+12+2/12+4+10/12+6+11/12+12+4/12+7+3.5/12+18/12+2+6+1.75/12+4+6/12+2+0.5/12	=C11+D10	0	3	40	3.068	=PI()*(H11/2/12)^2	=C11*I11	=J11+K10	90	=C11/L11	=L11	Pipe 105
12		P-106	=1+6.5/12	=C12+D11	=-90+14	3	40	3.068	=PI()*(H12/2/12)^2	=C12*I12	=J12+K11	2	=C12/L12	=N11+L12	
13		P-106	=3+5+2/12+2+9/12+2+10.5/12+18/12	=C13+D12	0	3	40	3.068	=PI()*(H13/2/12)^2	=C13*I13	=J13+K12	18	=C13/L13	=L13	
14		P-106	=62+9/12-48	=C14+D13	-90	3	40	3.068	=PI()*(H14/2/12)^2	=C14*I14	=J14+K13	18	=C14/L14	=L14+N13	Pipe 107
15		P-106	=2+3.5/12	=C15+D14	0	3	40	3.068	=PI()*(H15/2/12)^2	=C15*I15	=J15+K14	3	=C15/L15	=L15+N14	
16															

Flow Energy Loss Coefficients

				Units	Per Section
19	ft (3" Pipe)	'=	0.018	[ul]	Reference 8.4
20					
21	30" to 3" Pipe				
22	K30 to 3	'=	1.0000	[ul]	Section 4.1.4.1
23					
24	Kvalve	'=	=8*C19	[ul]	Reference 8.4

				Units	Per Section
	Straight Pipe (Section 4.1.9.1)				
	ε	'=	0.00015	[ft]	Section 2.3
	Elbows				
	K90°	'=	=(1)*(0.21*(1.5)^(-0.5))*1	[ul]	Section 4.1.9.2
	K60°	'=	=(0.9*SIN(60*PI()/180))*(0.21*(1.5)^(-0.5))*1	[ul]	Section 4.1.9.2

25

Forward Piping Lengths and Volumes

	Nodes	Drawing	Length [ft]	Lengh Sum [ft]	Orientation [°]	Nom. Dia [in]	Sch	ID [in]	Area [ft2]	Volume [ft2]	Volume Sum [ft2]
29	0A->1A	P-106	=D15	=C29	N/A	3	40	3.068	=PI()*(H29/2/12)^2	=C29*I29	=J29
30	1A -> 2A*	P-106	=(1+(9+1/4)/12)+(0+(6+3/4)/12)+(0+(6+1/2)/12)	=C30+D29	0	3	40	3.068	=PI()*(H30/2/12)^2	=C30*I30	=J30+K29
31	1A -> 3A	P-172	=(49+11/12)-(48)	=C31+D30	90	3	40	3.068	=PI()*(H31/2/12)^2	=C31*I31	=J31+K30
32		P-172	=((11+1/4)/12)	=C32+D31	0	3	40	3.068	=PI()*(H32/2/12)^2	=C32*I32	=J32+K31
33	3A -> 4A	P-172	=(53+7/12)-(49+11/12)	=C33+D32	90	3	40	3.068	=PI()*(H33/2/12)^2	=C33*I33	=J33+K32
34		P-172	=(8/12)+(8/12)+((1+2/12)*SQRT(2))+(1+9/12)+(2+11/12)	=C34+D33	0	3	40	3.068	=PI()*(H34/2/12)^2	=C34*I34	=J34+K33
35		P-172	=((11+1/4)/12)	=C35+D34	0	3	40	3.068	=PI()*(H35/2/12)^2	=C35*I35	=J35+K34
36	3B -> 4A	P-172	=(53+7/12)-(50+9/12)	=C36+D35	90	3	40	3.068	=PI()*(H36/2/12)^2	=C36*I36	=J36+K35
37		P-172	=(6/12)+(2+0/12)	=C37+D36	0	3	40	3.068	=PI()*(H37/2/12)^2	=C37*I37	=J37+K36
38		P-172	=(1+9/12)	=C38+D37	0	3	40	3.068	=PI()*(H38/2/12)^2	=C38*I38	=J38+K37
39		P-172	=(SQRT(2)*((55+(4+1/2)/12)-(53+7/12)))	=C39+D38	45	3	40	3.068	=PI()*(H39/2/12)^2	=C39*I39	=J39+K38
40	4A -> 5A	P-172	=2+(6/12)+(6+7/12)+9+(2+7/12)+(4+(4+1/2)/12)+(1+4/12)+(6+1/12)+(1+7/12)+(2+5/12)+(5+4/12)+(2+5/12)	=C40+D39	0	3	40	3.068	=PI()*(H40/2/12)^2	=C40*I40	=J40+K39
41		P-172	=(55+(4+1/2)/12)-(48+10/12)	=C41+D40	-90	3	40	3.068	=PI()*(H41/2/12)^2	=C41*I41	=J41+K40
42		PBA-3004	=(1+1/12)	=C42+D41	0	3	40	3.068	=PI()*(H42/2/12)^2	=C42*I42	=J42+K41
43		PBA-3004	=(1+2/12)+(0+9/12)	=C43+D42	0	3	40	3.068	=PI()*(H43/2/12)^2	=C43*I43	=J43+K42
44	5A -> 6	PBA-3004	=(6+10/12)	=C44+D43	90	3	40	3.068	=PI()*(H44/2/12)^2	=C44*I44	=J44+K43
45		PBA-3004	=(0+10/12)+(1+2/12)+(0+(8+1/2)/12)+(2+(1+7/16)/12)	=C45+D44	0	3	40	3.068	=PI()*(H45/2/12)^2	=C45*I45	=J45+K44
46	5C -> 6	PBA-3004	=(0+(8+1/2)/12)+(1+2/12)	=C46+D45	0	3	40	3.068	=PI()*(H46/2/12)^2	=C46*I46	=J46+K45
47		PBA-3004	=(7+(6+3/4)/12)	=C47+D46	0	3	40	3.068	=PI()*(H47/2/12)^2	=C47*I47	=J47+K46
48		PBA-3004	=(0+9/12)	=C48+D47	-90	3	40	3.068	=PI()*(H48/2/12)^2	=C48*I48	=J48+K47
49	6 -> 8	PBA-3004	=(28+(11+1/2)/12)+(23+6/12)	=C49+D48	0	3	40	3.068	=PI()*(H49/2/12)^2	=C49*I49	=J49+K48
50		PBA-3004	=(1+(3+3/4)/12)	=C50+D49	-45	3	40	3.068	=PI()*(H50/2/12)^2	=C50*I50	=J50+K49
51		PBA-3004	=(1+0/12)+(13+(1+1/2)/12)	=C51+D50	0	3	40	3.068	=PI()*(H51/2/12)^2	=C51*I51	=J51+K50
52		PBA-3042	=(6+0/12)	=C52+D51	0	3	40	3.068	=PI()*(H52/2/12)^2	=C52*I52	=J52+K51
53	8->7	PBA-3042	=(1+10/12)+(1+9/12)+(0+6/12)	=C53+D52	0	3	40	3.068	=PI()*(H53/2/12)^2	=C53*I53	=J53+K52
54		PBA-3042	=(53+11/12)-(48+(8)/12)	=C54+D53	-90	3	40	3.068	=PI()*(H54/2/12)^2	=C54*I54	=J54+K53
55	7 -> SP	PBA-3042	=(48+(8)/12)-(46+(6+1/2)/12)	=C55+D54	-90	3	40	3.068	=PI()*(H55/2/12)^2	=C55*I55	=J55+K54
56	7 -> RS-SA-1	PBA-3042	=(0+3/12)+(1+2/12)+(0+(6+1/2)/12)+(1+(1+1/4)/12)	=C56+D55	0	3	40	3.068	=PI()*(H56/2/12)^2	=C56*I56	=J56+K55
57											
58	0A->RS-SA-1	N/A	=D56	=C58	N/A	3	40	3.068	=PI()*(H58/2/12)^2	=C58*I58	=J58
59	0A->9	=B58	=C58/2	=C59	N/A	3	40	3.068	=PI()*(H59/2/12)^2	=C59*I59	=J59

60 *Node 2a has no downstream inventory. Upstream inventory is conservatively treated as the entire line volume.

61

Attachment A: Reference 8.10 Excerpt Containing Hot SD Reference Temperature

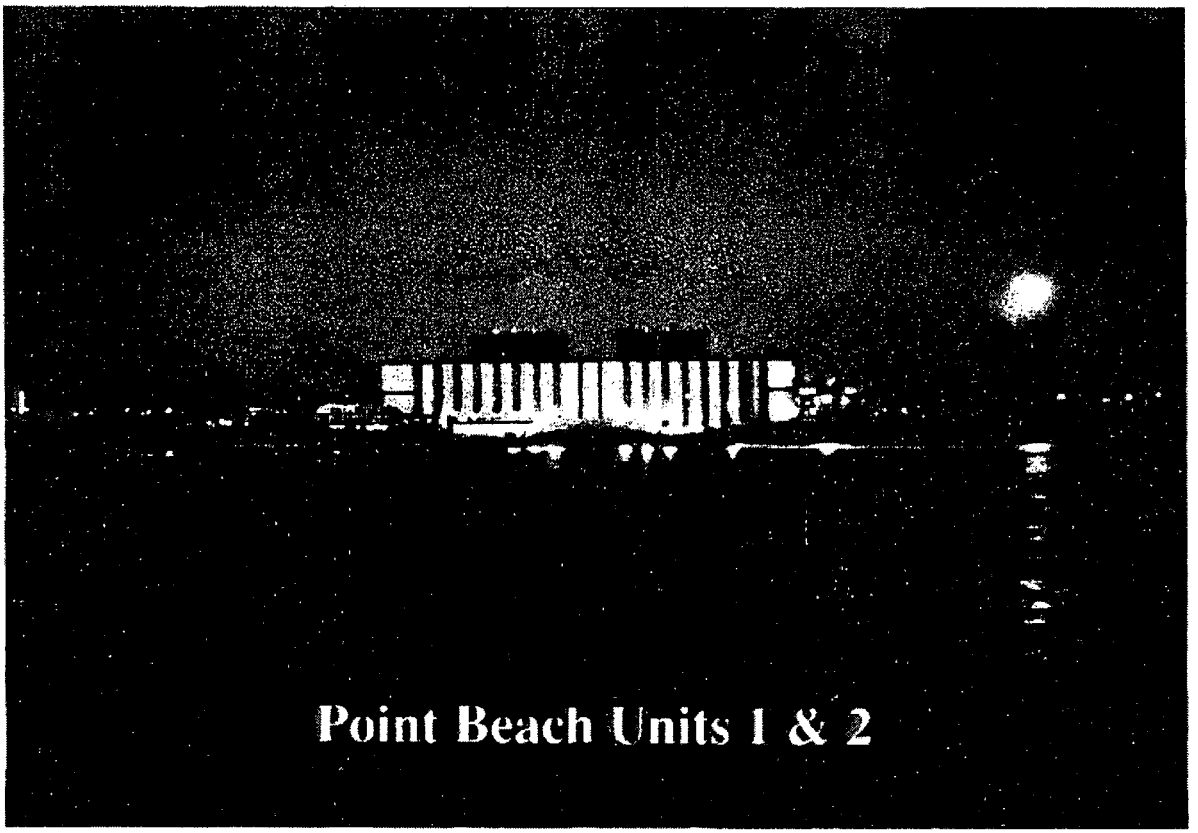
NPC 1999-05997

RELOAD TRANSITION SAFETY REPORT

FOR THE POINT BEACH UNITS 1 & 2

FUEL UPGRADE TO 422VANTAGE + FUEL

Volume 1



Attachment A: Reference 8.10 Excerpt Containing Hot SD Reference Temperature

Westinghouse Proprietary Class 2C

FUEL UPGRADE/POWER UPRATING RELOAD TRANSITION SAFETY REPORT FOR POINT BEACH UNITS 1 AND 2

Revision 2

November 1999

Prepared by:

W. H. Slagle

Approved: M.F. [illegible]
for B. Beebe, Acting Manager
Core Analysis B
Nuclear Fuels Business Unit

WESTINGHOUSE PROPRIETARY DATA

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Westinghouse Electric Company
Nuclear Fuels Business Unit
P. O. Box 355
Pittsburgh, PA 15230

Attachment A: Reference 8.10 Excerpt Containing Hot SD Reference Temperature

Westinghouse Proprietary Class 2C

ACKNOWLEDGEMENTS

The editor would like to acknowledge the efforts of the contributors to the design sections and appendices to this Reload Transition Safety Report. Major contributors included:

Mechanical/Structural Design	- M. Marzean, D. Seel, Y. C. Lee, L. Reiland, M. O'Cain
Fuel Performance Technology	- S. Miller, K. McAtee
Nuclear Design	- B. Beebe, D. Chapman
Thermal and Hydraulic Design	- P. Hilton, M. Lloyd, E. Meliksetian, T. Stoddard, J. Sheaffer
Non-LOCA Analysis	- S. Snider, J. Fontes
SGTR Analysis	- U. Bachrach
LOCA Analysis	- M. Emery, D. White, S. Dederer, J. Barsic
Reactor Vessel and Internals Analysis	- A. Fakhri, S. Abbott
Radiological Analysis	- J. Monahan, J. Grover, G. Wrights
Plant/Fluid Systems Analysis	- J. Schlonski, M. McGuire
Reactor Coolant Piping Evaluation	- C. Boggess, D. Bhowmick
Containment Analysis	- L. Smith
Margin to Trip Analysis & Design Transients	- T. Miller
PCWG	- A. Giunta
RTDP/OTΔT - OPΔT Setpoints Analysis	- W. Moomau
Technical Specifications	- F. Baskerville
Operating Plant Licensing	- L. Brown

In addition, acknowledgement is given to J. Kos, R. Kohrt, R. Creighton, L. Livingston, and L. Brown for their assistance in providing the necessary interfaces between Wisconsin Electric Power Company and Westinghouse Electric Company.

Attachment A: Reference 8.10 Excerpt Containing Hot SD Reference Temperature

Table 1-1
Performance Capability Parameters

OWNER UTILITY: Wisconsin Electric Power Company
PLANT NAME: Point Beach (WEP/WIS)
UNIT NUMBER: 1&2

PCWG-2206 (modified for customer)
CATEGORY III - RCS

BASIC COMPONENTS			
Reactor Vessel, ID, in.	132	Isolation Valves	No
Core		Number of Loops	2
Number of Assemblies	121	Steam Generator	
Rod Array	14x14 422V+ (7)	Model	44F(U1),Δ47(U2)
Rod OD, in.	0.422	Shell Design Pressure, psia	1100
Number of Grids	5Z, 2I	Reactor Coolant Pump	
Active Fuel Length, in.	143.25	Model/Weir	93/No
Number of Control Rods, FL/PL	33/0	Pump Motor, hp	6000
Internals Type	RGE	Frequency, Hz	60

THERMAL DESIGN PARAMETERS	N LOOP(3)	Uprating/Fuel Upgrade (1,8) Case 1	Case 2	Case 3	Case 4
NSSS Power, %	100	108.6	108.6	108.6	108.6
MWt	1518.5	1656	1656	1656	1656
10^6 BTU/hr	5181	5650	5650	5650	5650
Reactor Power, MWt	1518.5	1650	1650	1650	1650
10^6 BTU/hr	5181	5630	5630	5630	5630
Thermal Design Flow, Loop gpm	89,000	89,000	89,000	89,000	89,000
Reactor 10^6 lb/hr	67.1	69.0	69.0	67.6	67.6
Reactor Coolant Pressure, psia	2000(2)	2250	2250	2250	2250
Core Bypass, %	6.5	6.5	6.5	6.5	6.5
Reactor Coolant Temperature, °F					
Core Outlet	606.4	594.3	594.3	609.5	609.5
Vessel Outlet	602.8	590.2	590.2	605.5	605.5
Core Average	577.1	561.5	561.5	577.5	577.5
Vessel Average	573.9	558.1	558.1	574.0	574.0
Vessel/Core Inlet	545.0	526.0	526.0	542.5	542.5
Steam Generator Outlet	545.0	525.7	525.7	542.2	542.2
Steam Generator					
Steam Temperature, °F	521.0	497.3	493.2	514.5	510.5
Steam Pressure, psia	821	664(4,6)	640(4,6)	775(4)	748(4)
Steam Flow, 10^6 lb/hr total	6.62	7.228	7.222	7.250	7.244
Feed Temperature, °F	435.7	440.7	440.7	440.7	440.7
Moisture, % max.	0.25	0.10(5)	0.10(5)	0.10(5)	0.10(5)
App, F'F', hr. sq. ft. °F/BTU	0.000078	0.00011	0.00011	0.00011	0.00011
Tube Plugging, %	0	0	10	0	10
Zero Load Temperature, °F	547	547	547	547	547

HYDRAULIC DESIGN PARAMETERS					
Pump Design Point, Flow (gpm)/Head (ft.)	90,000/252				
Mechanical Design Flow, gpm	101,200				
Minimum Measured Flow, gpm total	182,400(9)				
Best Estimate Flow, gpm		93800	91700	93800	91700

FOOTNOTES:
(1) Parameters reflect Model Δ47 replacement steam generators but also bound operation with model 44F in Unit 1.
(2) Plant may be operated at RCS pressure of either 2000 psia or 2250 psia currently, but only at 2250 psia for cores containing 422V+ fuel.
(3) Parameters reflect current Model 44 & 44F steam generators.
(4) 13 psi internal steam generator pressure drop incorporated. Steam pressures calculated by Pensacola are 1-2 psi lower than specified.
(5) A maximum moisture carryover of 0.10% was assumed, however this cannot be warranted at this high power level and low ste am pressure.
(6) Plant operation limited to a minimum steam pressure of 700 psia so that the maximum acceptable primary to secondary side pressure differential of 1550 psi for the Model 44F and Δ47 steam generators is not exceeded.
(7) 422V+ fuel features: increased diameter rod; ZIRLO cladding, IT, GT, mid-grids; 1.5x IFBA; annular axial blankets.
(8) Systems and components analyses have been performed at more limiting parameters identified in PCWG-2122.
(9) MMF based on 2.4% flow measurement uncertainty, although a lower uncertainty may be determined from analysis.

Attachment B: DIT-PB-SL-0001 (Reference 8.15)

FPL Energy Point Beach, LLC, 6590 Nuclear Road, Two Rivers, WI 54241

FPL Energy
Point Beach Nuclear Plant

PB-EPU-08-0752

August 8, 2008

Mr. Michael Flynn
Sargent & Lundy
55 East Monroe Street
Chicago, IL 60603-5780

Subject: DIT-PB-SL-0001 SG Pressure, Temperature, and Steam Quality at EPU

FPLE/PBNP EPU WBS No.: 03.02.01

Dear Mr. Flynn:

This letter formally documents the transmittal of DIT-PB-SL-0001, "Transmittal SG pressure, temperature, and steam quality at EPU.

Sincerely,

Harv Hanneman
FPLE/PBNP EPU Engineering Manager

BG/lk

Cc: Dick Hornak
Harv Hanneman
Bryant Gerbers
PB-EPU-Project

Attachment B: DIT-PB-SL-0001 (Reference 8.15)

FPL Energy.

PBNPS EPU Project
Design Information Transmittal (DIT)

From: Bryant Gerbers (FPLE)

To : Michael Flynn (S&L)

Mod or Tracking Number: WBS 03.02.01 Date: 8/8/2008 DIT No: DIT-PB-08-SL-0001

Mod Title: SG pressure, temp, and steam quality at EPU

Plant: PB Unit 1 ☐ Unit 2 ☐ Common ☒ Quality Classification: SR

SUBJECT: DIT-PB -SL-0001 SG pressure, temperature, and steam quality at EPU.

Check if applicable:

☐ **This DIT confirms information previously transmitted orally on _____ by _____.**

☐ **This information is preliminary. See explanation below.**

SOURCE OF INFORMATION (Source documents should be uniquely identified)

CN-PCWG-07-16
DIT # PB-EPU-08-SSW-0012 R0
CN-NCE-08-21

Attachment B: DIT-PB-SL-0001 (Reference 8.15)

FPL Energy.

PBNPS EPU Project
Design Information Transmittal (DIT)

DESCRIPTION OF INFORMATION (Write the information being transmitted or list each document being transmitted)

1) Westinghouse BE parameters are provided in Case 6 of Westinghouse calc # CN-PCWG-07-16.
2) DIT # PB-EPU-08-SSW-0012 R0 chose best estimate SG outlet pressures. Note the differences between U1 and U2.
3) Westinghouse calc # CN-NCE-08-21 provides a moisture carryover of 0.25% at EPU.
4) No load conditions do not change

DISTRIBUTION (Recipients should receive all attachments unless otherwise indicated. All attachments are uncontrolled unless otherwise indicated)

Michael Flynn

PREPARED BY (The Preparer and Approver may be the same person.)

Preparer Name	Position	Signature	Date
Bryant Gerbers	Engineer		8/8/08

APPROVED BY (The cognizant Engineering Supervisor has release authority. Consult the Design Interface Agreement or local procedures to determine who else has release authority.)

Approver Name	Position	Signature	Date
Harv Hanneman	EPU Manager		8/8/08

A copy of the DIT (along with any attachments not on file) should be sent to the modification file

Attachment C: DIT-PB-EPU-08-SSW-0012 (Reference 8.15-b)

FPL Energy

FPLE/PBNP EPU Project
Design Information Transmittal (DIT)

From: FPLE – Point Beach

To: Shaw Stone and Webster

Mod or Tracking Number: N/A Date: 4/10/2008 DIT No: DIT-PB-EPU-08-SSW-0012 Rev. 0

Title: PB EPU Project Expected Steam Generator Outlet Pressures

Plant: Point Beach Unit 1 ☒ Unit 2 ☒ Common ☐ Quality Classification: Non Safety Related

SUBJECT: Point Beach EPU Project Expected Steam Generator Outlet Pressures

Check if applicable:

☒ **This DIT confirms information previously transmitted on** 2/27/08 **by** FPLE

☐ **This information is preliminary. See explanation below.**

SOURCE OF INFORMATION

Shaw Stone and Webster (SSW), as part of their BOP heat balance model for the FPLE Point Beach EPU Project, require best estimate steam generator outlet pressures at the uprated thermal power conditions. To aid Point Beach in determining these values, the steam generator OEM (Westinghouse) was contacted. Using both design and operating data, Westinghouse determined steam generator best estimate performance parameters as a function of RCS average temperature. This information was supplied to Point Beach in documents PCWG-07-44 (Jan. 2007 data) and WEP-08-28 (Dec. 2007 and Feb. 2008 data).

Point Beach used this supplied information, along with Point Beach historical thermal performance data and industry operating experience to develop a best estimate steam generator outlet pressure for both Unit 1 and Unit 2 (see Description of Information section below). These Best Estimate Steam Generator outlet pressures were supplied to SSW on February 27, 2008 in letter PB-EPU-08-0032. This DIT is the follow-up to that letter. SSW will use these estimates to revise the expected Point Beach EPU heat balance. The heat balance output will be used by Siemens in developing the new design of the Point Beach High Pressure Turbine rotors.

DESCRIPTION OF INFORMATION

ISSUE HISTORY

Westinghouse, as part of the uprate project, originally transmitted Best Estimate Performance Parameters for both the U1 and U2 Steam Generators as a function of RCS Average Temperature (T_{ave}). The range of proposed T_{ave} temperatures is 573° F to 577° F. This information used plant data from January 2007 and is contained in PCWG-07-44, Revision 2. A summary is below:

U1	T_{ave} = 573° F	Steam Generator Pressure = 781 psia
U1	T_{ave} = 576° F	Steam Generator Pressure = 804 psia
U1	T_{ave} = 577° F	Steam Generator Pressure = 811 psia
U2	T_{ave} = 573° F	Steam Generator Pressure = 777 psia
U2	T_{ave} = 576° F	Steam Generator Pressure = 800 psia
U2	T_{ave} = 577° F	Steam Generator Pressure = 808 psia

Using the information contained in PCWG-07-44 for U1 only, the Point Beach best estimate Heat Balance at the EPU conditions was developed (by SSW with assistance from Point Beach personnel). Originally, the decision was made to operate the RCS at a T_{ave} of 573° F. This would allow for additional operating margin if steam generator

Attachment C: DIT-PB-EPU-08-SSW-0012 (Reference 8.15-b)

FPL Energy

FPLE/PBNP EPU Project
Design Information Transmittal (DIT)

DESCRIPTION OF INFORMATION (CONTINUED)

tube plugging occurred in the future (by raising T_{ave} up to 577° F to keep SG outlet pressure constant). However, further evaluation / trending of the steam generator condition indicated minimal tube plugging was occurring or expected. By increasing the normal operating temperature of the RCS (although reducing margin), the steam generator outlet pressure could be increased. This change effectively increases / betters the inlet conditions at the High Pressure Turbine and allows for additional MW output (if designed for by Siemens). The decision was made to use a T_{ave} of 576° F which corresponds to a U1 SG outlet pressure of 804 psia. This would still allow for some SG tube plugging (margin) by raising T_{ave} of 577° F if required. Due to apparent minimal differences between U1 and U2, this pressure was transmitted to Siemens for use in both the U1 and U2 design. This information is contained in SSW letters 12918701-PB-0003 and 12918701-PB-0004.

EVALUATION OF CURRENT CONDITIONS
Additional discussion with SSW, Siemens and FPL personnel indicated further adjustments / factors needed to be evaluated before final input parameters at the uprate conditions could be supplied. This information is discussed below.

Point Beach U2 has traditionally had a higher SG outlet and main steam pressure. A review of the current data indicates that this is the current condition in the plant. To validate this, additional calorimetric data was sent to Westinghouse on 2/26/08 with up-to-date plant data. Westinghouse again developed expected EPU power level steam generator outlet pressures (WEP-08-28). The evaluation determined the following values:

U1	T_{ave} = 573° F	Steam Generator Pressure = 772 psia
U1	T_{ave} = 576° F	Steam Generator Pressure = 795 psia
U1	T_{ave} = 577° F	Steam Generator Pressure = 802 psia
U2	T_{ave} = 573° F	Steam Generator Pressure = 783 psia
U2	T_{ave} = 576° F	Steam Generator Pressure = 806 psia
U2	T_{ave} = 577° F	Steam Generator Pressure = 813 psia

These numbers are more indicative of the traditional differences at Point Beach; the U2 expected SG outlet pressure is higher than U1.

In addition to these changes, Siemens questioned if differences in U1 and U2 are significant enough to uniquely design each unit. It appears from these results that the expected differences are significant (~10 psi). A quick review of the current main steam pressure header instruments (only 1 per unit) shows an average U1 header pressure of 788.6 psia and an average U2 header pressure of 801.5 psia. This also agrees with the assessment that difference expected steam generator outlet pressures are warranted.

EVALUATION OF UPRATE CONDITIONS
As discussed above, Westinghouse suggests steam generator outlet pressures will be higher in U2 than in U1 at the uprate conditions (which is in agreement with plant data). However, one recent development has indicated that this difference may not exist between the units – U1 Steam Generator Chemical Cleaning.

Chemical Cleaning of the U1 steam generators will occur in the fall 2008 outage. The U1 SGs were installed in the 1980s and have lost approximately 25 psi over that time period (due to fouling and aging). This is shown in thermal performance monitoring data over the previous 20+ years. It is expected that the chemical cleaning may add up to approximately 20 psi within three cycles. However, operating experience at other plants shows that this pressure change varies from full pressure recovery (for PB this would be ~25 psi) to a small loss of pressure after chemical cleaning. Assuming some amount of added pressure from the U1 steam generators chemical cleaning suggests the U1 system will have a SG outlet pressure much closer to U2 than originally expected.

Attachment C: DIT-PB-EPU-08-SSW-0012 (Reference 8.15-b)

FPL Energy

FPLE/PBNP EPU Project
Design Information Transmittal (DIT)

DESCRIPTION OF INFORMATION (CONTINUED)

RISKS
One major risk associated with maximizing expected turbine inlet conditions is if these conditions cannot be met. This will result in all four control valves at full open position. If RCS T_{ave} is unable to be increased further (i.e. already at 577° F), 100% reactor power will not be achievable. Some amount of margin should always be designed into the turbine inlet conditions. This will also allow for slow SG degradation as well as possible SG tube plugging (by slightly opening control valves and / or eventual increase of T_{ave}).

CONCLUSIONS
Based on the chemical cleaning of the U1 steam generator, it appears the design inputs to both U1 and U2 will be very similar. In developing the SG outlet pressure best estimates, additional operating margin has been developed into U1 (compared to U2) due to uncertainty with the steam generator chemical cleaning results. The best estimate of steam generator outlet pressure for both units is below.

Due to the inability to accurately predict the increased **U1** outlet pressure from chemical cleaning at the uprated conditions, a final best estimate SG outlet pressure of **802 psia** has been chosen. This is still greater than 25 psi above the RCS T_{ave} 573° F SG outlet pressure (for best case chemical cleaning results), but not greater than the 802 psia estimate at the RCS T_{ave} 577° F conditions (worse case chemical cleaning results).

For **U2**, the RCS T_{ave} of 576° F corresponds to a SG outlet pressure of **806 psia**. This gives approximately 7 psi of margin from the Westinghouse highest predicted steam generator pressure (T_{ave} of 577° F). Because this value has less uncertainty than U1 (no chemical cleaning), less margin is required and the 806 psia outlet pressure is appropriate.

DISTRIBUTION (Recipients should receive all attachments unless otherwise indicated. All attachments are uncontrolled unless otherwise indicated)

PREPARED BY (The Preparer and Approver may be the same person.)

Preparer Name	Position	Signature	Date
Jonathon E. Cross	EPU Project Engineer	Jonathon E. Cross	4/10/08

APPROVED BY (The cognizant Engineering Supervisor has release authority. Consult the Design Interface Agreement or local procedures to determine who else has release authority.)

Approver Name	Position	Signature	Date
Lawrence M. Tobin	EPU Project Engineering Supervisor	Lawrence M. Tobin	4/10/08

A copy of the DIT (along with any attachments not on file) will be maintained in the EPU Project file.

Attachment D: PBNP Modification Request, MR Number 87-053 (Reference 8.16)

OMPLETE 95-01

POINT BEACH NUCLEAR PLANT
MODIFICATION REQUEST

MR Number 87-053

Page 1 of 6

NOTE: Block numbers on this form correspond to paragraph numbers of Procedure QP 3-1. The use of black ink is required.

2.6 MODIFICATION REQUEST INITIATION

☐ UNIT 1 ☐ UNIT 2 ☒ COMMON FACILITIIES

System: Building structure Location: North Wall, 44' elev., PAB

Print Nos. N/A

Reason for Modification (Concise description of actual problem. List personnel hazards, ~~hazards, protection~~.

No WBJ

☒ Plant Betterment ☒ Safety Issue ☐ Regulatory Requirement ☐ ALARA

☐ Other (Specify)

Rad. waste steam valve SAI is extremely noisey and at present has noise absorbing material hanging from pipes (tied up with rope) ~~the~~ We want to put up wall for increased noise absorption and safety.

Proposed Change (Include sketches, effects on other components/systems, alternate approaches, installation/acceptance/completion date, if known.) Attach additional pages if needed.

1) Hang "Sound Stopper" QFM ~~are~~ sound absorption material on walls around the expansion valve. 2) Install a sound absorption wall around the valve area. Wall will have a door for easy access. All materials rated class one for flammability (~~see attached sketch~~)

QA KFG

Plant Condition Required ☐ Refueling ☐ CSD ☐ HSD ☐ Reduced Power ☐ Steam Out ☒ Other any condition

Initiated By [signature] Date

2.7 GROUP HEAD/SUPERVISOR Comments (include basis for due dates)

Priority: 1☐ 2☐ 3☐ 4☒ Required Due Date

☒ Recommended ☐ Not Recommended By [signature] Date 12/18/86

2.8 MODIFICATION ENGINEER

10CFR50.59 Review Required ☐ Yes ☒ No WBJ Initials

MICROFILMED FEB 10 1995

Form QP 3-1.3, Rev. 0

Attachment D: PBNP Modification Request, MR Number 87-053 (Reference 8.16)

POINT BEACH NUCLEAR PLANT MODIFICATION REQUEST	MR NUMBER 87-053	Page 5 of 6

3.15 FINAL DESIGN

SCOPE: THE PURPOSE OF THIS MOD IS TO REDUCE THE NOISE GENERATED BY THE SA-1 VALVE (RADWASTE STEAM SYS.) THIS WILL BE ACCOMPLISHED BY INSTALLING A MULTIPLE-STAGE ORIFICE PLATE DOWN STREAM OF SA-1. SEE THE ATTACHED ENGINEERING EVALUATION FOR JUSTIFICATION OF CHANGING THE ORIGINAL SCOPE OF THE MOD.

FINAL DESIGN DESCRIPTION:

INSTALL THE ORIFICE PLATE IMMEDIATELY DOWNSTREAM OF SA-1 VALVE. REROUTE SOME OF THE DOWNSTREAM PIPING TO PROVIDE A FLOW DEVELOPEMENT LENGTH PRIOR TO CHANGING DIRECTION OF FLOW. THE NEW PIPING RUN WAS ANALYZED BY NES,* AND NECESSARY SUPPORT CHANGES WERE INCORPORATED. ADDITIONAL INFORMATION (DESIGN INPUTS, DESIGN DESCRIPTIONS, & DESIGN DRAWINGS) ARE ATTACHED. THE INSTALLATION WILL NEED TO TAKE PLACE DURING A RADWASTE STEAM OUTAGE.

OUTPUT DOCUMENTS:

SK-87-053-01
SK-BLDG-087 SH. 1-3
SK-BLDG-088 SH 1-4
SK-BLDG-089 SH 1-3

* PIPING STRESS ANALYSIS AND SUPPORT QUALIFICATION REPORT; ASSENSION # 300042

Final design by [signature] Date 5/13/93

3.16 FINAL DESIGN REVIEW

	SIGNATURE	DATE	COMMENTS	
☒ MTN	John C. Palmer	5/27/93	☑ None	☐ Attached
☒ OPS	[signature]	6/3/93	☑ None	☐ Attached
☐ I&C			☐ None	☐ Attached
☐ SE			☐ None	☐ Attached
☑ QA	[signature]	5/17/93	☑ None	☐ Attached
☐ Other			☐ None	☐ Attached
☐ Other			☐ None	☐ Attached
☐ Other			☐ None	☐ Attached

(Attach Comments on Form QP 17-1.2)

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Form QP 3-1.3
Revision 7

135 0003

Attachment D: PBNP Modification Request, MR Number 87-053 (Reference 8.16)

Represented by:
LILLY ENGR CO 414-766-3762
BOX 391 KAUKAUNA, WI 54130

VALTEK CONTROL VALVES
Quotation
(vC2.10j)

Page #: 1
5-11
~~Fri Apr 21~~, 1989

Customer name: WISCONSIN ELECTRIC POWER CO.
Tag no.: ~~SAME AS~~ S/N 10469
Project: POINT BEACH NUCLEAR PLANT

Quote #: 890421-V6-GM
Disk ID: IIB
Record #: 6

Size/Trim: 3" / 1.62 CV: 62.0
Body Material: Carbon Steel
End connection: Butt weld

Model: Mark One
Pressure Class: 600#
Face to face: ISA Globe

Trim char.: Equal percent
Trim Type: Unbalanced (Class IV)
Seat ring: 316 SS Full bore stellite
Plug: 316 SS Full cont. stellite
Seat Retainer: 316 SS

Gaskets: AFG
Packing: AFPI (1200 PBI)
Lower Guide: Grafoil
Upper Guide: Grafoil

Bonnet: Standard
Bonnet flange: Carbon steel
Clamps,gld flg: Standard
Body bolting: Standard

Positioner: Beta Pneumatic

Actuator type: Cylinder
Air Action: Open
Flow direction: Over
Actuator size: 100 in)
Spring size: Standard
Spring action: Close
Tubing/Fitting: Standard
Air Supply: 60.0 (psig)
Signal: 3-15/ Throttling

Pipe (in/out): 3"/6"
Dnstrm schedule: 80

Other:
Plate: 6" 3 stage Rated CV is 120.0 (Required= 36.5)

	MAXIMUM	NORMAL	MINIMUM	
Temperature (F):	518.0	548.0		Fluid: STEAM
Upstream (psia):	795.0	1015.0		Molecular weight: 18.0
Intermediate (psia):	572.0	585.2		
Downstream (psia):	65.0	70.0		
Gas Flw(1000 Lb/hr):	35.0	35.0		
Pressure drop:	223.0	429.8		(Max press drop is 1000.0)
Choke Drop:	528.6	674.9		
Valve vel. Mach#:	0.104	0.103		
Pipe vel. Mach#:	0.248	0.233		
Valve Required Cv:	33.8	23.5		(Max CV is 62.0)
Total Noise (dBA):	83	86		
Warnings:				

Valve Options:
6" CARBON STEEL 3-STAGE MEGASTREAM plate
DOWNSTREAM OF 3" VALVE

Other Accessories:

Price is for 6" m/s plate
only for use with existing
3" Valve as noted above!!

MICROFILMED
FEB 10 1995

RECEIVED
MAY 15 1989
POINT BEACH

Sept '89
SS 600#
$544.
CS 600
$40

Price Each: ~~$2,999~~
Quantity: x 1
TOTAL: ~~$2,999~~

135 0000

Attachment D: PBNP Modification Request, MR Number 87-053 (Reference 8.16)

Represented by: LILLY ENGR CO 414-766-3762
BOX 391 KAUKAUNA, WI 54130

VALTEK CONTROL VALVES
Sizing Data
(vC2.10j)

Page #: 1

~~Tri Apr 21~~, 1989

Customer name: WISCONSIN ELECTRIC POWER CO.
Tag no.: ~~SAME AS~~ S/N 10469
Project: POINT BEACH NUCLEAR PLANT

Quote #: 890421-V6-GM
Disk ID: IIB
Record #: 6

Size/Trim: 3" / 1.62 CV: 62.0
Model: Mark One
Pressure Class: 600#
Packing: AFPI (1200 PBI)
Trim char.: Equal percent
Trim Type: Unbalanced (Class IV)

Pipe (in/out): 3"/6"
Dnstrm schedule: 80

Actuator size: 100 in)
Air Action: Open
Flow direction: Over
Spring action: Close
Spring size: Standard

Air Supply: 60.0 (psig)
Signal: 3-15/ Throttling

Plate: 6" 3 stage Rated CV is 120.0 (Required= 36.5)

	MAXIMUM	NORMAL	MINIMUM	
Temperature (F):	518.0	548.0		Fluid: STEAM
Upstream (psia):	795.0	1015.0		Molecular weight: 18.0
Intermediate (psia):	572.0	585.2		
Downstream (psia):	65.0	70.0		
Gas Flw(1000 Lb/hr):	35.0	35.0		
Compressibility (z):	0.860	0.834		
Valve Xt:	0.700	0.700		
Pressure drop:	223.0	429.8		(Max press drop is 1000.0)
Choke Drop:	528.6	674.9		
Valve vel. Mach#:	0.104	0.103		
Pipe vel. Mach#:	0.248	0.233		
Valve Required Cv:	33.8	23.5		(Max CV is 62.0)
Percent open:	84%	75%		
Valve noise (dBA):	79	84		
Total Noise (dBA):	83	86		
Warnings:				
:				

3-Stage Face To Face 2.38

6" Plate Stage 3:	2.20:1	2.20:1	:1	(Req CV is 40.5/208.0)
6" Plate Stage 2:	2.00:1	2.00:1	:1	(Req CV is 93.4/208.0)
6" Plate Stage 1:	2.00:1	1.90:1	:1	(Req CV is 190.0/208.0)
Plate Vel. Mach#:	0.248	0.233		
Plate Noise (dBA):	82	82		

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FEB 10 1995

Attachment D: PBNP Modification Request, MR Number 87-053 (Reference 8.16)

ENGINEERING EVALUATION

MR 87-053 proposes to reduce the noise levels at/near the radwaste steam valve (PCV-SA1) in the 'basketball court' area of the PAB. The noise from this system is apparently due to a number of causes. The main cause, most likely, is the extreme pressure drop that occurs across the valve. This results in 'choked flow', which means flow reaches sonic velocity at the vena contracta. As this sonic flow slows down and mixes with the normal-velocity fluid somewhere downstream, it creates shock waves. The shock waves can fluctuate in intensity and position which create vibrations and ultimately noise. The piping configuration also contributes to this problem. An abrupt change in flow direction just downstream of the valve causes the steam flow to impinge directly on the pipe. This can create a fluctuating force which causes pipe vibrations and noise. The concrete wall immediately behind the valve and piping compounds the problem by reflecting sound back into the PAB. Since a pipe will transmit and direct any disturbance within it, it tends to act as a line source, giving out sound along it's length. This can be evidenced by the fact that considerable noise can still be heard from this pipe after it enters the U2 facade, about 25' downstream of the valve.

A number of options exist to solve this problem.

1) Change the trim on the control valve to employ 'hush' trim. This trim drops the pressure in steps, thereby better controlling velocity, turbulence, and noise. (See the attached literature from Lilly Engineering.) This option, however, would require changing the valve body size to 4" and cost $12-15 K, including installation.

2) Install a Megastream Plate downstream of the existing valve (see attached literature from Lilly). The plate incorporates a series of stages, which controls downstream turbulence by absorbing a portion of the pressure drop through its multiple orifices. Installing the plate would require replacing some of the downstream piping. Since the flow direction change also contributes to this problem, also lengthen the straight run immediately downstream of the valve would allow more turbulence to dissipate before impinging on the elbow. This would tend to make the entire system more quiet and would cost approximately $15 K, including installation.

3) Build a sound absorbing wall around the valve and adjoining piping as originally proposed with the mod. Any materials used would have to have Class I fire ratings. With this configuration, the enclosure would still be open on top and would not provide noise attenuation for the majority of the downstream piping. It would also need to be seismically mounted and would greatly restrict access to the valve and adjoining equipment.

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Attachment D: PBNP Modification Request, MR Number 87-053 (Reference 8.16)

ENGINEERING EVALUATION (cont.)

4) Build a small sound absorbing enclosure immediately around the valve and install 'Muffl-Lag' insulation on the downstream piping up to the facade wall. All materials would need to have Class I fire rating. This would probably not be very effective right at the valve since sound is being generated downstream of the valve, and would also not affect noise levels in the facade.

Options 3 and 4 both treat the symptoms while Option 1 and 2 actually treat the cause. Option 1 or 2 will make the entire system more quiet (reducing noise in the facade also). Although Options 1 and 2 are more expensive, I would recommend pursuing one of these in order to correct the root cause of the problem.

Option 2 may cost slightly more than option 1, but it will also make the entire system more quiet than option 1. Although we do not have specific experience with the Megastream plate, it operates on the same basic principal as the 'hush' trim. We have installed the 'hush' trim on the SGBD pressure reducing valves, with good success, and see no reason why the plate wouldn't work equally as well.

Therefore, it is recommended that we pursue Option #2.

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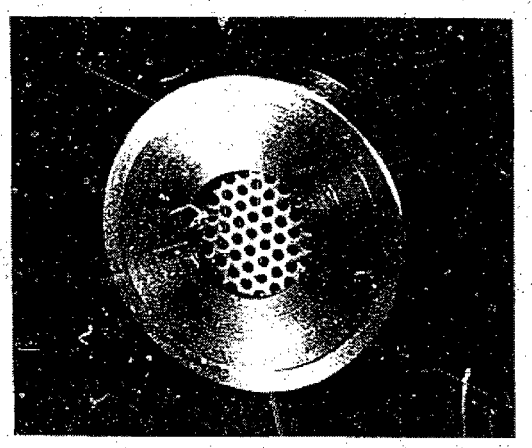
FEB 10 1995

Attachment D: PBNP Modification Request, MR Number 87-053 (Reference 8.16)

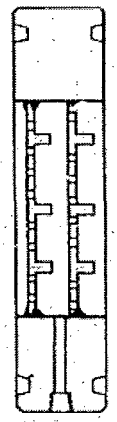
Gaseous Noise Reduction



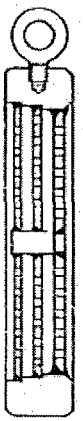
MEGASTREAM PLATES

Similar in many respects to a Megastream attenuator, Megastream resistance plates are installed between raised face flanges downstream from a Valtek control valve. Each plate incorporates a series of stages. To control downstream line turbulence, each stage absorbs a portion of the pressure drop through its many mutiple orifices.

Megastream plates are designed for each individual application, providing SPL reductions of up to 15 dBA. Depending on the type of gas and the pressure drop ratio, these plates may require one to four stages.



Two-stage plate with drain.



Three-stage plate with lifting lug.

Standard Megastream plates, both the housing and perforated hole plate stages, are constructed from carbon steel. However, two optional constructions are also available: (1) 304 stainless steel for both the housing and stages; (2) 304 stainless steel for the stages and carbon steel for the housing. Large plates are available with lifting lugs.

Typical Megastream plate applications include gas pressure reducing stations, gas vents and flare systems.

Megastream Plate Specifications

Body Style:	Flangeless wafer, flanged wafer
Sizes:	1.5 - 24 inch
Rating:	ANSI 150-600, 900, 1500, 2500
Flow Direction:	One way only
Standard Hole Size:	0.19 in. dia.
Valve Recovery Factor (F_L):	0.8 for single stage, 0.9 for multi-stage
Materials of Construction:	Carbon steel (standard) and 304 stainless steel (optional). Both come standard with 304 stainless steel plates.

Megastream Plate C_V

SIZE	1 STAGE	2 STAGE	3 STAGE
1.5	13	8	6
2	23	15	11
3	52	34	26
4	92	60	46
6	208	136	104
8	371	243	185
10	580	380	290
12	835	547	417
14	1136	774	568
16	1484	972	742
18	1879	1231	939
20	2320	1520	1160
24	3340	2188	1670

NOTE: All values shown at maximum C_V per given size; reduced C_V's are available upon request. C_V data determined with standard 0.19 in. dia. hole size; varying hole sizes will change the above values.

FEB 1 0 1987

Attachment D: PBNP Modification Request, MR Number 87-053 (Reference 8.16)

FINAL DESIGN DESCRIPTION FOR MR 87-053

References:

P&ID: PBM-227

Construction Specification: Stone & Webster Job # 12137

Piping Classes: S&W SA-601 (up to and including valve SA-1)
S&W SA-151 (downstream of SA-1)

Codes and Standards: B31.1 (piping)
B16.5 (flanges)

Vendor Info and Calculations (see attached)

Design Inputs

This mod proposes to install a three stage orifice plate downstream of SA-1 in order to reduce the noise generated by this valve. The Megastream Plate operates on the multiple orifice principle. This plate actually provides a back pressure on the valve thereby not allowing the sharp pressure drop at the vena contracta. It then takes the remaining pressure drop gradually in stages. This maintains velocities at more reasonable levels and thereby simply does not generate high noise levels. The plate also divides the flow into many smaller flow streams which reduces turbulent energy and ultimately noise. The plate is constructed of stainless steel body and stages, to prevent any potential for wear. The valve and orifice vendor used operating data to predict the effectiveness of the orifice plate. Per their calculations, the orifice plate should reduce the noise generated from 103 dBA to about 85 dBA. The orifice was sized so as to not impact flow capacity of this system.

Another prime suspect of the noise problems for this system, was the fact that the piping changed direction immediately downstream of the valve. Steam impinging on the pipe elbow causes additional vibration and noise. This design will add a straight run of piping approximately 10 pipe diameters long, immediately downstream of the orifice plate. This will allow the flow to more fully develop before changing direction, which should assist in reducing noise in the system.

One additional piping system change will be the removal of two 45° turns. This is necessary in order to achieve the straight piping length downstream of the valve and to address some field installation concerns. The 45° turns will be replaced using a 90° long radius elbow. The overall effect on system pressure drop will be insignificant, based on the long remaining run and the small contribution of that one fitting to the overall system pressure drop.

FEB 10 1988

Attachment D: PBNP Modification Request, MR Number 87-053 (Reference 8.16)

The pressure class transition point is presently at the SA-1 valve. In the proposed configuration, the orifice will provide backpressure for the valve, and will then see the majority of the pressure drop. Therefore, the pressure class transition point will change to be at the orifice. All piping components between the valve and the orifice will meet the requirements of the higher pressure piping class.

A number of components will attempt to be reused during the installation of this modification. Any portion of the existing system will be inspected prior to reuse. In particular, the elbow immediately downstream of the valve, if intended for reuse, will be UT'd to ensure sufficient wall thickness remains. If there is evidence of erosion damage, ISI will be consulted to determine the applicability of reusing the piece, adding the system to an inservice plan, etc. ISI has previously checked a couple components in the radwaste steam system and erosion has not been a concern. Therefore, erosion problems are not expected but will still be checked for.

The radwaste steam system downstream of SA-1 is categorized non-QA and non-seismic, and is outside the realm of ASME Section XI. Supporting requirements were determined by the Stress Analysis Group (Milw.), per Piping Stress Analysis and Support Qualification Report, Assension #300042. The support changes are detailed in attached sketches SK-BLDG-087, -088, -089, with an overall piping isometric on PBA-3042.

Cable trays in the immediate vicinity of this radwaste steam line, come from U2 containment, and have the potential for containing some safety related cables. However, using SQUG methodology, the potential for seismic interaction of this piping system with nearby cable trays is not significant/credible. This is based on earthquake experience data for flexibly supported, welded steel pipe, with sufficient spacing between the pipe and cable tray. The only credible failure of the proposed change would be a steam leak from the pipe (most likely at the flanged connections). While the potential for this is slightly increased (flanges vs. welds), the consequences would be no different than they would have been with the previous installation. A leak at the flange, by inspection, would not pose a hazard to the cables above.

Original design code for this piping system was B31.1-1967. The new portions of the system can be installed and inspected per B31.1-1986, to utilize present-day technology and techniques. Any materials ordered for this mod can use present day material specs.

The original piping specification for this system required 100% radiography and surface exams for Class 601 (which will be up to and including the new orifice). For Class 151 piping (downstream of the new orifice), 10% radiography and 100% surface exams will be required. A hydro of this steam line is not practical because there are no drain points inside the isolation boundary and this would introduce potential for water hammer in the system. Therefore, an initial service leak check will be performed on all of the new welds.

FEB 10 1995

Attachment E: Valtek Catalog Excerpts (Reference 8.17)

VALTEK

Sizing & Selection

Control Valve Cv

TABLE OF CONTENTS

Sub-section	Table	Valve Type	Rating	Characteristic	Flow
4-1	1	Mark One, unbalanced	150-600	Equal Percentage	Over
	2	Mark One, unbalanced	150-600	Equal Percentage	Under
	3	Mark One, unbalanced	150-600	Linear	Over
	4	Mark One, unbalanced	150-600	Linear	Under
	5	Mark One, unbalanced	150-600	Quick Open	Over
	6	Mark One, unbalanced	150-600	Quick Open	Under
4-2	1	Mark One, unbalanced	900-1500	Equal Percentage	Over
	2	Mark One, unbalanced	900-1500	Equal Percentage	Under
	3	Mark One, unbalanced	900-1500	Linear	Over
	4	Mark One, unbalanced	900-1500	Linear	Under
	5	Mark One, unbalanced	900-1500	Quick Open	Over
	6	Mark One, unbalanced	900-1500	Quick Open	Under
4-3	1	Mark One, unbalanced	2500	Equal Percentage	Over
	2	Mark One, unbalanced	2500	Equal Percentage	Under
	3	Mark One, unbalanced	2500	Linear	Over
	4	Mark One, unbalanced	2500	Linear	Under
	5	Mark One, unbalanced	2500	Quick Open	Over
	6	Mark One, unbalanced	2500	Quick Open	Under
4-4	1	Mark One, pressure-balanced	150-600	Equal Percentage	Over
	2	Mark One, pressure-balanced	150-600	Equal Percentage	Under
	3	Mark One, pressure-balanced	150-600	Linear	Over
	4	Mark One, pressure-balanced	150-600	Linear	Under
4-5	1	Mark One, pressure-balanced	900-1500	Equal Percentage	Over
	2	Mark One, pressure-balanced	900-1500	Equal Percentage	Under
	3	Mark One, pressure-balanced	900-1500	Linear	Over
	4	Mark One, pressure-balanced	900-1500	Linear	Under
4-6	1	Mark One, pressure-balanced	2500	Equal Percentage	Over
	2	Mark One, pressure-balanced	2500	Equal Percentage	Under
	3	Mark One, pressure-balanced	2500	Linear	Over
	4	Mark One, pressure-balanced	2500	Linear	Under
4-7	1	Mark One, 3-Way	150-600	Linear	Diverging
	2	Mark One, 3-Way	150-600	Linear	Converging

Attachment E: Valtek Catalog Excerpts (Reference 8.17)

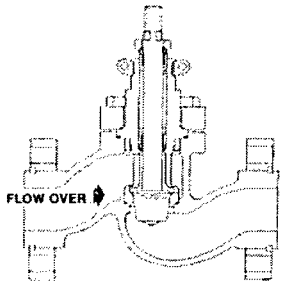


Table 1

Sub-section 4-1
Table 1

Valve Type: Mark One, Unbalanced
Body Rating: Class 150-600
Trim Characteristics: Equal Percentage

Flow Direction: Flow Over

Note: *All Cv values are shown at 100% open. For each valve size below the full area values are shaded. Reduced trim values follow, in descending order.*

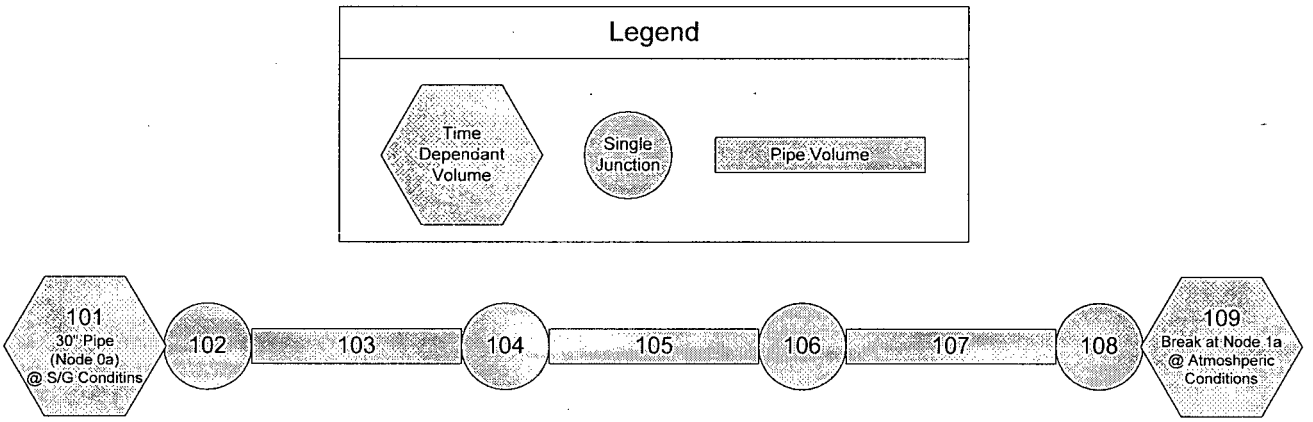
SIZE	TRIM NO	STROKE	F_L	C_v AT PERCENT OPEN 100	90	80	70	60	50	40	30	20	10	SEAT AREA
.50	.50	.75	.83	4.5	3.7	2.8	2.1	1.5	1.0	.70	.48	.32	.22	.20
	.38	.75	.82	3.3	2.4	1.7	1.2	.85	.58	.40	.27	.18	.13	.11
	.31	.75	.81	2.5	1.8	1.3	.87	.60	.41	.28	.19	.13	.089	.076
	.25A	.75	.81	1.7	1.2	.83	.57	.38	.27	.18	.12	.082	.056	.049
	.25B	.75	.82	1.1	.80	.58	.39	.23	.16	.10	.074	.059	.045	.049
	.12A	.50	.81	.55	.35	.22	.15	.11	.072	.054	.038	.027	.019	.012
.75	.72	.75	.85	8.1	7.3	5.8	4.2	3.0	2.1	1.4	.98	.67	.40	.41
	.62	.75	.83	7.5	6.1	4.5	3.3	2.3	1.6	1.1	.74	.51	.34	.31
	.50	.75	.82	5.8	4.3	3.1	2.2	1.5	1.0	.71	.48	.32	.22	.20
	.38	.75	.82	3.7	2.6	1.9	1.3	.85	.59	.40	.27	.18	.13	.11
	.31	.75	.82	2.8	1.9	1.3	.89	.60	.41	.28	.19	.13	.089	.076
	.25A	.75	.81	1.8	1.2	.84	.57	.39	.27	.18	.12	.082	.056	.049
	.25B	.75	.81	1.1	.81	.59	.39	.23	.16	.10	.074	.059	.045	.049
	.12A	.50	.82	.56	.35	.22	.15	.11	.072	.054	.038	.027	.019	.012
1.00	.91	.75	.87	11	9.7	7.5	5.4	3.6	2.7	1.8	1.2	.85	.58	.52
	.72	.75	.85	10	8.4	6.1	4.4	3.1	2.1	1.5	.99	.67	.46	.41
	.62	.75	.83	8.9	6.7	4.8	3.4	2.3	1.6	1.1	.75	.51	.35	.31
	.50	.75	.82	6.4	4.5	3.2	2.2	1.5	1.0	.71	.48	.32	.22	.20
	.38	.75	.82	3.9	2.7	1.9	1.3	.87	.59	.40	.27	.18	.13	.11
	.31	.75	.81	2.9	1.9	1.3	.89	.61	.41	.28	.19	.13	.089	.076
	.25A	.75	.81	1.9	1.2	.85	.58	.39	.27	.18	.12	.082	.056	.049
	.25B	.75	.81	1.1	.82	.59	.39	.23	.16	.10	.074	.059	.045	.049
	.12A	.50	.81	.56	.35	.22	.15	.11	.072	.054	.038	.027	.019	.012
1.50	1.25	1.00	.88	27	23	21	14	9.1	6.5	4.3	3.0	2.0	1.4	1.23
	1.00	.75	.85	24	20	14	9.1	6.1	4.2	2.8	1.9	1.3	.88	.79
	.81	.75	.82	18	13	8.9	6.0	4.1	2.8	1.9	1.3	.86	.59	.52
	.62	.75	.83	11	7.7	5.2	3.6	2.4	1.7	1.1	.76	.51	.35	.31
	.38	.75	.79	4.2	2.8	1.9	1.3	.88	.60	.40	.27	.18	.13	.11
2.00	1.62	1.50	.88	54	47	33	22	16	11	7.5	5.1	3.4	2.3	2.06
	1.25	1.00	.87	35	31	22	14	9.6	6.6	4.4	3.0	2.0	1.4	1.23
	1.00	.75	.85	29	21	15	9.3	6.2	4.2	2.9	1.9	1.3	.88	.79
	.81	.75	.82	19	14	9.0	6.0	4.1	2.8	1.9	1.3	.86	.58	.52
	.62	.75	.79	11	7.8	5.3	3.6	2.4	1.7	1.1	.76	.51	.35	.31
	.38	.75	.79	4.2	2.9	1.9	1.3	.88	.60	.40	.27	.18	.13	.11
3.00	2.62	2.00	.97	128	106	86	69	41	28	19	13	9.0	6.1	5.30
	2.25	2.00	.93	81	67	56	42	25	17	11	7.7	5.2	3.5	3.14
	1.62	1.50	.91	62	52	38	24	16	11	7.5	5.1	3.5	2.3	2.06
	[illegible]	[illegible]	.78	38	33	23	14	9.7	6.6	4.5	3.0	2.0	1.4	1.23
4.00	3.50	2.50	.88	210	180	150	110	74	50	34	23	16	11	9.62
	2.62	2.00	.82	137	115	101	69	48	29	20	13	8.6	6.1	5.30
	2.25	2.00	.83	106	80	69	41	28	21	14	9.8	6.6	4.6	3.88
	1.62	1.50	.79	70	54	38	24	16	11	7.5	5.1	3.5	2.3	2.06
6.00	5.00	3.00	.85	431	378	309	236	179	103	69	48	32	22	19.63
	3.50	2.50	.83	261	210	163	128	77	51	35	24	16	11	9.62
	3.00	2.00	.81	192	154	121	102	61	38	26	17	12	8.0	7.07
	2.62	2.00	.79	152	121	100	70	42	29	20	13	9.0	6.1	5.30
8.00	6.25	4.00	.86	883	593	477	367	251	159	109	75	51	34	30.68
	5.00	3.00	.80	605	419	330	253	187	105	70	48	32	22	19.63
	3.50	2.50	.83	272	217	172	132	78	51	35	24	16	11	9.62
	2.62	2.00	.82	154	126	109	70	43	29	20	13	9.0	6.1	5.30
10.00	8.00	4.00	.85	1120	990	820	646	486	242	176	122	83	57	50.27
	6.25	4.00	.82	800	661	515	403	281	162	110	75	51	34	30.68
	5.00	3.00	.83	538	424	342	278	192	106	71	48	33	22	19.63
12.00	9.50	4.00	.85	1470	1350	1190	990	750	555	396	177	117	79	70.88
	7.38	4.00	.82	1080	910	730	555	433	250	154	105	70	48	42.78
	6.25	4.00	.83	840	680	526	409	263	163	111	75	51	34	30.68
14.00	11.00	4.00	.85	1870	1770	1600	1400	1150	870	622	451	173	106	95.03
	8.00	4.00	.83	1300	1100	890	680	502	348	176	123	83	57	50.27
	6.25	4.00	.82	870	697	535	414	265	164	111	75	51	34	30.68

Attachment F: RELAP Output File – Hot Shut-Down Conditions

RELAP Files:

Description	File Name	Size	Date
RELAP input file – Hot Shutdown	POINTBEACH_HotSD.inp	4 KB	8/29/2008
RELAP output file – Hot Shutdown	PB_HotSD.out	395 KB	8/29/2008

The following pages show the output file created by the RELAP program. The output file includes the input file code it is created from.



Attachment F: RELAP Output File - Hot Shut Down Conditions

```
1    RBIC/3.3            RELAP5 Based Integrated Code
  Copyright (C) 2001  Information Systems Laboratories, Inc.
0Execute file: \\SNLVS5\SYS3\OPS$\REL459331\RELAP5
0Effective command line parameters:
   -f ftb1                                                                    -i POINTBEACH_HotSD.inp
   -o PB_HotSD.out                                                            -p plotfl
   -r []                                                                      -s stripf
   -j jbinfo                                                                  -n null
   -c cdffile                                                                 -a coupfl
   -X                                                                         -C 0
   -A dumpfil1                                                                -B dumpfil2
   -S snapdata                                                                -P 5009
   -O                                                                         -R []
   -w [ tpfh2o]                                                               -d [ tpfd2o]
   -h [ tpfh2]                                                                -l [ tpfli]
   -k [ tpfk]                                                                 -b [ tpfhe]
   -e [ tpfn2]                                                                -m [ tpfna]
   -q [ tpfnak]                                                               -t [ tpflipb]
   -u [ tpfnh3]                                                               -W [ tpfh2on]
   -g [ tpfglyc]                                                              -H [ tpfblood]
   -Z [ tpfh2onew]

   [] = tentative file name (may be overridden by input data)

0Environmental library version number is: 3.3
0Table of update define values
 apollo   off        blkdta   off        bufr     off        cdccra   off        cos      off
 cray     off        ctss     off        debth    off        decalp90 off        decalpha off
 decrisc  off        decrisc2 off        erf      on         extjun   off        extj20   off
 extsys   off        extvol   off        extv20   off        extv100  off        fourbyt  on
 hp       off        ibm      off        ibmrisc  off        ieee     off        in32     on
 laheyf77 off        lcm      off        makemap  off        nanscr   off        nopen    off
 npa      off        nreac    off        ploc     on         pvmcoupl off        readnonb off
 selap    off        sgi      off        sun      off        unicos   off        unix     on
 vax      off        win32cvf on
 listing of input data for case  1

     1    = POINT BEACH HELB - Hot Shutdown, 99.75% quality steam
     2    ************************************************************
     3    *
     4    ************************************************************
     5    *
     6    100 new transnt
     7    101 run
     8    102 british british
     9    110 air
    10    201 7.0 1.0-7 0.01 15003 10 1000 100000
    11    301 mflowj 108000000
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
12    ************************************************************
13    *
14    ***************HYDRODYNAMIC COMPONENTS********************
15    *
16    ************************************************************
17    * STEAM GENERATOR CONDITIONS
18    * TIME-DEPENDENT VOLUME 101
19    *
20    1010000 "S/G" tmdpvol
21    1010101 100.0 10.0 1000.0 0.0 0.0 0.0 0.00015 0.0 0.0
22    1010200 2
23    1010201 0.0 1020.1 0.9975
24    1010202 7.0 1020.1 0.9975
25    ************************************************************
26    * LOSSES FROM 30" TO 3" PIPE (FWD ONLY), + VALVE LOSS
27    * SINGLE JUCTION 102
28    *
29    1020000 "LOSS" sngljun
30    1020101 101010002 103010001 0.05130 1.144 0.144 00001000
31    1020201 1 0.0 0.0 0.0
32    ************************************************************
33    * PIPE FROM 30" to 3"
34    * PIPE 103
35    *
36    1030000 "MISC" pipe
37    1030001 75
38    1030101 0.05130 75
39    1030301 0.89583 4
40    1030302 0.66667 7
41    1030303 0.81845 14
42    1030304 0.85897 27
43    1030305 0.80417 32
44    1030306 0.86944 47
45    1030307 0.94167 67
46    1030308 0.87500 75
47    1030601 90.0 4
48    1030602 0.0 7
49    1030603 -90.0 14
50    1030604 0.0 27
51    1030605 -90.0 32
52    1030606 0.0 47
53    1030607 -90.0 67
54    1030608 0.0 75
55    1030801 0.00015 0.0 75
56    1030901 0.0 0.0 3
57    1030902 0.171 0.171 4
58    1030903 0.0 0.0 6
59    1030904 0.171 0.171 7
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
1030905 0.0 0.0 13
1030906 0.171 0.171 14
1030907 0.0 0.0 26
1030908 0.171 0.171 27
1030909 0.0 0.0 31
1030910 0.171 0.171 32
1030911 0.0 0.0 46
1030912 0.171 0.171 47
1030913 0.0 0.0 66
1030914 0.171 0.171 67
1030915 0.0 0.0 74
1031001 0000000 75
1031101 00001000 74
1031201 2 1020.1 0.9975 0.0 0.0 0.0 75
1031300 1
1031301 0.0 0.0 0.0 74
*********************************************************
* 60  DEG BEND @ EL. 63'-0"
* SINGLE JUNCTION 104
* JUNCTION INCLUDES 60 DEG BEND
*
1040000 "60DEG" sngljun
1040101 103750002 105010001 0.05130 0.1336 0.1336 00001000
1040201 1 0.0 0.0 0.0
*********************************************************
* PIPE FROM
* PIPE 105
*
1050000 "3PIPE" pipe
1050001 92
1050101 0.05130 92
1050301 0.88889 90
1050302 0.77083 92
1050601 0.0 92
1050801 0.00015 0.0 92
1050901 0.0 0.0 89
1050902 0.171 0.171 90
1050903 0.0 0.0 91
1051001 0000000 92
1051101 00001000 91
1051201 2 1020.1 0.9975 0.0 0.0 0.0 92
1051300 1
1051301 0.0 0.0 0.0 91
*********************************************************
* SINGLE JUNCTION 106
* ELBOW @ EL. 62'-9"
*
1060000 "ELBOW" sngljun
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
108    1060101 105920002 107010001 0.05130 0.171 0.171 00001000
109    1060201 1 0.0 0.0 0.0
110    ************************************************************
111    * PIPE UP TO 1A
112    * PIPE 107
113    *
114    1070000 "1A" pipe
115    1070001 39
116    1070101 0.05130 39
117    1070301 0.84954 18
118    1070302 0.81944 36
119    1070303 0.76389 39
120    1070601 0.0 18
121    1070602 -90.0 36
122    1070603 0.0 39
123    1070801 0.00015 0.0 39
124    1070901 0.0 0.0 17
125    1070902 0.171 0.171 18
126    1070903 0.0 0.0 35
127    1070904 0.171 0.171 36
128    1070905 0.0 0.0 38
129    1071001 0000000 39
130    1071101 00001000 38
131    1071201 2 1020.1 0.9975 0.0 0.0 0.0 39
132    1071300 1
133    1071301 0.0 0.0 0.0 38
134    ************************************************************
135    * SINGLE JUNCTION 108
136    * BREAK AT NODE 1A
137    *
138    1080000 "1A" sngljun
139    1080101 107390002 109010001 0.05130 0.171 0.171 00000100
140    1080201 1 0.0 0.0 0.0
141    ************************************************************
142    * BREAK 1A - RELEASE TO CCWHX ROOM
143    * TIME-DEPENDENT VOLUME 109
144    *
145    1090000 "ATM" tmdpvol
146    1090101 100.0 10.0 1000.0 0.0 0.0 0.0 0.00015 0.0 0.0
147    1090200 4
148    1090201 0.0 14.7 70.0 0.999
149    1090202 7.0 14.7 70.0 0.999
150    ************************************************************
151    .end
0   RBIC/3.3            RELAP5 Based Integrated Code
0 Copyright (C) 2001  Information Systems Laboratories, Inc.
   POINT BEACH HELB - Hot Shutdown, 99.75% quality steam                    29-Aug-08    20:04:51
1  RELAP5/3.3            Reactor Loss Of Coolant Analysis Program
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
  Copyright (C) 2001  Information Systems Laboratories, Inc.
   POINT BEACH HELB - Hot Shutdown, 99.75% quality steam                          29-Aug-08    20:04:51
0Processing type is new
+                                        problem option is transnt
0inp-chk, run option is run.
0Option 60 modifies time step control for Courant limit.
0Option 60 is turned on automatically now.
0Input units are assumed british      output units are british
0Remaining cpu time values are   1.0     and   2.0     sec.
0                                        Time step control data
     end time         min.time step    max.time step  option   minor edit   major edit     restart
     (sec)            (sec)            (sec)                    frequency    frequency    frequency
     7.000000E+00     1.000000E-07     1.000000E-02    15003          10         1000       100000
0         Minor edit requests
 req.num.    variable code    parameter
      301      mflowj         108000000
0 Noncondensible species, initial mass fraction:
     air         1.00000
0Gravitational constant is   32.1740
0                                        Edit of component input data
                 (quantities printed are input values, set by default, or set by error recovery)
0=========================================================================
                      Input data for component 101, S/G      tmdpvol , having   1 volumes and   0 junctions
0  Vol no.     flow area        flow length      volume           horiz. angle     vert. angle      elev. chng.
               (ft2)            (ft)             (ft3)            (deg)            (deg)            (ft)
 101010000      100.000          10.0000          1000.00          0.00000          0.00000          0.00000
0  Vol.no.     roughness        hydraulic diam.  vol-flag
               (ft)             (ft)             tlpvbfe
 101010000     1.500000E-04      11.2838          0011000
0Tabular data
      time            pressure        quality
      (sec)           (lbf/in2)


      0.00000         1020.10        0.997500
      7.00000         1020.10        0.997500
0=========================================================================
                      Input data for component 102, LOSS     sngljun , having   0 volumes and   1 junctions
0  Jun.no. from vol.   to vol.  jun. area     jun-flag  subcooled     two-phase     superheated
                               (ft2)         jefvcahs  dschg. coef.  dschg. coef.  dschg. coef.
 102000000 1010100002 103010001  5.130000E-02  00001000  1.000000E+00  1.400000E-01  0.000000E+00
0  Jun.no.     forward loss    forward loss    forward loss    reverse loss    reverse loss    reverse loss
               coefficient     multiplier      exponent        coefficient     multiplier      exponent
 102000000     1.144000E+00    0.000000E+00    0.000000E+00    1.440000E-01    0.000000E+00    0.000000E+00
0  Jun.no.                         junction diam.   beta factor      gas intercept    slope
                                   (ft)
 102000000                         2.555723E-01     0.000000E+00     1.000000E+00     1.000000E+00
0  Jun.no.                         init. liq. flow  init. vap. flow
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
                                    (lbm/sec)        (lbm/sec)
 102000000                        0.000000E+00     0.000000E+00
0=====================================================================
                      Input data for component 103, MISC     pipe    , having  75 volumes and  74 junctions
0  Vol no.    volume        angle 1       angle 2       angle 3      vol-flag
              (ft3)         (deg)         (deg)         (deg)         tlpvb_e
 103010000    4.5956E-02     0.000         90.00         0.000        0000000
 103020000    4.5956E-02     0.000         90.00         0.000        0000000
 103030000    4.5956E-02     0.000         90.00         0.000        0000000
 103040000    4.5956E-02     0.000         90.00         0.000        0000000
 103050000    3.4200E-02     0.000         0.000         0.000        0000000
 103060000    3.4200E-02     0.000         0.000         0.000        0000000
 103070000    3.4200E-02     0.000         0.000         0.000        0000000
 103080000    4.1986E-02     0.000        -90.00         0.000        0000000
 103090000    4.1986E-02     0.000        -90.00         0.000        0000000
 103100000    4.1986E-02     0.000        -90.00         0.000        0000000
 103110000    4.1986E-02     0.000        -90.00         0.000        0000000
 103120000    4.1986E-02     0.000        -90.00         0.000        0000000
 103130000    4.1986E-02     0.000        -90.00         0.000        0000000
 103140000    4.1986E-02     0.000        -90.00         0.000        0000000
 103150000    4.4065E-02     0.000         0.000         0.000        0000000
 103160000    4.4065E-02     0.000         0.000         0.000        0000000
 103170000    4.4065E-02     0.000         0.000         0.000        0000000
 103180000    4.4065E-02     0.000         0.000         0.000        0000000
 103190000    4.4065E-02     0.000         0.000         0.000        0000000
 103200000    4.4065E-02     0.000         0.000         0.000        0000000
 103210000    4.4065E-02     0.000         0.000         0.000        0000000
 103220000    4.4065E-02     0.000         0.000         0.000        0000000
 103230000    4.4065E-02     0.000         0.000         0.000        0000000
 103240000    4.4065E-02     0.000         0.000         0.000        0000000
 103250000    4.4065E-02     0.000         0.000         0.000        0000000
 103260000    4.4065E-02     0.000         0.000         0.000        0000000
 103270000    4.4065E-02     0.000         0.000         0.000        0000000
 103280000    4.1254E-02     0.000        -90.00         0.000        0000000
 103290000    4.1254E-02     0.000        -90.00         0.000        0000000
 103300000    4.1254E-02     0.000        -90.00         0.000        0000000
 103310000    4.1254E-02     0.000        -90.00         0.000        0000000
 103320000    4.1254E-02     0.000        -90.00         0.000        0000000
 103330000    4.4602E-02     0.000         0.000         0.000        0000000
 103340000    4.4602E-02     0.000         0.000         0.000        0000000
 103350000    4.4602E-02     0.000         0.000         0.000        0000000
 103360000    4.4602E-02     0.000         0.000         0.000        0000000
 103370000    4.4602E-02     0.000         0.000         0.000        0000000
 103380000    4.4602E-02     0.000         0.000         0.000        0000000
 103390000    4.4602E-02     0.000         0.000         0.000        0000000
 103400000    4.4602E-02     0.000         0.000         0.000        0000000
 103410000    4.4602E-02     0.000         0.000         0.000        0000000
 103420000    4.4602E-02     0.000         0.000         0.000        0000000
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

103430000	4.4602E-02	0.000	0.000	0.000	0000000
103440000	4.4602E-02	0.000	0.000	0.000	0000000
103450000	4.4602E-02	0.000	0.000	0.000	0000000
103460000	4.4602E-02	0.000	0.000	0.000	0000000
103470000	4.4602E-02	0.000	0.000	0.000	0000000
103480000	4.8308E-02	0.000	-90.00	0.000	0000000
103490000	4.8308E-02	0.000	-90.00	0.000	0000000
103500000	4.8308E-02	0.000	-90.00	0.000	0000000
103510000	4.8308E-02	0.000	-90.00	0.000	0000000
103520000	4.8308E-02	0.000	-90.00	0.000	0000000
103530000	4.8308E-02	0.000	-90.00	0.000	0000000
103540000	4.8308E-02	0.000	-90.00	0.000	0000000
103550000	4.8308E-02	0.000	-90.00	0.000	0000000
103560000	4.8308E-02	0.000	-90.00	0.000	0000000
103570000	4.8308E-02	0.000	-90.00	0.000	0000000
103580000	4.8308E-02	0.000	-90.00	0.000	0000000
103590000	4.8308E-02	0.000	-90.00	0.000	0000000
103600000	4.8308E-02	0.000	-90.00	0.000	0000000
103610000	4.8308E-02	0.000	-90.00	0.000	0000000
103620000	4.8308E-02	0.000	-90.00	0.000	0000000
103630000	4.8308E-02	0.000	-90.00	0.000	0000000
103640000	4.8308E-02	0.000	-90.00	0.000	0000000
103650000	4.8308E-02	0.000	-90.00	0.000	0000000
103660000	4.8308E-02	0.000	-90.00	0.000	0000000
103670000	4.8308E-02	0.000	-90.00	0.000	0000000
103680000	4.4887E-02	0.000	0.000	0.000	0000000
103690000	4.4887E-02	0.000	0.000	0.000	0000000
103700000	4.4887E-02	0.000	0.000	0.000	0000000
103710000	4.4887E-02	0.000	0.000	0.000	0000000
103720000	4.4887E-02	0.000	0.000	0.000	0000000
103730000	4.4887E-02	0.000	0.000	0.000	0000000
103740000	4.4887E-02	0.000	0.000	0.000	0000000
103750000	4.4887E-02	0.000	0.000	0.000	0000000

0 Vol no.	coord.	flow area (ft2)	flow length (ft)	sp.x. chng. (ft)	sp.y. chng. (ft)	sp.z. chng. (ft)	roughness (ft)	hydrlc.diam. (ft)	xyz-flag f
103010000	x	5.1300E-02	0.8958	-4.5718E-12	0.000	0.8958	1.5000E-04	0.2556	0000000
103020000	x	5.1300E-02	0.8958	-4.5718E-12	0.000	0.8958	1.5000E-04	0.2556	0000000
103030000	x	5.1300E-02	0.8958	-4.5718E-12	0.000	0.8958	1.5000E-04	0.2556	0000000
103040000	x	5.1300E-02	0.8958	-4.5718E-12	0.000	0.8958	1.5000E-04	0.2556	0000000
103050000	x	5.1300E-02	0.6667	0.6667	0.000	0.000	1.5000E-04	0.2556	0000000
103060000	x	5.1300E-02	0.6667	0.6667	0.000	0.000	1.5000E-04	0.2556	0000000
103070000	x	5.1300E-02	0.6667	0.6667	0.000	0.000	1.5000E-04	0.2556	0000000
103080000	x	5.1300E-02	0.8185	-4.1769E-12	0.000	-0.8185	1.5000E-04	0.2556	0000000
103090000	x	5.1300E-02	0.8185	-4.1769E-12	0.000	-0.8185	1.5000E-04	0.2556	0000000
103100000	x	5.1300E-02	0.8185	-4.1769E-12	0.000	-0.8185	1.5000E-04	0.2556	0000000
103110000	x	5.1300E-02	0.8185	-4.1769E-12	0.000	-0.8185	1.5000E-04	0.2556	0000000
103120000	x	5.1300E-02	0.8185	-4.1769E-12	0.000	-0.8185	1.5000E-04	0.2556	0000000
103130000	x	5.1300E-02	0.8185	-4.1769E-12	0.000	-0.8185	1.5000E-04	0.2556	0000000

Attachment F: RELAP Output File - Hot Shut Down Conditions

103140000	x	5.1300E-02	0.8185	-4.1769E-12	0.000	-0.8185	1.5000E-04	0.2556	0000000
103150000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103160000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103170000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103180000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103190000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103200000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103210000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103220000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103230000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103240000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103250000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103260000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103270000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103280000	x	5.1300E-02	0.8042	-4.1040E-12	0.000	-0.8042	1.5000E-04	0.2556	0000000
103290000	x	5.1300E-02	0.8042	-4.1040E-12	0.000	-0.8042	1.5000E-04	0.2556	0000000
103300000	x	5.1300E-02	0.8042	-4.1040E-12	0.000	-0.8042	1.5000E-04	0.2556	0000000
103310000	x	5.1300E-02	0.8042	-4.1040E-12	0.000	-0.8042	1.5000E-04	0.2556	0000000
103320000	x	5.1300E-02	0.8042	-4.1040E-12	0.000	-0.8042	1.5000E-04	0.2556	0000000
103330000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103340000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103350000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103360000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103370000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103380000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103390000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103400000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103410000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103420000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103430000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103440000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103450000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103460000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103470000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103480000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103490000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103500000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103510000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103520000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103530000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103540000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103550000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103560000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103570000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103580000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103590000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103600000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103610000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000

Attachment F: RELAP Output File - Hot Shut Down Conditions

103620000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103630000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103640000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103650000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103660000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103670000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103680000	x	5.1300E-02	0.8750	0.8750	0.000	0.000	1.5000E-04	0.2556	0000000
103690000	x	5.1300E-02	0.8750	0.8750	0.000	0.000	1.5000E-04	0.2556	0000000
103700000	x	5.1300E-02	0.8750	0.8750	0.000	0.000	1.5000E-04	0.2556	0000000
103710000	x	5.1300E-02	0.8750	0.8750	0.000	0.000	1.5000E-04	0.2556	0000000
103720000	x	5.1300E-02	0.8750	0.8750	0.000	0.000	1.5000E-04	0.2556	0000000
103730000	x	5.1300E-02	0.8750	0.8750	0.000	0.000	1.5000E-04	0.2556	0000000
103740000	x	5.1300E-02	0.8750	0.8750	0.000	0.000	1.5000E-04	0.2556	0000000
103750000	x	5.1300E-02	0.8750	0.8750	0.000	0.000	1.5000E-04	0.2556	0000000

0Default friction shape ratio (1.0) and visc. ratio (0.0) being used and no user friction input entered.

0 Vol no.	i.c. flag	i.c.value 1	i.c.value 2	i.c.value 3	i.c.value 4	i.c.value 5	i.c.value 6	i.c.value 7	boron conc.
103010000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103020000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103030000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103040000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103050000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103060000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103070000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103080000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103090000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103100000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103110000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103120000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103130000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103140000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103150000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103160000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103170000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103180000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103190000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103200000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103210000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103220000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103230000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103240000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103250000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103260000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103270000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103280000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103290000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103300000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103310000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000

Attachment F: RELAP Output File - Hot Shut Down Conditions

103320000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103330000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103340000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103350000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103360000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103370000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103380000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103390000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103400000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103410000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103420000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103430000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103440000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103450000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103460000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103470000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103480000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103490000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103500000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103510000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103520000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103530000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103540000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103550000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103560000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103570000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103580000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103590000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103600000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103610000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103620000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103630000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103640000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103650000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103660000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103670000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103680000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103690000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103700000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103710000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103720000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103730000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103740000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103750000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000

0 Jun.no.	junction area (ft2)	jun-flag efvcahs	init. liq. flow (lbm/sec)	init. vap. flow (lbm/sec)
103010000	5.130000E-02	0001000	0.00000	0.00000
103020000	5.130000E-02	0001000	0.00000	0.00000

Attachment F: RELAP Output File - Hot Shut Down Conditions

103030000	5.130000E-02	0001000	0.00000	0.00000
103040000	5.130000E-02	0001000	0.00000	0.00000
103050000	5.130000E-02	0001000	0.00000	0.00000
103060000	5.130000E-02	0001000	0.00000	0.00000
103070000	5.130000E-02	0001000	0.00000	0.00000
103080000	5.130000E-02	0001000	0.00000	0.00000
103090000	5.130000E-02	0001000	0.00000	0.00000
103100000	5.130000E-02	0001000	0.00000	0.00000
103110000	5.130000E-02	0001000	0.00000	0.00000
103120000	5.130000E-02	0001000	0.00000	0.00000
103130000	5.130000E-02	0001000	0.00000	0.00000
103140000	5.130000E-02	0001000	0.00000	0.00000
103150000	5.130000E-02	0001000	0.00000	0.00000
103160000	5.130000E-02	0001000	0.00000	0.00000
103170000	5.130000E-02	0001000	0.00000	0.00000
103180000	5.130000E-02	0001000	0.00000	0.00000
103190000	5.130000E-02	0001000	0.00000	0.00000
103200000	5.130000E-02	0001000	0.00000	0.00000
103210000	5.130000E-02	0001000	0.00000	0.00000
103220000	5.130000E-02	0001000	0.00000	0.00000
103230000	5.130000E-02	0001000	0.00000	0.00000
103240000	5.130000E-02	0001000	0.00000	0.00000
103250000	5.130000E-02	0001000	0.00000	0.00000
103260000	5.130000E-02	0001000	0.00000	0.00000
103270000	5.130000E-02	0001000	0.00000	0.00000
103280000	5.130000E-02	0001000	0.00000	0.00000
103290000	5.130000E-02	0001000	0.00000	0.00000
103300000	5.130000E-02	0001000	0.00000	0.00000
103310000	5.130000E-02	0001000	0.00000	0.00000
103320000	5.130000E-02	0001000	0.00000	0.00000
103330000	5.130000E-02	0001000	0.00000	0.00000
103340000	5.130000E-02	0001000	0.00000	0.00000
103350000	5.130000E-02	0001000	0.00000	0.00000
103360000	5.130000E-02	0001000	0.00000	0.00000
103370000	5.130000E-02	0001000	0.00000	0.00000
103380000	5.130000E-02	0001000	0.00000	0.00000
103390000	5.130000E-02	0001000	0.00000	0.00000
103400000	5.130000E-02	0001000	0.00000	0.00000
103410000	5.130000E-02	0001000	0.00000	0.00000
103420000	5.130000E-02	0001000	0.00000	0.00000
103430000	5.130000E-02	0001000	0.00000	0.00000
103440000	5.130000E-02	0001000	0.00000	0.00000
103450000	5.130000E-02	0001000	0.00000	0.00000
103460000	5.130000E-02	0001000	0.00000	0.00000
103470000	5.130000E-02	0001000	0.00000	0.00000
103480000	5.130000E-02	0001000	0.00000	0.00000
103490000	5.130000E-02	0001000	0.00000	0.00000
103500000	5.130000E-02	0001000	0.00000	0.00000

Attachment F: RELAP Output File - Hot Shut Down Conditions

103510000	5.130000E-02	0001000	0.00000	0.00000
103520000	5.130000E-02	0001000	0.00000	0.00000
103530000	5.130000E-02	0001000	0.00000	0.00000
103540000	5.130000E-02	0001000	0.00000	0.00000
103550000	5.130000E-02	0001000	0.00000	0.00000
103560000	5.130000E-02	0001000	0.00000	0.00000
103570000	5.130000E-02	0001000	0.00000	0.00000
103580000	5.130000E-02	0001000	0.00000	0.00000
103590000	5.130000E-02	0001000	0.00000	0.00000
103600000	5.130000E-02	0001000	0.00000	0.00000
103610000	5.130000E-02	0001000	0.00000	0.00000
103620000	5.130000E-02	0001000	0.00000	0.00000
103630000	5.130000E-02	0001000	0.00000	0.00000
103640000	5.130000E-02	0001000	0.00000	0.00000
103650000	5.130000E-02	0001000	0.00000	0.00000
103660000	5.130000E-02	0001000	0.00000	0.00000
103670000	5.130000E-02	0001000	0.00000	0.00000
103680000	5.130000E-02	0001000	0.00000	0.00000
103690000	5.130000E-02	0001000	0.00000	0.00000
103700000	5.130000E-02	0001000	0.00000	0.00000
103710000	5.130000E-02	0001000	0.00000	0.00000
103720000	5.130000E-02	0001000	0.00000	0.00000
103730000	5.130000E-02	0001000	0.00000	0.00000
103740000	5.130000E-02	0001000	0.00000	0.00000

0 Jun.no.	forward loss coefficient	forward loss multiplier	forward loss exponent	reverse loss coefficient	reverse loss multiplier	reverse loss exponent
103010000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103020000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103030000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103040000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
103050000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103060000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103070000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
103080000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103090000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103100000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103110000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103120000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103130000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103140000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
103150000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103160000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103170000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103180000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103190000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103200000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103210000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103220000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00

Attachment F: RELAP Output File - Hot Shut Down Conditions

103230000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103240000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103250000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103260000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103270000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
103280000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103290000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103300000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103310000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103320000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
103330000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103340000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103350000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103360000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103370000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103380000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103390000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103400000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103410000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103420000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103430000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103440000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103450000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103460000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103470000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
103480000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103490000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103500000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103510000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103520000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103530000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103540000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103550000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103560000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103570000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103580000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103590000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103600000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103610000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103620000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103630000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103640000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103650000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103660000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103670000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
103680000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103690000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103700000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00

Attachment F: RELAP Output File - Hot Shut Down Conditions

103710000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103720000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103730000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103740000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00

0 Jun.no.	junction diam. (ft)	beta factor	gas intercept	slope
103010000	0.255572	0.00000	1.00000	1.00000
103020000	0.255572	0.00000	1.00000	1.00000
103030000	0.255572	0.00000	1.00000	1.00000
103040000	0.255572	0.00000	1.00000	1.00000
103050000	0.255572	0.00000	1.00000	1.00000
103060000	0.255572	0.00000	1.00000	1.00000
103070000	0.255572	0.00000	1.00000	1.00000
103080000	0.255572	0.00000	1.00000	1.00000
103090000	0.255572	0.00000	1.00000	1.00000
103100000	0.255572	0.00000	1.00000	1.00000
103110000	0.255572	0.00000	1.00000	1.00000
103120000	0.255572	0.00000	1.00000	1.00000
103130000	0.255572	0.00000	1.00000	1.00000
103140000	0.255572	0.00000	1.00000	1.00000
103150000	0.255572	0.00000	1.00000	1.00000
103160000	0.255572	0.00000	1.00000	1.00000
103170000	0.255572	0.00000	1.00000	1.00000
103180000	0.255572	0.00000	1.00000	1.00000
103190000	0.255572	0.00000	1.00000	1.00000
103200000	0.255572	0.00000	1.00000	1.00000
103210000	0.255572	0.00000	1.00000	1.00000
103220000	0.255572	0.00000	1.00000	1.00000
103230000	0.255572	0.00000	1.00000	1.00000
103240000	0.255572	0.00000	1.00000	1.00000
103250000	0.255572	0.00000	1.00000	1.00000
103260000	0.255572	0.00000	1.00000	1.00000
103270000	0.255572	0.00000	1.00000	1.00000
103280000	0.255572	0.00000	1.00000	1.00000
103290000	0.255572	0.00000	1.00000	1.00000
103300000	0.255572	0.00000	1.00000	1.00000
103310000	0.255572	0.00000	1.00000	1.00000
103320000	0.255572	0.00000	1.00000	1.00000
103330000	0.255572	0.00000	1.00000	1.00000
103340000	0.255572	0.00000	1.00000	1.00000
103350000	0.255572	0.00000	1.00000	1.00000
103360000	0.255572	0.00000	1.00000	1.00000
103370000	0.255572	0.00000	1.00000	1.00000
103380000	0.255572	0.00000	1.00000	1.00000
103390000	0.255572	0.00000	1.00000	1.00000
103400000	0.255572	0.00000	1.00000	1.00000
103410000	0.255572	0.00000	1.00000	1.00000
103420000	0.255572	0.00000	1.00000	1.00000

Attachment F: RELAP Output File - Hot Shut Down Conditions

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 103430000     0.255572          0.00000          1.00000          1.00000
 103440000     0.255572          0.00000          1.00000          1.00000
 103450000     0.255572          0.00000          1.00000          1.00000
 103460000     0.255572          0.00000          1.00000          1.00000
 103470000     0.255572          0.00000          1.00000          1.00000
 103480000     0.255572          0.00000          1.00000          1.00000
 103490000     0.255572          0.00000          1.00000          1.00000
 103500000     0.255572          0.00000          1.00000          1.00000
 103510000     0.255572          0.00000          1.00000          1.00000
 103520000     0.255572          0.00000          1.00000          1.00000
 103530000     0.255572          0.00000          1.00000          1.00000
 103540000     0.255572          0.00000          1.00000          1.00000
 103550000     0.255572          0.00000          1.00000          1.00000
 103560000     0.255572          0.00000          1.00000          1.00000
 103570000     0.255572          0.00000          1.00000          1.00000
 103580000     0.255572          0.00000          1.00000          1.00000
 103590000     0.255572          0.00000          1.00000          1.00000
 103600000     0.255572          0.00000          1.00000          1.00000
 103610000     0.255572          0.00000          1.00000          1.00000
 103620000     0.255572          0.00000          1.00000          1.00000
 103630000     0.255572          0.00000          1.00000          1.00000
 103640000     0.255572          0.00000          1.00000          1.00000
 103650000     0.255572          0.00000          1.00000          1.00000
 103660000     0.255572          0.00000          1.00000          1.00000
 103670000     0.255572          0.00000          1.00000          1.00000
 103680000     0.255572          0.00000          1.00000          1.00000
 103690000     0.255572          0.00000          1.00000          1.00000
 103700000     0.255572          0.00000          1.00000          1.00000
 103710000     0.255572          0.00000          1.00000          1.00000
 103720000     0.255572          0.00000          1.00000          1.00000
 103730000     0.255572          0.00000          1.00000          1.00000
 103740000     0.255572          0.00000          1.00000          1.00000
0=====================================================================
                    Input data for component 104, 60DEG    sngljun , having   0 volumes and   1 junctions
0  Jun.no. from vol.   to vol.  jun. area     jun-flag  subcooled     two-phase     superheated
                                (ft2)         jefvcahs  dschg. coef.  dschg. coef.  dschg. coef.
 104000000 103750002 105010001  5.130000E-02  00001000  1.000000E+00  1.400000E-01  0.000000E+00
0  Jun.no.     forward loss    forward loss    forward loss    reverse loss    reverse loss    reverse loss
               coefficient     multiplier      exponent         coefficient     multiplier      exponent
 104000000     1.336000E-01    0.000000E+00    0.000000E+00    1.336000E-01    0.000000E+00    0.000000E+00
0  Jun.no.                        junction diam.   beta factor      gas intercept    slope
                                  (ft)
 104000000                        2.555723E-01     0.000000E+00     1.000000E+00     1.000000E+00
0  Jun.no.                        init. liq. flow  init. vap. flow
                                   (lbm/sec)        (lbm/sec)
 104000000                        0.000000E+00     0.000000E+00
0=====================================================================
                    Input data for component 105, 3PIPE    pipe    , having  92 volumes and  91 junctions
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

0 Vol no.	volume (ft3)	angle 1 (deg)	angle 2 (deg)	angle 3 (deg)	vol-flag tlpvb_e
105010000	4.5600E-02	0.000	0.000	0.000	0000000
105020000	4.5600E-02	0.000	0.000	0.000	0000000
105030000	4.5600E-02	0.000	0.000	0.000	0000000
105040000	4.5600E-02	0.000	0.000	0.000	0000000
105050000	4.5600E-02	0.000	0.000	0.000	0000000
105060000	4.5600E-02	0.000	0.000	0.000	0000000
105070000	4.5600E-02	0.000	0.000	0.000	0000000
105080000	4.5600E-02	0.000	0.000	0.000	0000000
105090000	4.5600E-02	0.000	0.000	0.000	0000000
105100000	4.5600E-02	0.000	0.000	0.000	0000000
105110000	4.5600E-02	0.000	0.000	0.000	0000000
105120000	4.5600E-02	0.000	0.000	0.000	0000000
105130000	4.5600E-02	0.000	0.000	0.000	0000000
105140000	4.5600E-02	0.000	0.000	0.000	0000000
105150000	4.5600E-02	0.000	0.000	0.000	0000000
105160000	4.5600E-02	0.000	0.000	0.000	0000000
105170000	4.5600E-02	0.000	0.000	0.000	0000000
105180000	4.5600E-02	0.000	0.000	0.000	0000000
105190000	4.5600E-02	0.000	0.000	0.000	0000000
105200000	4.5600E-02	0.000	0.000	0.000	0000000
105210000	4.5600E-02	0.000	0.000	0.000	0000000
105220000	4.5600E-02	0.000	0.000	0.000	0000000
105230000	4.5600E-02	0.000	0.000	0.000	0000000
105240000	4.5600E-02	0.000	0.000	0.000	0000000
105250000	4.5600E-02	0.000	0.000	0.000	0000000
105260000	4.5600E-02	0.000	0.000	0.000	0000000
105270000	4.5600E-02	0.000	0.000	0.000	0000000
105280000	4.5600E-02	0.000	0.000	0.000	0000000
105290000	4.5600E-02	0.000	0.000	0.000	0000000
105300000	4.5600E-02	0.000	0.000	0.000	0000000
105310000	4.5600E-02	0.000	0.000	0.000	0000000
105320000	4.5600E-02	0.000	0.000	0.000	0000000
105330000	4.5600E-02	0.000	0.000	0.000	0000000
105340000	4.5600E-02	0.000	0.000	0.000	0000000
105350000	4.5600E-02	0.000	0.000	0.000	0000000
105360000	4.5600E-02	0.000	0.000	0.000	0000000
105370000	4.5600E-02	0.000	0.000	0.000	0000000
105380000	4.5600E-02	0.000	0.000	0.000	0000000
105390000	4.5600E-02	0.000	0.000	0.000	0000000
105400000	4.5600E-02	0.000	0.000	0.000	0000000
105410000	4.5600E-02	0.000	0.000	0.000	0000000
105420000	4.5600E-02	0.000	0.000	0.000	0000000
105430000	4.5600E-02	0.000	0.000	0.000	0000000
105440000	4.5600E-02	0.000	0.000	0.000	0000000
105450000	4.5600E-02	0.000	0.000	0.000	0000000
105460000	4.5600E-02	0.000	0.000	0.000	0000000

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
 105470000    4.5600E-02    0.000        0.000        0.000        0000000
 105480000    4.5600E-02    0.000        0.000        0.000        0000000
 105490000    4.5600E-02    0.000        0.000        0.000        0000000
 105500000    4.5600E-02    0.000        0.000        0.000        0000000
 105510000    4.5600E-02    0.000        0.000        0.000        0000000
 105520000    4.5600E-02    0.000        0.000        0.000        0000000
 105530000    4.5600E-02    0.000        0.000        0.000        0000000
 105540000    4.5600E-02    0.000        0.000        0.000        0000000
 105550000    4.5600E-02    0.000        0.000        0.000        0000000
 105560000    4.5600E-02    0.000        0.000        0.000        0000000
 105570000    4.5600E-02    0.000        0.000        0.000        0000000
 105580000    4.5600E-02    0.000        0.000        0.000        0000000
 105590000    4.5600E-02    0.000        0.000        0.000        0000000
 105600000    4.5600E-02    0.000        0.000        0.000        0000000
 105610000    4.5600E-02    0.000        0.000        0.000        0000000
 105620000    4.5600E-02    0.000        0.000        0.000        0000000
 105630000    4.5600E-02    0.000        0.000        0.000        0000000
 105640000    4.5600E-02    0.000        0.000        0.000        0000000
 105650000    4.5600E-02    0.000        0.000        0.000        0000000
 105660000    4.5600E-02    0.000        0.000        0.000        0000000
 105670000    4.5600E-02    0.000        0.000        0.000        0000000
 105680000    4.5600E-02    0.000        0.000        0.000        0000000
 105690000    4.5600E-02    0.000        0.000        0.000        0000000
 105700000    4.5600E-02    0.000        0.000        0.000        0000000
 105710000    4.5600E-02    0.000        0.000        0.000        0000000
 105720000    4.5600E-02    0.000        0.000        0.000        0000000
 105730000    4.5600E-02    0.000        0.000        0.000        0000000
 105740000    4.5600E-02    0.000        0.000        0.000        0000000
 105750000    4.5600E-02    0.000        0.000        0.000        0000000
 105760000    4.5600E-02    0.000        0.000        0.000        0000000
 105770000    4.5600E-02    0.000        0.000        0.000        0000000
 105780000    4.5600E-02    0.000        0.000        0.000        0000000
 105790000    4.5600E-02    0.000        0.000        0.000        0000000
 105800000    4.5600E-02    0.000        0.000        0.000        0000000
 105810000    4.5600E-02    0.000        0.000        0.000        0000000
 105820000    4.5600E-02    0.000        0.000        0.000        0000000
 105830000    4.5600E-02    0.000        0.000        0.000        0000000
 105840000    4.5600E-02    0.000        0.000        0.000        0000000
 105850000    4.5600E-02    0.000        0.000        0.000        0000000
 105860000    4.5600E-02    0.000        0.000        0.000        0000000
 105870000    4.5600E-02    0.000        0.000        0.000        0000000
 105880000    4.5600E-02    0.000        0.000        0.000        0000000
 105890000    4.5600E-02    0.000        0.000        0.000        0000000
 105900000    4.5600E-02    0.000        0.000        0.000        0000000
 105910000    3.9544E-02    0.000        0.000        0.000        0000000
 105920000    3.9544E-02    0.000        0.000        0.000        0000000
0  Vol no. coord.    flow area     flow length   sp.x. chng.   sp.y. chng.   sp.z. chng.   roughness     hydrlc.diam.  xyz-flag
                     (ft2)         (ft)          (ft)          (ft)          (ft)          (ft)          (ft)          _____f_
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

105010000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105020000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105030000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105040000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105050000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105060000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105070000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105080000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105090000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105100000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105110000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105120000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105130000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105140000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105150000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105160000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105170000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105180000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105190000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105200000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105210000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105220000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105230000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105240000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105250000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105260000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105270000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105280000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105290000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105300000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105310000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105320000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105330000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105340000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105350000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105360000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105370000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105380000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105390000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105400000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105410000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105420000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105430000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105440000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105450000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105460000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105470000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105480000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000

Attachment F: RELAP Output File - Hot Shut Down Conditions

105490000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105500000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105510000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105520000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105530000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105540000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105550000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105560000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105570000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105580000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105590000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105600000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105610000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105620000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105630000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105640000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105650000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105660000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105670000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105680000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105690000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105700000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105710000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105720000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105730000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105740000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105750000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105760000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105770000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105780000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105790000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105800000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105810000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105820000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105830000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105840000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105850000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105860000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105870000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105880000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105890000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105900000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105910000	x	5.1300E-02	0.7708	0.7708	0.000	0.000	1.5000E-04	0.2556	0000000
105920000	x	5.1300E-02	0.7708	0.7708	0.000	0.000	1.5000E-04	0.2556	0000000

0Default friction shape ratio (1.0) and visc. ratio (0.0) being used and no user friction input entered.

0 Vol no.	i.c. flag	i.c.value 1	i.c.value 2	i.c.value 3	i.c.value 4	i.c.value 5	i.c.value 6	i.c.value 7	boron conc.
105010000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000

Attachment F: RELAP Output File - Hot Shut Down Conditions

105020000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105030000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105040000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105050000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105060000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105070000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105080000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105090000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105100000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105110000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105120000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105130000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105140000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105150000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105160000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105170000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105180000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105190000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105200000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105210000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105220000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105230000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105240000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105250000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105260000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105270000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105280000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105290000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105300000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105310000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105320000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105330000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105340000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105350000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105360000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105370000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105380000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105390000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105400000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105410000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105420000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105430000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105440000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105450000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105460000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105470000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105480000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105490000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000

Attachment F: RELAP Output File - Hot Shut Down Conditions

105500000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105510000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105520000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105530000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105540000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105550000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105560000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105570000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105580000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105590000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105600000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105610000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105620000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105630000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105640000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105650000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105660000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105670000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105680000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105690000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105700000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105710000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105720000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105730000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105740000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105750000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105760000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105770000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105780000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105790000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105800000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105810000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105820000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105830000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105840000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105850000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105860000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105870000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105880000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105890000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105900000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105910000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105920000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000

0: Jun.no.	junction area (ft2)	jun-flag efvcahs	init. liq. flow (lbm/sec)	init. vap. flow (lbm/sec)
105010000	5.130000E-02	0001000	0.00000	0.00000
105020000	5.130000E-02	0001000	0.00000	0.00000
105030000	5.130000E-02	0001000	0.00000	0.00000

Attachment F: RELAP Output File - Hot Shut Down Conditions

105040000	5.130000E-02	0001000	0.00000	0.00000
105050000	5.130000E-02	0001000	0.00000	0.00000
105060000	5.130000E-02	0001000	0.00000	0.00000
105070000	5.130000E-02	0001000	0.00000	0.00000
105080000	5.130000E-02	0001000	0.00000	0.00000
105090000	5.130000E-02	0001000	0.00000	0.00000
105100000	5.130000E-02	0001000	0.00000	0.00000
105110000	5.130000E-02	0001000	0.00000	0.00000
105120000	5.130000E-02	0001000	0.00000	0.00000
105130000	5.130000E-02	0001000	0.00000	0.00000
105140000	5.130000E-02	0001000	0.00000	0.00000
105150000	5.130000E-02	0001000	0.00000	0.00000
105160000	5.130000E-02	0001000	0.00000	0.00000
105170000	5.130000E-02	0001000	0.00000	0.00000
105180000	5.130000E-02	0001000	0.00000	0.00000
105190000	5.130000E-02	0001000	0.00000	0.00000
105200000	5.130000E-02	0001000	0.00000	0.00000
105210000	5.130000E-02	0001000	0.00000	0.00000
105220000	5.130000E-02	0001000	0.00000	0.00000
105230000	5.130000E-02	0001000	0.00000	0.00000
105240000	5.130000E-02	0001000	0.00000	0.00000
105250000	5.130000E-02	0001000	0.00000	0.00000
105260000	5.130000E-02	0001000	0.00000	0.00000
105270000	5.130000E-02	0001000	0.00000	0.00000
105280000	5.130000E-02	0001000	0.00000	0.00000
105290000	5.130000E-02	0001000	0.00000	0.00000
105300000	5.130000E-02	0001000	0.00000	0.00000
105310000	5.130000E-02	0001000	0.00000	0.00000
105320000	5.130000E-02	0001000	0.00000	0.00000
105330000	5.130000E-02	0001000	0.00000	0.00000
105340000	5.130000E-02	0001000	0.00000	0.00000
105350000	5.130000E-02	0001000	0.00000	0.00000
105360000	5.130000E-02	0001000	0.00000	0.00000
105370000	5.130000E-02	0001000	0.00000	0.00000
105380000	5.130000E-02	0001000	0.00000	0.00000
105390000	5.130000E-02	0001000	0.00000	0.00000
105400000	5.130000E-02	0001000	0.00000	0.00000
105410000	5.130000E-02	0001000	0.00000	0.00000
105420000	5.130000E-02	0001000	0.00000	0.00000
105430000	5.130000E-02	0001000	0.00000	0.00000
105440000	5.130000E-02	0001000	0.00000	0.00000
105450000	5.130000E-02	0001000	0.00000	0.00000
105460000	5.130000E-02	0001000	0.00000	0.00000
105470000	5.130000E-02	0001000	0.00000	0.00000
105480000	5.130000E-02	0001000	0.00000	0.00000
105490000	5.130000E-02	0001000	0.00000	0.00000
105500000	5.130000E-02	0001000	0.00000	0.00000
105510000	5.130000E-02	0001000	0.00000	0.00000

Attachment F: RELAP Output File - Hot Shut Down Conditions

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 105520000     5.130000E-02        0001000      0.00000          0.00000
 105530000     5.130000E-02        0001000      0.00000          0.00000
 105540000     5.130000E-02        0001000      0.00000          0.00000
 105550000     5.130000E-02        0001000      0.00000          0.00000
 105560000     5.130000E-02        0001000      0.00000          0.00000
 105570000     5.130000E-02        0001000      0.00000          0.00000
 105580000     5.130000E-02        0001000      0.00000          0.00000
 105590000     5.130000E-02        0001000      0.00000          0.00000
 105600000     5.130000E-02        0001000      0.00000          0.00000
 105610000     5.130000E-02        0001000      0.00000          0.00000
 105620000     5.130000E-02        0001000      0.00000          0.00000
 105630000     5.130000E-02        0001000      0.00000          0.00000
 105640000     5.130000E-02        0001000      0.00000          0.00000
 105650000     5.130000E-02        0001000      0.00000          0.00000
 105660000     5.130000E-02        0001000      0.00000          0.00000
 105670000     5.130000E-02        0001000      0.00000          0.00000
 105680000     5.130000E-02        0001000      0.00000          0.00000
 105690000     5.130000E-02        0001000      0.00000          0.00000
 105700000     5.130000E-02        0001000      0.00000          0.00000
 105710000     5.130000E-02        0001000      0.00000          0.00000
 105720000     5.130000E-02        0001000      0.00000          0.00000
 105730000     5.130000E-02        0001000      0.00000          0.00000
 105740000     5.130000E-02        0001000      0.00000          0.00000
 105750000     5.130000E-02        0001000      0.00000          0.00000
 105760000     5.130000E-02        0001000      0.00000          0.00000
 105770000     5.130000E-02        0001000      0.00000          0.00000
 105780000     5.130000E-02        0001000      0.00000          0.00000
 105790000     5.130000E-02        0001000      0.00000          0.00000
 105800000     5.130000E-02        0001000      0.00000          0.00000
 105810000     5.130000E-02        0001000      0.00000          0.00000
 105820000     5.130000E-02        0001000      0.00000          0.00000
 105830000     5.130000E-02        0001000      0.00000          0.00000
 105840000     5.130000E-02        0001000      0.00000          0.00000
 105850000     5.130000E-02        0001000      0.00000          0.00000
 105860000     5.130000E-02        0001000      0.00000          0.00000
 105870000     5.130000E-02        0001000      0.00000          0.00000
 105880000     5.130000E-02        0001000      0.00000          0.00000
 105890000     5.130000E-02        0001000      0.00000          0.00000
 105900000     5.130000E-02        0001000      0.00000          0.00000
 105910000     5.130000E-02        0001000      0.00000          0.00000
0  Jun.no.     forward loss    forward loss    forward loss    reverse loss    reverse loss    reverse loss
               coefficient     multiplier      exponent          coefficient     multiplier      exponent
 105010000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 105020000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 105030000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 105040000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 105050000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 105060000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
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Attachment F: RELAP Output File - Hot Shut Down Conditions

105070000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105080000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105090000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105100000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105110000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105120000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105130000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105140000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105150000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105160000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105170000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105180000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105190000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105200000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105210000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105220000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105230000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105240000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105250000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105260000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105270000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105280000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105290000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105300000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105310000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105320000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105330000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105340000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105350000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105360000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105370000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105380000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105390000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105400000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105410000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105420000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105430000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105440000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105450000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105460000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105470000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105480000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105490000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105500000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105510000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105520000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105530000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105540000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00

Attachment F: RELAP Output File - Hot Shut Down Conditions

105550000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105560000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105570000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105580000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105590000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105600000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105610000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105620000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105630000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105640000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105650000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105660000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105670000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105680000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105690000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105700000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105710000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105720000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105730000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105740000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105750000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105760000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105770000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105780000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105790000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105800000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105810000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105820000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105830000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105840000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105850000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105860000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105870000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105880000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105890000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105900000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
105910000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00

0 Jun.no.	junction diam. (ft)	beta factor	gas intercept	slope
105010000	0.255572	0.00000	1.00000	1.00000
105020000	0.255572	0.00000	1.00000	1.00000
105030000	0.255572	0.00000	1.00000	1.00000
105040000	0.255572	0.00000	1.00000	1.00000
105050000	0.255572	0.00000	1.00000	1.00000
105060000	0.255572	0.00000	1.00000	1.00000
105070000	0.255572	0.00000	1.00000	1.00000
105080000	0.255572	0.00000	1.00000	1.00000
105090000	0.255572	0.00000	1.00000	1.00000

Attachment F: RELAP Output File - Hot Shut Down Conditions

105100000	0.255572	0.00000	1.00000	1.00000
105110000	0.255572	0.00000	1.00000	1.00000
105120000	0.255572	0.00000	1.00000	1.00000
105130000	0.255572	0.00000	1.00000	1.00000
105140000	0.255572	0.00000	1.00000	1.00000
105150000	0.255572	0.00000	1.00000	1.00000
105160000	0.255572	0.00000	1.00000	1.00000
105170000	0.255572	0.00000	1.00000	1.00000
105180000	0.255572	0.00000	1.00000	1.00000
105190000	0.255572	0.00000	1.00000	1.00000
105200000	0.255572	0.00000	1.00000	1.00000
105210000	0.255572	0.00000	1.00000	1.00000
105220000	0.255572	0.00000	1.00000	1.00000
105230000	0.255572	0.00000	1.00000	1.00000
105240000	0.255572	0.00000	1.00000	1.00000
105250000	0.255572	0.00000	1.00000	1.00000
105260000	0.255572	0.00000	1.00000	1.00000
105270000	0.255572	0.00000	1.00000	1.00000
105280000	0.255572	0.00000	1.00000	1.00000
105290000	0.255572	0.00000	1.00000	1.00000
105300000	0.255572	0.00000	1.00000	1.00000
105310000	0.255572	0.00000	1.00000	1.00000
105320000	0.255572	0.00000	1.00000	1.00000
105330000	0.255572	0.00000	1.00000	1.00000
105340000	0.255572	0.00000	1.00000	1.00000
105350000	0.255572	0.00000	1.00000	1.00000
105360000	0.255572	0.00000	1.00000	1.00000
105370000	0.255572	0.00000	1.00000	1.00000
105380000	0.255572	0.00000	1.00000	1.00000
105390000	0.255572	0.00000	1.00000	1.00000
105400000	0.255572	0.00000	1.00000	1.00000
105410000	0.255572	0.00000	1.00000	1.00000
105420000	0.255572	0.00000	1.00000	1.00000
105430000	0.255572	0.00000	1.00000	1.00000
105440000	0.255572	0.00000	1.00000	1.00000
105450000	0.255572	0.00000	1.00000	1.00000
105460000	0.255572	0.00000	1.00000	1.00000
105470000	0.255572	0.00000	1.00000	1.00000
105480000	0.255572	0.00000	1.00000	1.00000
105490000	0.255572	0.00000	1.00000	1.00000
105500000	0.255572	0.00000	1.00000	1.00000
105510000	0.255572	0.00000	1.00000	1.00000
105520000	0.255572	0.00000	1.00000	1.00000
105530000	0.255572	0.00000	1.00000	1.00000
105540000	0.255572	0.00000	1.00000	1.00000
105550000	0.255572	0.00000	1.00000	1.00000
105560000	0.255572	0.00000	1.00000	1.00000
105570000	0.255572	0.00000	1.00000	1.00000

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
 105580000     0.255572          0.00000          1.00000          1.00000
 105590000     0.255572          0.00000          1.00000          1.00000
 105600000     0.255572          0.00000          1.00000          1.00000
 105610000     0.255572          0.00000          1.00000          1.00000
 105620000     0.255572          0.00000          1.00000          1.00000
 105630000     0.255572          0.00000          1.00000          1.00000
 105640000     0.255572          0.00000          1.00000          1.00000
 105650000     0.255572          0.00000          1.00000          1.00000
 105660000     0.255572          0.00000          1.00000          1.00000
 105670000     0.255572          0.00000          1.00000          1.00000
 105680000     0.255572          0.00000          1.00000          1.00000
 105690000     0.255572          0.00000          1.00000          1.00000
 105700000     0.255572          0.00000          1.00000          1.00000
 105710000     0.255572          0.00000          1.00000          1.00000
 105720000     0.255572          0.00000          1.00000          1.00000
 105730000     0.255572          0.00000          1.00000          1.00000
 105740000     0.255572          0.00000          1.00000          1.00000
 105750000     0.255572          0.00000          1.00000          1.00000
 105760000     0.255572          0.00000          1.00000          1.00000
 105770000     0.255572          0.00000          1.00000          1.00000
 105780000     0.255572          0.00000          1.00000          1.00000
 105790000     0.255572          0.00000          1.00000          1.00000
 105800000     0.255572          0.00000          1.00000          1.00000
 105810000     0.255572          0.00000          1.00000          1.00000
 105820000     0.255572          0.00000          1.00000          1.00000
 105830000     0.255572          0.00000          1.00000          1.00000
 105840000     0.255572          0.00000          1.00000          1.00000
 105850000     0.255572          0.00000          1.00000          1.00000
 105860000     0.255572          0.00000          1.00000          1.00000
 105870000     0.255572          0.00000          1.00000          1.00000
 105880000     0.255572          0.00000          1.00000          1.00000
 105890000     0.255572          0.00000          1.00000          1.00000
 105900000     0.255572          0.00000          1.00000          1.00000
 105910000     0.255572          0.00000          1.00000          1.00000
0=====================================================================
                    Input data for component 106, ELBOW    sngljun , having   0 volumes and   1 junctions
0  Jun.no. from vol.   to vol.  jun. area     jun-flag  subcooled     two-phase     superheated
                                (ft2)         jefvcahs  dschg. coef.  dschg. coef.  dschg. coef.
 106000000 105920002 107010001  5.130000E-02  00001000  1.000000E+00  1.400000E-01  0.000000E+00
0  Jun.no.     forward loss    forward loss    forward loss    reverse loss    reverse loss    reverse loss
               coefficient     multiplier      exponent         coefficient     multiplier      exponent
 106000000     1.710000E-01    0.000000E+00    0.000000E+00    1.710000E-01    0.000000E+00    0.000000E+00
0  Jun.no.                        junction diam.   beta factor      gas intercept    slope
                                  (ft)
 106000000                        2.555723E-01     0.000000E+00     1.000000E+00     1.000000E+00
0  Jun.no.                        init. liq. flow  init. vap. flow
                                   (lbm/sec)        (lbm/sec)
 106000000                        0.000000E+00     0.000000E+00
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
0==========================================================================
                    Input data for component 107, 1A       pipe     , having  39 volumes and  38 junctions
0  Vol no.    volume        angle 1       angle 2       angle 3      vol-flag
              (ft3)         (deg)         (deg)         (deg)         tlpvb_e
 107010000    4.3581E-02     0.000         0.000         0.000        0000000
 107020000    4.3581E-02     0.000         0.000         0.000        0000000
 107030000    4.3581E-02     0.000         0.000         0.000        0000000
 107040000    4.3581E-02     0.000         0.000         0.000        0000000
 107050000    4.3581E-02     0.000         0.000         0.000        0000000
 107060000    4.3581E-02     0.000         0.000         0.000        0000000
 107070000    4.3581E-02     0.000         0.000         0.000        0000000
 107080000    4.3581E-02     0.000         0.000         0.000        0000000
 107090000    4.3581E-02     0.000         0.000         0.000        0000000
 107100000    4.3581E-02     0.000         0.000         0.000        0000000
 107110000    4.3581E-02     0.000         0.000         0.000        0000000
 107120000    4.3581E-02     0.000         0.000         0.000        0000000
 107130000    4.3581E-02     0.000         0.000         0.000        0000000
 107140000    4.3581E-02     0.000         0.000         0.000        0000000
 107150000    4.3581E-02     0.000         0.000         0.000        0000000
 107160000    4.3581E-02     0.000         0.000         0.000        0000000
 107170000    4.3581E-02     0.000         0.000         0.000        0000000
 107180000    4.3581E-02     0.000         0.000         0.000        0000000
 107190000    4.2037E-02     0.000       -90.00          0.000        0000000
 107200000    4.2037E-02     0.000       -90.00          0.000        0000000
 107210000    4.2037E-02     0.000       -90.00          0.000        0000000
 107220000    4.2037E-02     0.000       -90.00          0.000        0000000
 107230000    4.2037E-02     0.000       -90.00          0.000        0000000
 107240000    4.2037E-02     0.000       -90.00          0.000        0000000
 107250000    4.2037E-02     0.000       -90.00          0.000        0000000
 107260000    4.2037E-02     0.000       -90.00          0.000        0000000
 107270000    4.2037E-02     0.000       -90.00          0.000        0000000
 107280000    4.2037E-02     0.000       -90.00          0.000        0000000
 107290000    4.2037E-02     0.000       -90.00          0.000        0000000
 107300000    4.2037E-02     0.000       -90.00          0.000        0000000
 107310000    4.2037E-02     0.000       -90.00          0.000        0000000
 107320000    4.2037E-02     0.000       -90.00          0.000        0000000
 107330000    4.2037E-02     0.000       -90.00          0.000        0000000
 107340000    4.2037E-02     0.000       -90.00          0.000        0000000
 107350000    4.2037E-02     0.000       -90.00          0.000        0000000
 107360000    4.2037E-02     0.000       -90.00          0.000        0000000
 107370000    3.9188E-02     0.000         0.000         0.000        0000000
 107380000    3.9188E-02     0.000         0.000         0.000        0000000
 107390000    3.9188E-02     0.000         0.000         0.000        0000000
0  Vol no. coord.    flow area     flow length   sp.x. chng.   sp.y. chng.   sp.z. chng.   roughness     hydrlc.diam.  xyz-flag
                     (ft2)         (ft)          (ft)          (ft)          (ft)          (ft)          (ft)          _____f_
 107010000      x    5.1300E-02    0.8495        0.8495         0.000         0.000        1.5000E-04    0.2556        0000000
 107020000      x    5.1300E-02    0.8495        0.8495         0.000         0.000        1.5000E-04    0.2556        0000000
 107030000      x    5.1300E-02    0.8495        0.8495         0.000         0.000        1.5000E-04    0.2556        0000000
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

107040000	x	5.1300E-02	0.8495	0.8495	0.000	0.000	1.5000E-04	0.2556	0000000
107050000	x	5.1300E-02	0.8495	0.8495	0.000	0.000	1.5000E-04	0.2556	0000000
107060000	x	5.1300E-02	0.8495	0.8495	0.000	0.000	1.5000E-04	0.2556	0000000
107070000	x	5.1300E-02	0.8495	0.8495	0.000	0.000	1.5000E-04	0.2556	0000000
107080000	x	5.1300E-02	0.8495	0.8495	0.000	0.000	1.5000E-04	0.2556	0000000
107090000	x	5.1300E-02	0.8495	0.8495	0.000	0.000	1.5000E-04	0.2556	0000000
107100000	x	5.1300E-02	0.8495	0.8495	0.000	0.000	1.5000E-04	0.2556	0000000
107110000	x	5.1300E-02	0.8495	0.8495	0.000	0.000	1.5000E-04	0.2556	0000000
107120000	x	5.1300E-02	0.8495	0.8495	0.000	0.000	1.5000E-04	0.2556	0000000
107130000	x	5.1300E-02	0.8495	0.8495	0.000	0.000	1.5000E-04	0.2556	0000000
107140000	x	5.1300E-02	0.8495	0.8495	0.000	0.000	1.5000E-04	0.2556	0000000
107150000	x	5.1300E-02	0.8495	0.8495	0.000	0.000	1.5000E-04	0.2556	0000000
107160000	x	5.1300E-02	0.8495	0.8495	0.000	0.000	1.5000E-04	0.2556	0000000
107170000	x	5.1300E-02	0.8495	0.8495	0.000	0.000	1.5000E-04	0.2556	0000000
107180000	x	5.1300E-02	0.8495	0.8495	0.000	0.000	1.5000E-04	0.2556	0000000
107190000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107200000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107210000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107220000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107230000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107240000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107250000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107260000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107270000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107280000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107290000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107300000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107310000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107320000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107330000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107340000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107350000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107360000	x	5.1300E-02	0.8194	-4.1819E-12	0.000	-0.8194	1.5000E-04	0.2556	0000000
107370000	x	5.1300E-02	0.7639	0.7639	0.000	0.000	1.5000E-04	0.2556	0000000
107380000	x	5.1300E-02	0.7639	0.7639	0.000	0.000	1.5000E-04	0.2556	0000000
107390000	x	5.1300E-02	0.7639	0.7639	0.000	0.000	1.5000E-04	0.2556	0000000

0Default friction shape ratio (1.0) and visc. ratio (0.0) being used and no user friction input entered.

0 Vol no.	i.c. flag	i.c.value 1	i.c.value 2	i.c.value 3	i.c.value 4	i.c.value 5	i.c.value 6	i.c.value 7	boron conc.
107010000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107020000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107030000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107040000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107050000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107060000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107070000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107080000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107090000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000

Attachment F: RELAP Output File - Hot Shut Down Conditions

107100000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107110000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107120000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107130000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107140000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107150000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107160000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107170000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107180000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107190000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107200000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107210000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107220000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107230000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107240000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107250000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107260000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107270000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107280000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107290000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107300000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107310000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107320000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107330000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107340000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107350000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107360000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107370000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107380000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107390000	2	1020.	0.9975	0.000	0.000	0.000	0.000	0.000	0.000

0 Jun.no.	junction area (ft2)	jun-flag efvcahs	init. liq. flow (lbm/sec)	init. vap. flow (lbm/sec)
107010000	5.130000E-02	0001000	0.00000	0.00000
107020000	5.130000E-02	0001000	0.00000	0.00000
107030000	5.130000E-02	0001000	0.00000	0.00000
107040000	5.130000E-02	0001000	0.00000	0.00000
107050000	5.130000E-02	0001000	0.00000	0.00000
107060000	5.130000E-02	0001000	0.00000	0.00000
107070000	5.130000E-02	0001000	0.00000	0.00000
107080000	5.130000E-02	0001000	0.00000	0.00000
107090000	5.130000E-02	0001000	0.00000	0.00000
107100000	5.130000E-02	0001000	0.00000	0.00000
107110000	5.130000E-02	0001000	0.00000	0.00000
107120000	5.130000E-02	0001000	0.00000	0.00000
107130000	5.130000E-02	0001000	0.00000	0.00000
107140000	5.130000E-02	0001000	0.00000	0.00000
107150000	5.130000E-02	0001000	0.00000	0.00000
107160000	5.130000E-02	0001000	0.00000	0.00000

Attachment F: RELAP Output File - Hot Shut Down Conditions

107170000	5.130000E-02	0001000	0.00000	0.00000
107180000	5.130000E-02	0001000	0.00000	0.00000
107190000	5.130000E-02	0001000	0.00000	0.00000
107200000	5.130000E-02	0001000	0.00000	0.00000
107210000	5.130000E-02	0001000	0.00000	0.00000
107220000	5.130000E-02	0001000	0.00000	0.00000
107230000	5.130000E-02	0001000	0.00000	0.00000
107240000	5.130000E-02	0001000	0.00000	0.00000
107250000	5.130000E-02	0001000	0.00000	0.00000
107260000	5.130000E-02	0001000	0.00000	0.00000
107270000	5.130000E-02	0001000	0.00000	0.00000
107280000	5.130000E-02	0001000	0.00000	0.00000
107290000	5.130000E-02	0001000	0.00000	0.00000
107300000	5.130000E-02	0001000	0.00000	0.00000
107310000	5.130000E-02	0001000	0.00000	0.00000
107320000	5.130000E-02	0001000	0.00000	0.00000
107330000	5.130000E-02	0001000	0.00000	0.00000
107340000	5.130000E-02	0001000	0.00000	0.00000
107350000	5.130000E-02	0001000	0.00000	0.00000
107360000	5.130000E-02	0001000	0.00000	0.00000
107370000	5.130000E-02	0001000	0.00000	0.00000
107380000	5.130000E-02	0001000	0.00000	0.00000

0 Jun.no.	forward loss coefficient	forward loss multiplier	forward loss exponent	reverse loss coefficient	reverse loss multiplier	reverse loss exponent
107010000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107020000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107030000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107040000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107050000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107060000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107070000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107080000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107090000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107100000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107110000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107120000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107130000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107140000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107150000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107160000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107170000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107180000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
107190000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107200000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107210000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107220000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107230000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107240000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00

Attachment F: RELAP Output File - Hot Shut Down Conditions

107250000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107260000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107270000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107280000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107290000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107300000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107310000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107320000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107330000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107340000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107350000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107360000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
107370000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107380000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00

0 Jun.no.	junction diam. (ft)	beta factor	gas intercept	slope
107010000	0.255572	0.00000	1.00000	1.00000
107020000	0.255572	0.00000	1.00000	1.00000
107030000	0.255572	0.00000	1.00000	1.00000
107040000	0.255572	0.00000	1.00000	1.00000
107050000	0.255572	0.00000	1.00000	1.00000
107060000	0.255572	0.00000	1.00000	1.00000
107070000	0.255572	0.00000	1.00000	1.00000
107080000	0.255572	0.00000	1.00000	1.00000
107090000	0.255572	0.00000	1.00000	1.00000
107100000	0.255572	0.00000	1.00000	1.00000
107110000	0.255572	0.00000	1.00000	1.00000
107120000	0.255572	0.00000	1.00000	1.00000
107130000	0.255572	0.00000	1.00000	1.00000
107140000	0.255572	0.00000	1.00000	1.00000
107150000	0.255572	0.00000	1.00000	1.00000
107160000	0.255572	0.00000	1.00000	1.00000
107170000	0.255572	0.00000	1.00000	1.00000
107180000	0.255572	0.00000	1.00000	1.00000
107190000	0.255572	0.00000	1.00000	1.00000
107200000	0.255572	0.00000	1.00000	1.00000
107210000	0.255572	0.00000	1.00000	1.00000
107220000	0.255572	0.00000	1.00000	1.00000
107230000	0.255572	0.00000	1.00000	1.00000
107240000	0.255572	0.00000	1.00000	1.00000
107250000	0.255572	0.00000	1.00000	1.00000
107260000	0.255572	0.00000	1.00000	1.00000
107270000	0.255572	0.00000	1.00000	1.00000
107280000	0.255572	0.00000	1.00000	1.00000
107290000	0.255572	0.00000	1.00000	1.00000
107300000	0.255572	0.00000	1.00000	1.00000
107310000	0.255572	0.00000	1.00000	1.00000
107320000	0.255572	0.00000	1.00000	1.00000

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
 107330000     0.255572          0.00000          1.00000          1.00000
 107340000     0.255572          0.00000          1.00000          1.00000
 107350000     0.255572          0.00000          1.00000          1.00000
 107360000     0.255572          0.00000          1.00000          1.00000
 107370000     0.255572          0.00000          1.00000          1.00000
 107380000     0.255572          0.00000          1.00000          1.00000
0=====================================================================
                     Input data for component 108, 1A       sngljun , having   0 volumes and   1 junctions
0  Jun.no. from vol.   to vol.  jun. area     jun-flag  subcooled     two-phase     superheated
                                (ft2)         jefvcahs  dschg. coef.  dschg. coef.  dschg. coef.
 108000000 107390002 109010001  5.130000E-02  00000100  1.000000E+00  1.400000E-01  0.000000E+00
0  Jun.no.     forward loss    forward loss    forward loss    reverse loss    reverse loss    reverse loss
               coefficient     multiplier      exponent        coefficient     multiplier      exponent
 108000000     1.710000E-01    0.000000E+00    0.000000E+00    1.710000E-01    0.000000E+00    0.000000E+00
0  Jun.no.                        junction diam.   beta factor      gas intercept    slope
                                  (ft)
 108000000                        2.555723E-01     0.000000E+00     1.000000E+00     1.000000E+00
0  Jun.no.                        init. liq. flow  init. vap. flow
                                   (lbm/sec)        (lbm/sec)
 108000000                        0.000000E+00     0.000000E+00
0=====================================================================
                     Input data for component 109, ATM      tmdpvol , having   1 volumes and   0 junctions
0  Vol no.     flow area        flow length      volume           horiz. angle     vert. angle      elev. chng.
               (ft2)            (ft)             (ft3)            (deg)            (deg)            (ft)
 109010000      100.000          10.0000          1000.00          0.00000          0.00000          0.00000
0  Vol.no.     roughness        hydraulic diam.  vol-flag
               (ft)             (ft)             tlpvbfe
 109010000     1.500000E-04      11.2838          0011000
0Tabular data
     time            pressure        temperature     equil.  qual.
     (sec)           (lb/in2)        (degF)


     0.00000         14.7000         70.0000         0.999000
     7.00000         14.7000         70.0000         0.999000
0Thermodynamic properties files used by this problem:

 Thermodynamic properties file for h2o      obtained from lfn tpfh2onew,
 tpfh2ogibb version 1.0, tables of thermodynamic properties of light wate
 generated on 25-Jun-02 at 13:04:18 by stgh2onew  1.0 (1/Mar/01)

0$$$$$$$$$ Found     0 level stacks
1        Reference volumes and positions for each loop and segment for each hydrodynamic system for z coordinate direction
0    jun. no.   junction     vol. no.   volume                jun. no.   junction     vol. no.   volume
                face pos.                cntr.pos.                        face pos.                cntr.pos.
                (ft)                     (ft)                             (ft)                     (ft)
 Reference volume of system    1 named    *none*  is 101010000 and has center position   0.00000     (ft).
                            101010000   0.00000              102000000   0.00000     103010001  0.447915
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

103010000	0.895830	103020001	1.34374	103020000	1.79166	103030001	2.23957
103030000	2.68749	103040001	3.13540	103040000	3.58332	103050001	3.58332
103050000	3.58332	103060001	3.58332	103060000	3.58332	103070001	3.58332
103070000	3.58332	103080001	3.17409	103080000	2.76487	103090001	2.35564
103090000	1.94642	103100001	1.53719	103100000	1.12797	103110001	0.718745
103110000	0.309520	103120001	-9.970500E-02	103120000	-0.508930	103130001	-0.918155
103130000	-1.32738	103140001	-1.73661	103140000	-2.14583	103150001	-2.14583
103150000	-2.14583	103160001	-2.14583	103160000	-2.14583	103170001	-2.14583
103170000	-2.14583	103180001	-2.14583	103180000	-2.14583	103190001	-2.14583
103190000	-2.14583	103200001	-2.14583	103200000	-2.14583	103210001	-2.14583
103210000	-2.14583	103220001	-2.14583	103220000	-2.14583	103230001	-2.14583
103230000	-2.14583	103240001	-2.14583	103240000	-2.14583	103250001	-2.14583
103250000	-2.14583	103260001	-2.14583	103260000	-2.14583	103270001	-2.14583
103270000	-2.14583	103280001	-2.54792	103280000	-2.95000	103290001	-3.35209
103290000	-3.75417	103300001	-4.15626	103300000	-4.55834	103310001	-4.96043
103310000	-5.36251	103320001	-5.76460	103320000	-6.16668	103330001	-6.16668
103330000	-6.16668	103340001	-6.16668	103340000	-6.16668	103350001	-6.16668
103350000	-6.16668	103360001	-6.16668	103360000	-6.16668	103370001	-6.16668
103370000	-6.16668	103380001	-6.16668	103380000	-6.16668	103390001	-6.16668
103390000	-6.16668	103400001	-6.16668	103400000	-6.16668	103410001	-6.16668
103410000	-6.16668	103420001	-6.16668	103420000	-6.16668	103430001	-6.16668
103430000	-6.16668	103440001	-6.16668	103440000	-6.16668	103450001	-6.16668
103450000	-6.16668	103460001	-6.16668	103460000	-6.16668	103470001	-6.16668
103470000	-6.16668	103480001	-6.63752	103480000	-7.10835	103490001	-7.57919
103490000	-8.05002	103500001	-8.52086	103500000	-8.99169	103510001	-9.46253
103510000	-9.93336	103520001	-10.4042	103520000	-10.8750	103530001	-11.3459
103530000	-11.8167	103540001	-12.2875	103540000	-12.7584	103550001	-13.2292
103550000	-13.7000	103560001	-14.1709	103560000	-14.6417	103570001	-15.1125
103570000	-15.5834	103580001	-16.0542	103580000	-16.5251	103590001	-16.9959
103590000	-17.4667	103600001	-17.9376	103600000	-18.4084	103610001	-18.8792
103610000	-19.3501	103620001	-19.8209	103620000	-20.2917	103630001	-20.7626
103630000	-21.2334	103640001	-21.7042	103640000	-22.1751	103650001	-22.6459
103650000	-23.1167	103660001	-23.5876	103660000	-24.0584	103670001	-24.5292
103670000	-25.0001	103680001	-25.0001	103680000	-25.0001	103690001	-25.0001
103690000	-25.0001	103700001	-25.0001	103700000	-25.0001	103710001	-25.0001
103710000	-25.0001	103720001	-25.0001	103720000	-25.0001	103730001	-25.0001
103730000	-25.0001	103740001	-25.0001	103740000	-25.0001	103750001	-25.0001
104000000	-25.0001	105010001	-25.0001	105010000	-25.0001	105020001	-25.0001
105020000	-25.0001	105030001	-25.0001	105030000	-25.0001	105040001	-25.0001
105040000	-25.0001	105050001	-25.0001	105050000	-25.0001	105060001	-25.0001
105060000	-25.0001	105070001	-25.0001	105070000	-25.0001	105080001	-25.0001
105080000	-25.0001	105090001	-25.0001	105090000	-25.0001	105100001	-25.0001
105100000	-25.0001	105110001	-25.0001	105110000	-25.0001	105120001	-25.0001
105120000	-25.0001	105130001	-25.0001	105130000	-25.0001	105140001	-25.0001
105140000	-25.0001	105150001	-25.0001	105150000	-25.0001	105160001	-25.0001
105160000	-25.0001	105170001	-25.0001	105170000	-25.0001	105180001	-25.0001
105180000	-25.0001	105190001	-25.0001	105190000	-25.0001	105200001	-25.0001
105200000	-25.0001	105210001	-25.0001	105210000	-25.0001	105220001	-25.0001

Attachment F: RELAP Output File - Hot Shut Down Conditions

105220000	-25.0001	105230001	-25.0001	105230000	-25.0001	105240001	-25.0001
105240000	-25.0001	105250001	-25.0001	105250000	-25.0001	105260001	-25.0001
105260000	-25.0001	105270001	-25.0001	105270000	-25.0001	105280001	-25.0001
105280000	-25.0001	105290001	-25.0001	105290000	-25.0001	105300001	-25.0001
105300000	-25.0001	105310001	-25.0001	105310000	-25.0001	105320001	-25.0001
105320000	-25.0001	105330001	-25.0001	105330000	-25.0001	105340001	-25.0001
105340000	-25.0001	105350001	-25.0001	105350000	-25.0001	105360001	-25.0001
105360000	-25.0001	105370001	-25.0001	105370000	-25.0001	105380001	-25.0001
105380000	-25.0001	105390001	-25.0001	105390000	-25.0001	105400001	-25.0001
105400000	-25.0001	105410001	-25.0001	105410000	-25.0001	105420001	-25.0001
105420000	-25.0001	105430001	-25.0001	105430000	-25.0001	105440001	-25.0001
105440000	-25.0001	105450001	-25.0001	105450000	-25.0001	105460001	-25.0001
105460000	-25.0001	105470001	-25.0001	105470000	-25.0001	105480001	-25.0001
105480000	-25.0001	105490001	-25.0001	105490000	-25.0001	105500001	-25.0001
105500000	-25.0001	105510001	-25.0001	105510000	-25.0001	105520001	-25.0001
105520000	-25.0001	105530001	-25.0001	105530000	-25.0001	105540001	-25.0001
105540000	-25.0001	105550001	-25.0001	105550000	-25.0001	105560001	-25.0001
105560000	-25.0001	105570001	-25.0001	105570000	-25.0001	105580001	-25.0001
105580000	-25.0001	105590001	-25.0001	105590000	-25.0001	105600001	-25.0001
105600000	-25.0001	105610001	-25.0001	105610000	-25.0001	105620001	-25.0001
105620000	-25.0001	105630001	-25.0001	105630000	-25.0001	105640001	-25.0001
105640000	-25.0001	105650001	-25.0001	105650000	-25.0001	105660001	-25.0001
105660000	-25.0001	105670001	-25.0001	105670000	-25.0001	105680001	-25.0001
105680000	-25.0001	105690001	-25.0001	105690000	-25.0001	105700001	-25.0001
105700000	-25.0001	105710001	-25.0001	105710000	-25.0001	105720001	-25.0001
105720000	-25.0001	105730001	-25.0001	105730000	-25.0001	105740001	-25.0001
105740000	-25.0001	105750001	-25.0001	105750000	-25.0001	105760001	-25.0001
105760000	-25.0001	105770001	-25.0001	105770000	-25.0001	105780001	-25.0001
105780000	-25.0001	105790001	-25.0001	105790000	-25.0001	105800001	-25.0001
105800000	-25.0001	105810001	-25.0001	105810000	-25.0001	105820001	-25.0001
105820000	-25.0001	105830001	-25.0001	105830000	-25.0001	105840001	-25.0001
105840000	-25.0001	105850001	-25.0001	105850000	-25.0001	105860001	-25.0001
105860000	-25.0001	105870001	-25.0001	105870000	-25.0001	105880001	-25.0001
105880000	-25.0001	105890001	-25.0001	105890000	-25.0001	105900001	-25.0001
105900000	-25.0001	105910001	-25.0001	105910000	-25.0001	105920001	-25.0001
106000000	-25.0001	107010001	-25.0001	107010000	-25.0001	107020001	-25.0001
107020000	-25.0001	107030001	-25.0001	107030000	-25.0001	107040001	-25.0001
107040000	-25.0001	107050001	-25.0001	107050000	-25.0001	107060001	-25.0001
107060000	-25.0001	107070001	-25.0001	107070000	-25.0001	107080001	-25.0001
107080000	-25.0001	107090001	-25.0001	107090000	-25.0001	107100001	-25.0001
107100000	-25.0001	107110001	-25.0001	107110000	-25.0001	107120001	-25.0001
107120000	-25.0001	107130001	-25.0001	107130000	-25.0001	107140001	-25.0001
107140000	-25.0001	107150001	-25.0001	107150000	-25.0001	107160001	-25.0001
107160000	-25.0001	107170001	-25.0001	107170000	-25.0001	107180001	-25.0001
107180000	-25.0001	107190001	-25.4098	107190000	-25.8195	107200001	-26.2292
107200000	-26.6390	107210001	-27.0487	107210000	-27.4584	107220001	-27.8681
107220000	-28.2778	107230001	-28.6876	107230000	-29.0973	107240001	-29.5070
107240000	-29.9167	107250001	-30.3264	107250000	-30.7362	107260001	-31.1459

Attachment F: RELAP Output File - Hot Shut Down Conditions

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   107260000  -31.5556     107270001  -31.9653             107270000  -32.3750     107280001  -32.7848
   107280000  -33.1945     107290001  -33.6042             107290000  -34.0139     107300001  -34.4236
   107300000  -34.8334     107310001  -35.2431             107310000  -35.6528     107320001  -36.0625
   107320000  -36.4722     107330001  -36.8820             107330000  -37.2917     107340001  -37.7014
   107340000  -38.1111     107350001  -38.5208             107350000  -38.9306     107360001  -39.3403
   107360000  -39.7500     107370001  -39.7500             107370000  -39.7500     107380001  -39.7500
   107380000  -39.7500     107390001  -39.7500             108000000  -39.7500     109010001  -39.7500
1==============================================================================
                                Edit of hydrodynamic components after input processing
0   Number of volumes =  208, number of junctions =  207.
0   total system mass =   21.130     lb, total system volume =   9.1955     ft3
0   Vol.no.  pressure     voidg          tempf          tempg       sat. temp.  noncond.   boron den.    uf            ug        vol-flag
            (lbf/in2)                   (degF)         (degF)        (degF)    vapor qual. (lb/ft3)   (Btu/lb)      (Btu/lb)    tlpvbfe
0System  1    *none*  mass =   21.130     lb    volume=   9.1955     ft3
 S/G      tmdpvol  component
 101-010000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0011000
 MISC     pipe     component
 103-010000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-020000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-030000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-040000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-050000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-060000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-070000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-080000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-090000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-100000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-110000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-120000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-130000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-140000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-150000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-160000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-170000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-180000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-190000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-200000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-210000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-220000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-230000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-240000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-250000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-260000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-270000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-280000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-290000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-300000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
 103-310000   1020.1      0.99988       547.07         547.071     547.071       0.000   0.00        541.64        1109.5      0000000
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Attachment F: RELAP Output File - Hot Shut Down Conditions

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103-320000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-330000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-340000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-350000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-360000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-370000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-380000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-390000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-400000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-410000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-420000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-430000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-440000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-450000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-460000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-470000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-480000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-490000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-500000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-510000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-520000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-530000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-540000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-550000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-560000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-570000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-580000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-590000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-600000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-610000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-620000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-630000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-640000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-650000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-660000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-670000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-680000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-690000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-700000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-710000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-720000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-730000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-740000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
103-750000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
3PIPE    pipe     component
105-010000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
105-020000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
105-030000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5     0000000
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Attachment F: RELAP Output File - Hot Shut Down Conditions

105-040000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-050000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-060000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-070000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-080000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-090000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-100000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-110000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-120000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-130000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-140000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-150000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-160000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-170000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-180000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-190000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-200000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-210000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-220000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-230000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-240000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-250000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-260000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-270000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-280000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-290000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-300000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-310000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-320000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-330000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-340000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-350000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-360000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-370000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-380000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-390000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-400000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-410000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-420000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-430000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-440000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-450000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-460000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-470000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-480000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-490000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-500000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
105-510000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000

Attachment F: RELAP Output File - Hot Shut Down Conditions

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105-520000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-530000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-540000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-550000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-560000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-570000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-580000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-590000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-600000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-610000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-620000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-630000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-640000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-650000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-660000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-670000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-680000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-690000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-700000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-710000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-720000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-730000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-740000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-750000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-760000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-770000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-780000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-790000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-800000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-810000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-820000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-830000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-840000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-850000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-860000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-870000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-880000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-890000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-900000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-910000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
105-920000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
1A       pipe      component
107-010000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
107-020000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
107-030000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
107-040000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
107-050000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
107-060000   1020.1      0.99988      547.07      547.071     547.071     0.000   0.00      541.64      1109.5      0000000
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Attachment F: RELAP Output File - Hot Shut Down Conditions

107-070000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-080000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-090000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-100000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-110000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-120000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-130000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-140000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-150000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-160000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-170000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-180000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-190000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-200000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-210000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-220000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-230000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-240000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-250000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-260000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-270000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-280000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-290000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-300000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-310000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-320000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-330000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-340000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-350000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-360000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-370000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-380000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
107-390000	1020.1	0.99988	547.07	547.071	547.071	0.000	0.00	541.64	1109.5	0000000
ATM	tmdpvol	component								
109-010000	14.700	1.0000	70.000	70.000	70.000	0.984	0.00	38.071	172.44	0011000

0 Vol.no.	rhof (lb/ft3)	rhog (lb/ft3)	liq.v.vel. (ft/sec)	vap.v.vel. (ft/sec)	sounde (ft/sec)	static qual.	tot.ht.inp. (Btu/sec)	vap.ht.inp. (Btu/sec)	vapor gen. flow (lb/ft3-sec)	map
101-010000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-010000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-020000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-030000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-040000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-050000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-060000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-070000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-080000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-090000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-100000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1

Attachment F: RELAP Output File - Hot Shut Down Conditions

103-110000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-120000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-130000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-140000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-150000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-160000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-170000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-180000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-190000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-200000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-210000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-220000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-230000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-240000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-250000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-260000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-270000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-280000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-290000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-300000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-310000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-320000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-330000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-340000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-350000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-360000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-370000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-380000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-390000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-400000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-410000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-420000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-430000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-440000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-450000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-460000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-470000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-480000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-490000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-500000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-510000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-520000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-530000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-540000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-550000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-560000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-570000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-580000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1

Attachment F: RELAP Output File - Hot Shut Down Conditions

103-590000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-600000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-610000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-620000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-630000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-640000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-650000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-660000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-670000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
103-680000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-690000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-700000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-710000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-720000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-730000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-740000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
103-750000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-010000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-020000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-030000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-040000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-050000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-060000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-070000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-080000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-090000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-100000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-110000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-120000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-130000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-140000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-150000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-160000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-170000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-180000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-190000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-200000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-210000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-220000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-230000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-240000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-250000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-260000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-270000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-280000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-290000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-300000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-310000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2

Attachment F: RELAP Output File - Hot Shut Down Conditions

105-320000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-330000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-340000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-350000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-360000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-370000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-380000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-390000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-400000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-410000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-420000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-430000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-440000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-450000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-460000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-470000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-480000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-490000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-500000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-510000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-520000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-530000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-540000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-550000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-560000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-570000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-580000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-590000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-600000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-610000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-620000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-630000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-640000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-650000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-660000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-670000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-680000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-690000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-700000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-710000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-720000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-730000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-740000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-750000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-760000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-770000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-780000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-790000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2

Attachment F: RELAP Output File - Hot Shut Down Conditions

105-800000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-810000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-820000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-830000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-840000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-850000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-860000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-870000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-880000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-890000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-900000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-910000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
105-920000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-010000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-020000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-030000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-040000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-050000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-060000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-070000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-080000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-090000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-100000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-110000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-120000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-130000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-140000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-150000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-160000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-170000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-180000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	2
107-190000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-200000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-210000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-220000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-230000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-240000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-250000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-260000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-270000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-280000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-290000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-300000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-310000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-320000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-330000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-340000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1
107-350000	46.142	2.2923	0.0000	0.0000	1478.3	0.99750	0.0000	0.0000	0.0000	1

Attachment F: RELAP Output File - Hot Shut Down Conditions

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 107-360000   46.142       2.2923       0.0000       0.0000       1478.3       0.99750       0.0000       0.0000       0.0000       1
 107-370000   46.142       2.2923       0.0000       0.0000       1478.3       0.99750       0.0000       0.0000       0.0000       2
 107-380000   46.142       2.2923       0.0000       0.0000       1478.3       0.99750       0.0000       0.0000       0.0000       2
 107-390000   46.142       2.2923       0.0000       0.0000       1478.3       0.99750       0.0000       0.0000       0.0000       2
 109-010000   62.301      7.42050E-02   0.0000       0.0000       986.94       0.99900       0.0000       0.0000       0.0000       2
0   Jun.no.   from vol.     to vol.  liq.j.vel.   vap.j.vel.   mass flow    jun.area     throat      jun-flag flow  no. advs.  choked
                                     (ft/sec)     (ft/sec)     (lb/sec)     (ft2)        ratio        efvcahs regi last  edit   total
0System  1    *none*
 LOSS     sngljun  component
 102-000000  101-010002  103-010001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 MISC     pipe     component
 103-010000  103-010002  103-020001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-020000  103-020002  103-030001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-030000  103-030002  103-040001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-040000  103-040002  103-050001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-050000  103-050002  103-060001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-060000  103-060002  103-070001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-070000  103-070002  103-080001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-080000  103-080002  103-090001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-090000  103-090002  103-100001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-100000  103-100002  103-110001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-110000  103-110002  103-120001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-120000  103-120002  103-130001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-130000  103-130002  103-140001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-140000  103-140002  103-150001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-150000  103-150002  103-160001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-160000  103-160002  103-170001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-170000  103-170002  103-180001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-180000  103-180002  103-190001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-190000  103-190002  103-200001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-200000  103-200002  103-210001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-210000  103-210002  103-220001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-220000  103-220002  103-230001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-230000  103-230002  103-240001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-240000  103-240002  103-250001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-250000  103-250002  103-260001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-260000  103-260002  103-270001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-270000  103-270002  103-280001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-280000  103-280002  103-290001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-290000  103-290002  103-300001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-300000  103-300002  103-310001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-310000  103-310002  103-320001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-320000  103-320002  103-330001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-330000  103-330002  103-340001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-340000  103-340002  103-350001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-350000  103-350002  103-360001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-360000  103-360002  103-370001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
 103-370000  103-370002  103-380001   0.0000       0.0000       0.0000       5.13000E-02   1.0000      0001000   x    0      0      0
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Attachment F: RELAP Output File - Hot Shut Down Conditions

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103-380000  103-380002  103-390001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-390000  103-390002  103-400001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-400000  103-400002  103-410001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-410000  103-410002  103-420001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-420000  103-420002  103-430001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-430000  103-430002  103-440001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-440000  103-440002  103-450001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-450000  103-450002  103-460001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-460000  103-460002  103-470001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-470000  103-470002  103-480001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-480000  103-480002  103-490001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-490000  103-490002  103-500001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-500000  103-500002  103-510001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-510000  103-510002  103-520001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-520000  103-520002  103-530001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-530000  103-530002  103-540001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-540000  103-540002  103-550001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-550000  103-550002  103-560001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-560000  103-560002  103-570001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-570000  103-570002  103-580001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-580000  103-580002  103-590001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-590000  103-590002  103-600001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-600000  103-600002  103-610001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-610000  103-610002  103-620001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-620000  103-620002  103-630001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-630000  103-630002  103-640001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-640000  103-640002  103-650001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-650000  103-650002  103-660001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-660000  103-660002  103-670001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-670000  103-670002  103-680001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-680000  103-680002  103-690001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-690000  103-690002  103-700001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-700000  103-700002  103-710001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-710000  103-710002  103-720001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-720000  103-720002  103-730001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-730000  103-730002  103-740001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
103-740000  103-740002  103-750001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
60DEG    sngljun  component
104-000000  103-750002  105-010001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
3PIPE    pipe     component
105-010000  105-010002  105-020001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-020000  105-020002  105-030001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-030000  105-030002  105-040001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-040000  105-040002  105-050001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-050000  105-050002  105-060001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-060000  105-060002  105-070001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-070000  105-070002  105-080001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-080000  105-080002  105-090001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

105-090000	105-090002	105-100001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-100000	105-100002	105-110001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-110000	105-110002	105-120001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-120000	105-120002	105-130001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-130000	105-130002	105-140001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-140000	105-140002	105-150001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-150000	105-150002	105-160001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-160000	105-160002	105-170001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-170000	105-170002	105-180001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-180000	105-180002	105-190001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-190000	105-190002	105-200001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-200000	105-200002	105-210001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-210000	105-210002	105-220001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-220000	105-220002	105-230001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-230000	105-230002	105-240001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-240000	105-240002	105-250001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-250000	105-250002	105-260001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-260000	105-260002	105-270001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-270000	105-270002	105-280001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-280000	105-280002	105-290001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-290000	105-290002	105-300001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-300000	105-300002	105-310001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-310000	105-310002	105-320001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-320000	105-320002	105-330001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-330000	105-330002	105-340001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-340000	105-340002	105-350001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-350000	105-350002	105-360001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-360000	105-360002	105-370001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-370000	105-370002	105-380001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-380000	105-380002	105-390001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-390000	105-390002	105-400001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-400000	105-400002	105-410001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-410000	105-410002	105-420001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-420000	105-420002	105-430001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-430000	105-430002	105-440001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-440000	105-440002	105-450001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-450000	105-450002	105-460001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-460000	105-460002	105-470001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-470000	105-470002	105-480001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-480000	105-480002	105-490001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-490000	105-490002	105-500001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-500000	105-500002	105-510001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-510000	105-510002	105-520001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-520000	105-520002	105-530001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-530000	105-530002	105-540001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-540000	105-540002	105-550001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-550000	105-550002	105-560001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-560000	105-560002	105-570001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
105-570000  105-570002  105-580001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-580000  105-580002  105-590001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-590000  105-590002  105-600001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-600000  105-600002  105-610001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-610000  105-610002  105-620001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-620000  105-620002  105-630001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-630000  105-630002  105-640001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-640000  105-640002  105-650001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-650000  105-650002  105-660001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-660000  105-660002  105-670001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-670000  105-670002  105-680001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-680000  105-680002  105-690001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-690000  105-690002  105-700001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-700000  105-700002  105-710001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-710000  105-710002  105-720001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-720000  105-720002  105-730001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-730000  105-730002  105-740001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-740000  105-740002  105-750001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-750000  105-750002  105-760001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-760000  105-760002  105-770001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-770000  105-770002  105-780001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-780000  105-780002  105-790001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-790000  105-790002  105-800001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-800000  105-800002  105-810001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-810000  105-810002  105-820001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-820000  105-820002  105-830001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-830000  105-830002  105-840001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-840000  105-840002  105-850001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-850000  105-850002  105-860001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-860000  105-860002  105-870001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-870000  105-870002  105-880001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-880000  105-880002  105-890001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-890000  105-890002  105-900001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-900000  105-900002  105-910001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
105-910000  105-910002  105-920001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
ELBOW     sngljun  component
106-000000  105-920002  107-010001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
1A        pipe     component
107-010000  107-010002  107-020001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-020000  107-020002  107-030001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-030000  107-030002  107-040001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-040000  107-040002  107-050001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-050000  107-050002  107-060001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-060000  107-060002  107-070001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-070000  107-070002  107-080001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-080000  107-080002  107-090001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-090000  107-090002  107-100001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-100000  107-100002  107-110001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
 107-110000  107-110002  107-120001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-120000  107-120002  107-130001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-130000  107-130002  107-140001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-140000  107-140002  107-150001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-150000  107-150002  107-160001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-160000  107-160002  107-170001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-170000  107-170002  107-180001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-180000  107-180002  107-190001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-190000  107-190002  107-200001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-200000  107-200002  107-210001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-210000  107-210002  107-220001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-220000  107-220002  107-230001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-230000  107-230002  107-240001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-240000  107-240002  107-250001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-250000  107-250002  107-260001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-260000  107-260002  107-270001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-270000  107-270002  107-280001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-280000  107-280002  107-290001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-290000  107-290002  107-300001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-300000  107-300002  107-310001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-310000  107-310002  107-320001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-320000  107-320002  107-330001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-330000  107-330002  107-340001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-340000  107-340002  107-350001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-350000  107-350002  107-360001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-360000  107-360002  107-370001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-370000  107-370002  107-380001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 107-380000  107-380002  107-390001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0      0      0
 1A       sngljun  component
 108-000000  107-390002  109-010001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0000100  x  0      0      0
0   Jun.no.   voidfj       voidgj       fij          fwalfj      fwalgj      fjunft      fjunrt      formfj      formgj      no.   advs.  ccfl
                                       (lb-s2/ft5)                                                                          last  edit   total
 102-000000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
 103-010000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
 103-020000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
 103-030000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
 103-040000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
 103-050000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
 103-060000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
 103-070000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
 103-080000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
 103-090000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
 103-100000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
 103-110000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
 103-120000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
 103-130000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
 103-140000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
 103-150000  1.24496E-04  0.99988      0.0000       0.00        0.00        0.00        0.00        0.00        0.00        0     0      0
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

103-160000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-170000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-180000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-190000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-200000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-210000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-220000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-230000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-240000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-250000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-260000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-270000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-280000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-290000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-300000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-310000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-320000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-330000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-340000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-350000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-360000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-370000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-380000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-390000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-400000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-410000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-420000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-430000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-440000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-450000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-460000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-470000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-480000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-490000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-500000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-510000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-520000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-530000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-540000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-550000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-560000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-570000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-580000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-590000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-600000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-610000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-620000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-630000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

Attachment F: RELAP Output File - Hot Shut Down Conditions

103-640000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-650000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-660000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-670000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-680000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-690000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-700000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-710000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-720000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-730000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-740000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
104-000000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-010000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-020000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-030000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-040000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-050000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-060000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-070000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-080000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-090000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-100000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-110000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-120000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-130000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-140000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-150000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-160000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-170000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-180000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-190000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-200000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-210000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-220000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-230000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-240000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-250000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-260000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-270000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-280000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-290000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-300000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-310000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-320000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-330000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-340000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-350000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-360000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

Attachment F: RELAP Output File - Hot Shut Down Conditions

105-370000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-380000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-390000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-400000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-410000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-420000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-430000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-440000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-450000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-460000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-470000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-480000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-490000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-500000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-510000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-520000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-530000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-540000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-550000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-560000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-570000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-580000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-590000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-600000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-610000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-620000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-630000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-640000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-650000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-660000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-670000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-680000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-690000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-700000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-710000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-720000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-730000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-740000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-750000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-760000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-770000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-780000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-790000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-800000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-810000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-820000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-830000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-840000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

Attachment F: RELAP Output File - Hot Shut Down Conditions

105-850000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-860000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-870000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-880000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-890000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-900000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-910000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
106-000000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-010000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-020000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-030000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-040000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-050000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-060000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-070000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-080000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-090000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-100000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-110000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-120000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-130000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-140000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-150000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-160000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-170000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-180000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-190000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-200000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-210000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-220000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-230000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-240000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-250000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-260000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-270000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-280000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-290000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-300000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-310000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-320000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-330000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-340000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-350000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-360000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-370000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
107-380000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
108-000000	1.24496E-04	0.99988	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

0$$$$$$$$ Input processing completed successfully.

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
 gerr= 1.000000000000000E-12
0                              List of dynamic storage information for transient calculation
0 num.    filid  file index   name      file size
    2        3.           2 tstpct.h           29
   12       -4.          31 miedtc.h            4
   28        5.          35 sysdatc.h           1
    5        8.          36 jundat.h        30016
    4        7.       30052 voldat.h        71761
    3        6.      101813 cmpdat.h          278
   30        9.      102091 lpdat.h            48
   10       11.      102139 invtbl.h         2693
   43       12.      104832                     1
   20       13.      104833 statc.h          5411
   14       14.      110244 htsttab.h         209
   16       15.      110453 miedtc.h          119
    6      -10.      110572 stcom.h       1053039
   13      -16.     1163611 tdpptr.h            3
   35      -17.     1163614 lvectr.h         1281
   40       18.     1164895 Sparmat.h        2807
    1      -19.     1167702 scrtch.h        60837
1  RELAP5/3.3            Reactor Loss Of Coolant Analysis Program
 Copyright (C) 2001  Information Systems Laboratories, Inc.
  POINT BEACH HELB - Hot Shutdown, 99.75% quality steam                        29-Aug-08    20:04:51
0MAJOR EDIT !!!time=    0.00000     sec
0 advancement      total  between edits|
 attempted:          0            0   |  min.dt=    0.00000     sec   last dt=   1.000000E-07 sec    emass=    0.00000     lb
  repeated:          0            0   |  max.dt=    0.00000     sec   crnt.dt=    0.00000     sec    tmass=    21.1295     lb
 successful:         0            0   |  avg.dt=    0.00000     sec  merr.est=    0.00000            em/tm=    0.00000
 requested:          1            1   |  req.dt=   1.000000E-02 sec       cpu=   0.171875     sec     time=    0.00000     sec
0System  1    *none*  mass=   21.130     lb    mass error =   0.0000     lb   merr.est.=   0.0000
0   Vol.no.  pressure      voidf        voidg        voidgo        tempf      tempg     satt-part   uf          ug        vol-flag
            (psia)                                                (degF)     (degF)     (degF)    (Btu/lb)    (Btu/lb)    tlpvbfe
 S/G      tmdpvol
 101-010000   1020.1      1.24496E-04  0.99988      0.99988       547.071    547.071    547.071   541.64      1109.5     0011000
 MISC     pipe
 103-010000   1020.1      1.24496E-04  0.99988      0.99988       547.071    547.071    547.071   541.64      1109.5     0000000
 103-020000   1020.1      1.24496E-04  0.99988      0.99988       547.071    547.071    547.071   541.64      1109.5     0000000
 103-030000   1020.1      1.24496E-04  0.99988      0.99988       547.071    547.071    547.071   541.64      1109.5     0000000
 103-040000   1020.1      1.24496E-04  0.99988      0.99988       547.071    547.071    547.071   541.64      1109.5     0000000
 103-050000   1020.1      1.24496E-04  0.99988      0.99988       547.071    547.071    547.071   541.64      1109.5     0000000
 103-060000   1020.1      1.24496E-04  0.99988      0.99988       547.071    547.071    547.071   541.64      1109.5     0000000
 103-070000   1020.1      1.24496E-04  0.99988      0.99988       547.071    547.071    547.071   541.64      1109.5     0000000
 103-080000   1020.1      1.24496E-04  0.99988      0.99988       547.071    547.071    547.071   541.64      1109.5     0000000
 103-090000   1020.1      1.24496E-04  0.99988      0.99988       547.071    547.071    547.071   541.64      1109.5     0000000
 103-100000   1020.1      1.24496E-04  0.99988      0.99988       547.071    547.071    547.071   541.64      1109.5     0000000
 103-110000   1020.1      1.24496E-04  0.99988      0.99988       547.071    547.071    547.071   541.64      1109.5     0000000
 103-120000   1020.1      1.24496E-04  0.99988      0.99988       547.071    547.071    547.071   541.64      1109.5     0000000
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

103-130000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-140000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-150000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-160000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-170000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-180000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-190000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-200000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-210000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-220000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-230000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-240000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-250000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-260000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-270000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-280000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-290000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-300000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-310000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-320000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-330000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-340000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-350000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-360000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-370000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-380000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-390000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-400000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-410000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-420000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-430000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-440000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-450000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-460000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-470000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-480000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-490000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-500000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-510000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-520000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-530000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-540000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-550000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-560000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-570000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-580000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-590000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-600000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000

Attachment F: RELAP Output File - Hot Shut Down Conditions

103-610000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-620000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-630000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-640000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-650000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-660000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-670000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-680000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-690000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-700000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-710000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-720000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-730000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-740000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
103-750000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
0 Vol.no.	pressure (psia)	voidf	voidg	voidgo	tempf (degF)	tempg (degF)	satt-part (degF)	uf (Btu/lb)	ug (Btu/lb)	vol-flag tlpvbfe
3PIPE	pipe									
105-010000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-020000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-030000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-040000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-050000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-060000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-070000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-080000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-090000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-100000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-110000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-120000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-130000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-140000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-150000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-160000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-170000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-180000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-190000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-200000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-210000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-220000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-230000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-240000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-250000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-260000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-270000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-280000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-290000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-300000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000

Attachment F: RELAP Output File - Hot Shut Down Conditions

105-310000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-320000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-330000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-340000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-350000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-360000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-370000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-380000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-390000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-400000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-410000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-420000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-430000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-440000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-450000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-460000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-470000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-480000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-490000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-500000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-510000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-520000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-530000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-540000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-550000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-560000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-570000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-580000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-590000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-600000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-610000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-620000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-630000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-640000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-650000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-660000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-670000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-680000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-690000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-700000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-710000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-720000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-730000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-740000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-750000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-760000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-770000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-780000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000

Attachment F: RELAP Output File - Hot Shut Down Conditions

105-790000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-800000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-810000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-820000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-830000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-840000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-850000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-860000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-870000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-880000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-890000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-900000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-910000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
105-920000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
0 Vol.no.	pressure (psia)	voidf	voidg	voidgo	tempf (degF)	tempg (degF)	satt-part (degF)	uf (Btu/lb)	ug (Btu/lb)	vol-flag tlpvbfe
1A pipe										
107-010000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-020000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-030000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-040000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-050000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-060000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-070000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-080000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-090000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-100000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-110000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-120000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-130000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-140000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-150000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-160000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-170000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-180000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-190000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-200000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-210000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-220000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-230000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-240000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-250000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-260000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-270000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-280000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-290000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-300000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000
107-310000	1020.1	1.24496E-04	0.99988	0.99988	547.071	547.071	547.071	541.64	1109.5	0000000

Attachment F: RELAP Output File - Hot Shut Down Conditions

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 107-320000   1020.1      1.24496E-04  0.99988      0.99988      547.071      547.071      547.071      541.64       1109.5      0000000
 107-330000   1020.1      1.24496E-04  0.99988      0.99988      547.071      547.071      547.071      541.64       1109.5      0000000
 107-340000   1020.1      1.24496E-04  0.99988      0.99988      547.071      547.071      547.071      541.64       1109.5      0000000
 107-350000   1020.1      1.24496E-04  0.99988      0.99988      547.071      547.071      547.071      541.64       1109.5      0000000
 107-360000   1020.1      1.24496E-04  0.99988      0.99988      547.071      547.071      547.071      541.64       1109.5      0000000
 107-370000   1020.1      1.24496E-04  0.99988      0.99988      547.071      547.071      547.071      541.64       1109.5      0000000
 107-380000   1020.1      1.24496E-04  0.99988      0.99988      547.071      547.071      547.071      541.64       1109.5      0000000
 107-390000   1020.1      1.24496E-04  0.99988      0.99988      547.071      547.071      547.071      541.64       1109.5      0000000
 ATM      tmdpvol
 109-010000   14.700      1.19226E-06   1.0000       1.0000       70.000       70.000       70.000      38.071       172.44      0011000
0System  1    *none*
0   Jun.no.   from vol.     to vol.  liq.j.vel.   vap.j.vel.   mass flow    jun.area     throat      jun-flag  flow no. advs. choked
                                     (ft/sec)     (ft/sec)     (lb/sec)     (ft2)        ratio       jefvcahs  regi last edit  total
 LOSS     sngljun
 102-000000  101-010002  103-010001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 MISC     pipe
 103-010000  103-010002  103-020001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-020000  103-020002  103-030001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-030000  103-030002  103-040001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-040000  103-040002  103-050001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-050000  103-050002  103-060001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-060000  103-060002  103-070001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-070000  103-070002  103-080001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-080000  103-080002  103-090001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-090000  103-090002  103-100001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-100000  103-100002  103-110001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-110000  103-110002  103-120001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-120000  103-120002  103-130001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-130000  103-130002  103-140001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-140000  103-140002  103-150001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-150000  103-150002  103-160001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-160000  103-160002  103-170001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-170000  103-170002  103-180001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-180000  103-180002  103-190001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-190000  103-190002  103-200001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-200000  103-200002  103-210001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-210000  103-210002  103-220001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-220000  103-220002  103-230001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-230000  103-230002  103-240001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-240000  103-240002  103-250001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-250000  103-250002  103-260001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-260000  103-260002  103-270001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-270000  103-270002  103-280001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-280000  103-280002  103-290001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-290000  103-290002  103-300001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-300000  103-300002  103-310001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-310000  103-310002  103-320001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
 103-320000  103-320002  103-330001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      00001000  x    0    0      0
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
103-330000  103-330002  103-340001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-340000  103-340002  103-350001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-350000  103-350002  103-360001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-360000  103-360002  103-370001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-370000  103-370002  103-380001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-380000  103-380002  103-390001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-390000  103-390002  103-400001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-400000  103-400002  103-410001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-410000  103-410002  103-420001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-420000  103-420002  103-430001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-430000  103-430002  103-440001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-440000  103-440002  103-450001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-450000  103-450002  103-460001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-460000  103-460002  103-470001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-470000  103-470002  103-480001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-480000  103-480002  103-490001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-490000  103-490002  103-500001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-500000  103-500002  103-510001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-510000  103-510002  103-520001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-520000  103-520002  103-530001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-530000  103-530002  103-540001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-540000  103-540002  103-550001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-550000  103-550002  103-560001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-560000  103-560002  103-570001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-570000  103-570002  103-580001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-580000  103-580002  103-590001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-590000  103-590002  103-600001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-600000  103-600002  103-610001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-610000  103-610002  103-620001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-620000  103-620002  103-630001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-630000  103-630002  103-640001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-640000  103-640002  103-650001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-650000  103-650002  103-660001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-660000  103-660002  103-670001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-670000  103-670002  103-680001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-680000  103-680002  103-690001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-690000  103-690002  103-700001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-700000  103-700002  103-710001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-710000  103-710002  103-720001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-720000  103-720002  103-730001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-730000  103-730002  103-740001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
103-740000  103-740002  103-750001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
0  Jun.no.   from vol.    to vol.   liq.j.vel.  vap.j.vel.  mass flow   jun.area     throat      jun-flag  flow no. advs. choked
                                    (ft/sec)    (ft/sec)    (lb/sec)    (ft2)        ratio       jefvcahs  regi last edit  total
60DEG    sngljun
104-000000  103-750002  105-010001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
3PIPE    pipe
105-010000  105-010002  105-020001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      00001000  x   0   0   0
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

105-020000	105-020002	105-030001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-030000	105-030002	105-040001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-040000	105-040002	105-050001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-050000	105-050002	105-060001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-060000	105-060002	105-070001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-070000	105-070002	105-080001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-080000	105-080002	105-090001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-090000	105-090002	105-100001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-100000	105-100002	105-110001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-110000	105-110002	105-120001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-120000	105-120002	105-130001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-130000	105-130002	105-140001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-140000	105-140002	105-150001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-150000	105-150002	105-160001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-160000	105-160002	105-170001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-170000	105-170002	105-180001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-180000	105-180002	105-190001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-190000	105-190002	105-200001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-200000	105-200002	105-210001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-210000	105-210002	105-220001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-220000	105-220002	105-230001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-230000	105-230002	105-240001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-240000	105-240002	105-250001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-250000	105-250002	105-260001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-260000	105-260002	105-270001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-270000	105-270002	105-280001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-280000	105-280002	105-290001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-290000	105-290002	105-300001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-300000	105-300002	105-310001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-310000	105-310002	105-320001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-320000	105-320002	105-330001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-330000	105-330002	105-340001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-340000	105-340002	105-350001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-350000	105-350002	105-360001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-360000	105-360002	105-370001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-370000	105-370002	105-380001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-380000	105-380002	105-390001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-390000	105-390002	105-400001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-400000	105-400002	105-410001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-410000	105-410002	105-420001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-420000	105-420002	105-430001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-430000	105-430002	105-440001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-440000	105-440002	105-450001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-450000	105-450002	105-460001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-460000	105-460002	105-470001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-470000	105-470002	105-480001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-480000	105-480002	105-490001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-490000	105-490002	105-500001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0

Attachment F: RELAP Output File - Hot Shut Down Conditions

105-500000	105-500002	105-510001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-510000	105-510002	105-520001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-520000	105-520002	105-530001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-530000	105-530002	105-540001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-540000	105-540002	105-550001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-550000	105-550002	105-560001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-560000	105-560002	105-570001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-570000	105-570002	105-580001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-580000	105-580002	105-590001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-590000	105-590002	105-600001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-600000	105-600002	105-610001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-610000	105-610002	105-620001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-620000	105-620002	105-630001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-630000	105-630002	105-640001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-640000	105-640002	105-650001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-650000	105-650002	105-660001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-660000	105-660002	105-670001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-670000	105-670002	105-680001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-680000	105-680002	105-690001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-690000	105-690002	105-700001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-700000	105-700002	105-710001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-710000	105-710002	105-720001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-720000	105-720002	105-730001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-730000	105-730002	105-740001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-740000	105-740002	105-750001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-750000	105-750002	105-760001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-760000	105-760002	105-770001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-770000	105-770002	105-780001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-780000	105-780002	105-790001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-790000	105-790002	105-800001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-800000	105-800002	105-810001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-810000	105-810002	105-820001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-820000	105-820002	105-830001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-830000	105-830002	105-840001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-840000	105-840002	105-850001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-850000	105-850002	105-860001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-860000	105-860002	105-870001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-870000	105-870002	105-880001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-880000	105-880002	105-890001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-890000	105-890002	105-900001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-900000	105-900002	105-910001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-910000	105-910002	105-920001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
0 Jun.no.	from vol.	to vol.	liq.j.vel. (ft/sec)	vap.j.vel. (ft/sec)	mass flow (lb/sec)	jun.area (ft2)	throat ratio	jun-flag jefvcahs	flow regi	no. last	advs. edit	choked total
ELBOW sngljun												
106-000000	105-920002	107-010001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
1A pipe												
107-010000	107-010002	107-020001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
 107-020000  107-020002  107-030001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-030000  107-030002  107-040001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-040000  107-040002  107-050001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-050000  107-050002  107-060001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-060000  107-060002  107-070001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-070000  107-070002  107-080001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-080000  107-080002  107-090001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-090000  107-090002  107-100001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-100000  107-100002  107-110001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-110000  107-110002  107-120001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-120000  107-120002  107-130001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-130000  107-130002  107-140001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-140000  107-140002  107-150001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-150000  107-150002  107-160001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-160000  107-160002  107-170001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-170000  107-170002  107-180001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-180000  107-180002  107-190001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-190000  107-190002  107-200001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-200000  107-200002  107-210001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-210000  107-210002  107-220001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-220000  107-220002  107-230001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-230000  107-230002  107-240001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-240000  107-240002  107-250001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-250000  107-250002  107-260001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-260000  107-260002  107-270001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-270000  107-270002  107-280001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-280000  107-280002  107-290001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-290000  107-290002  107-300001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-300000  107-300002  107-310001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-310000  107-310002  107-320001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-320000  107-320002  107-330001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-330000  107-330002  107-340001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-340000  107-340002  107-350001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-350000  107-350002  107-360001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-360000  107-360002  107-370001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-370000  107-370002  107-380001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 107-380000  107-380002  107-390001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x   0     0     0
 1A       sngljun
 108-000000  107-390002  109-010001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00000100  x   0     0     0
0---Restart no.       0 written, block no.     0, at time=     0.00000    ---
0Number of elements in sparse matrix 1: original =  621, factored =  621     roundoff error =     1.000000E-12     ncount =      1
1 time        mflowj
 (sec)         108000000
               (lb/sec)

  0.00000        0.0000
 0.100014        44.217
 0.200460        38.259
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
  0.300271        38.844
  0.400042        38.653
  0.500220        38.424
  0.600039        38.236
  0.700313        38.204
  0.800579        38.194
  0.900261        38.190
   1.00052        38.188
   1.10020        38.187
   1.20046        38.187
   1.30014        38.187
   1.40040        38.187
   1.50008        38.187
   1.60034        38.187
   1.70001        38.187
   1.80027        38.187
   1.90053        38.187
   2.00021        38.187
   2.10047        38.187
   2.20015        38.187
   2.30041        38.187
   2.40009        38.187
   2.50035        38.187
   2.60002        38.187
   2.70028        38.187
   2.80054        38.187
   2.90022        38.187
   3.00048        38.187
   3.10016        38.187
   3.20042        38.187
   3.30010        38.187
   3.40036        38.187
   3.50003        38.187
   3.60029        38.187
   3.70055        38.187
   3.80023        38.187
   3.90049        38.187
   4.00017        38.187
   4.10043        38.187
   4.20011        38.187
   4.30037        38.187
   4.40004        38.187
   4.50030        38.187
   4.60056        38.187
   4.70024        38.187
   4.80050        38.187
   4.90018        38.187
1  RELAP5/3.3            Reactor Loss Of Coolant Analysis Program
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
 Copyright (C) 2001  Information Systems Laboratories, Inc.
  POINT BEACH HELB - Hot Shutdown, 99.75% quality steam                    29-Aug-08    20:04:51
0MAJOR EDIT !!!time=    7.00040     sec
0 advancement      total  between edits|
 attempted:      12073        12073   |  min.dt=   1.100000E-07 sec   last dt=   5.829079E-04 sec    emass=  -6.505260E-04 lb
  repeated:          0            0   |  max.dt=   6.732519E-04 sec   crnt.dt=   5.829079E-04 sec    tmass=    14.3330     lb
 successful:      12073        12073   |  avg.dt=   5.798390E-04 sec  merr.est=   2.999147E-12        em/tm=  -4.538674E-05
 requested:       12074        12073   |  req.dt=   1.000000E-02 sec       cpu=    212.359     sec     time=    7.00040     sec
0System  1    *none*  mass=   14.333     lb    mass error = -6.50526E-04 lb   merr.est.=  2.99915E-12
0  Vol.no.  pressure      voidf        voidg        voidgo        tempf      tempg     satt-part   uf          ug        vol-flag
            (psia)                                               (degF)     (degF)     (degF)    (Btu/lb)    (Btu/lb)    tlpvbfe
 S/G      tmdpvol
 101-010000   1020.1      1.24496E-04  0.99988      0.99988       547.071    547.071    547.071   541.64      1109.5     0011000
 MISC     pipe
 103-010000   965.54      2.47004E-04  0.99975      0.99975       541.317    536.926    540.412   534.61      1107.6     0000000
 103-020000   961.97      3.40438E-04  0.99966      0.99966       540.301    537.330    539.965   533.34      1108.5     0000000
 103-030000   960.05      3.73698E-04  0.99963      0.99963       540.087    537.437    539.725   533.08      1108.9     0000000
 103-040000   958.23      4.29048E-04  0.99957      0.99957       539.735    537.653    539.497   532.65      1109.4     0000000
 103-050000   951.87      4.72706E-04  0.99953      0.99953       539.085    536.842    538.698   531.86      1109.6     0000000
 103-060000   950.33      4.87319E-04  0.99951      0.99951       538.811    536.883    538.504   531.52      1109.9     0000000
 103-070000   948.97      5.44533E-04  0.99946      0.99946       538.521    536.940    538.332   531.16      1110.1     0000000
 103-080000   942.68      5.52428E-04  0.99945      0.99945       537.877    536.050    537.536   530.39      1110.2     0000000
 103-090000   940.83      5.66316E-04  0.99943      0.99943       537.559    535.988    537.301   529.99      1110.4     0000000
 103-100000   939.17      5.72490E-04  0.99943      0.99943       537.430    535.833    537.089   529.84      1110.5     0000000
 103-110000   937.52      5.77026E-04  0.99942      0.99942       537.305    535.659    536.878   529.69      1110.6     0000000
 103-120000   935.86      5.83027E-04  0.99942      0.99942       537.162    535.478    536.668   529.52      1110.7     0000000
 103-130000   934.21      5.81791E-04  0.99942      0.99942       537.006    535.290    536.456   529.34      1110.7     0000000
 103-140000   932.55      6.08276E-04  0.99939      0.99939       536.783    535.114    536.244   529.06      1110.8     0000000
 103-150000   925.95      6.30731E-04  0.99937      0.99937       535.878    534.074    535.397   527.96      1110.8     0000000
 103-160000   923.99      6.45354E-04  0.99935      0.99935       535.408    533.982    535.144   527.38      1111.0     0000000
 103-170000   922.19      6.54198E-04  0.99935      0.99935       535.127    533.846    534.912   527.04      1111.2     0000000
 103-180000   920.41      6.59520E-04  0.99934      0.99934       534.926    533.662    534.682   526.79      1111.2     0000000
 103-190000   918.62      6.63131E-04  0.99934      0.99934       534.755    533.452    534.451   526.59      1111.3     0000000
 103-200000   916.84      6.65805E-04  0.99933      0.99933       534.600    533.227    534.219   526.41      1111.4     0000000
 103-210000   915.05      6.67989E-04  0.99933      0.99933       534.456    532.993    533.987   526.24      1111.4     0000000
 103-220000   913.26      6.69894E-04  0.99933      0.99933       534.309    532.754    533.755   526.06      1111.4     0000000
 103-230000   911.47      6.72417E-04  0.99933      0.99933       534.144    532.516    533.521   525.86      1111.5     0000000
 103-240000   909.67      6.73337E-04  0.99933      0.99933       533.965    532.277    533.286   525.65      1111.5     0000000
 103-250000   907.86      6.80407E-04  0.99932      0.99932       533.775    532.039    533.051   525.42      1111.6     0000000
 103-260000   906.06      6.66054E-04  0.99933      0.99933       533.576    531.799    532.815   525.18      1111.6     0000000
 103-270000   904.24      7.30735E-04  0.99927      0.99927       532.937    531.639    532.577   524.39      1111.7     0000000
 103-280000   897.46      7.17161E-04  0.99928      0.99928       532.151    530.458    531.685   523.45      1111.6     0000000
 103-290000   895.51      7.22250E-04  0.99928      0.99928       531.756    530.313    531.429   522.96      1111.8     0000000
 103-300000   893.78      7.25991E-04  0.99927      0.99927       531.589    530.123    531.200   522.76      1111.9     0000000
 103-310000   892.06      7.21729E-04  0.99928      0.99928       531.473    529.906    530.972   522.63      1111.9     0000000
 103-320000   890.35      7.50684E-04  0.99925      0.99925       531.164    529.733    530.745   522.25      1112.0     0000000
 103-330000   883.42      7.70202E-04  0.99923      0.99923       530.300    528.581    529.824   521.21      1112.0     0000000
 103-340000   881.31      7.82093E-04  0.99922      0.99922       529.821    528.455    529.542   520.63      1112.2     0000000
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

103-350000	879.40	7.89997E-04	0.99921	0.99921	529.484	528.308	529.286	520.22	1112.3	0000000
103-360000	877.49	7.95156E-04	0.99920	0.99920	529.218	528.118	529.030	519.90	1112.4	0000000
103-370000	875.58	7.98363E-04	0.99920	0.99920	528.994	527.894	528.774	519.63	1112.5	0000000
103-380000	873.67	8.00557E-04	0.99920	0.99920	528.787	527.652	528.518	519.38	1112.6	0000000
103-390000	871.76	8.02193E-04	0.99920	0.99920	528.589	527.398	528.260	519.15	1112.6	0000000
103-400000	869.85	8.03494E-04	0.99920	0.99920	528.396	527.137	528.002	518.92	1112.7	0000000
103-410000	867.93	8.04670E-04	0.99920	0.99920	528.205	526.870	527.742	518.69	1112.7	0000000
103-420000	866.00	8.05554E-04	0.99919	0.99919	528.018	526.599	527.482	518.47	1112.8	0000000
103-430000	864.07	8.07087E-04	0.99919	0.99919	527.824	526.326	527.220	518.24	1112.8	0000000
103-440000	862.14	8.06210E-04	0.99919	0.99919	527.652	526.048	526.958	518.04	1112.8	0000000
103-450000	860.20	8.13747E-04	0.99919	0.99919	527.390	525.783	526.694	517.72	1112.9	0000000
103-460000	858.26	7.94026E-04	0.99921	0.99921	527.213	525.501	526.429	517.51	1112.9	0000000
103-470000	856.31	8.69414E-04	0.99913	0.99913	526.549	525.301	526.163	516.70	1113.0	0000000
103-480000	848.97	8.44596E-04	0.99916	0.99916	525.642	523.998	525.157	515.62	1112.9	0000000
103-490000	846.56	8.47296E-04	0.99915	0.99915	525.167	523.786	524.825	515.04	1113.1	0000000
103-500000	844.40	8.48485E-04	0.99915	0.99915	524.971	523.519	524.527	514.81	1113.2	0000000
103-510000	842.25	8.49150E-04	0.99915	0.99915	524.827	523.226	524.230	514.64	1113.2	0000000
103-520000	840.11	8.50125E-04	0.99915	0.99915	524.656	522.931	523.933	514.45	1113.3	0000000
103-530000	837.96	8.51325E-04	0.99915	0.99915	524.462	522.634	523.635	514.22	1113.3	0000000
103-540000	835.80	8.52664E-04	0.99915	0.99915	524.247	522.335	523.335	513.96	1113.4	0000000
103-550000	833.64	8.54088E-04	0.99915	0.99915	524.015	522.035	523.033	513.69	1113.4	0000000
103-560000	831.47	8.55564E-04	0.99914	0.99914	523.769	521.733	522.730	513.40	1113.5	0000000
103-570000	829.29	8.57069E-04	0.99914	0.99914	523.512	521.429	522.426	513.09	1113.5	0000000
103-580000	827.11	8.58588E-04	0.99914	0.99914	523.245	521.124	522.120	512.77	1113.6	0000000
103-590000	824.92	8.60111E-04	0.99914	0.99914	522.971	520.816	521.812	512.45	1113.6	0000000
103-600000	822.72	8.61626E-04	0.99914	0.99914	522.689	520.507	521.503	512.11	1113.7	0000000
103-610000	820.52	8.63147E-04	0.99914	0.99914	522.402	520.197	521.192	511.77	1113.7	0000000
103-620000	818.30	8.64595E-04	0.99914	0.99914	522.111	519.884	520.880	511.42	1113.8	0000000
103-630000	816.09	8.66244E-04	0.99913	0.99913	521.815	519.570	520.565	511.07	1113.8	0000000
103-640000	813.86	8.67054E-04	0.99913	0.99913	521.516	519.254	520.250	510.71	1113.9	0000000
103-650000	811.63	8.70895E-04	0.99913	0.99913	521.213	518.937	519.932	510.35	1113.9	0000000
103-660000	809.39	8.63202E-04	0.99914	0.99914	520.908	518.617	519.613	509.99	1114.0	0000000
103-670000	807.14	8.98047E-04	0.99910	0.99910	520.384	518.326	519.292	509.36	1114.0	0000000
103-680000	799.28	9.16769E-04	0.99908	0.99908	518.983	516.919	518.164	507.69	1114.0	0000000
103-690000	796.83	9.26687E-04	0.99907	0.99907	518.263	516.745	517.811	506.82	1114.2	0000000
103-700000	794.66	9.32256E-04	0.99907	0.99907	517.795	516.551	517.497	506.26	1114.3	0000000
103-710000	792.50	9.36228E-04	0.99906	0.99906	517.423	516.317	517.184	505.82	1114.4	0000000
103-720000	790.34	9.37438E-04	0.99906	0.99906	517.087	516.056	516.870	505.42	1114.5	0000000
103-730000	788.17	9.44037E-04	0.99906	0.99906	516.764	515.779	516.555	505.03	1114.6	0000000
103-740000	786.00	9.26623E-04	0.99907	0.99907	516.561	515.456	516.239	504.80	1114.7	0000000
103-750000	783.82	9.89471E-04	0.99901	0.99901	516.167	515.169	515.922	504.33	1114.7	0000000
0 Vol.no.	pressure (psia)	voidf	voidg	voidgo	tempf (degF)	tempg (degF)	satt-part (degF)	uf (Btu/lb)	ug (Btu/lb)	vol-flag tlpvbfe
3PIPE pipe										
105-010000	777.10	9.88653E-04	0.99901	0.99901	515.396	513.867	514.935	503.42	1114.6	0000000
105-020000	774.60	9.87556E-04	0.99901	0.99901	514.885	513.608	514.566	502.82	1114.7	0000000
105-030000	772.31	9.86260E-04	0.99901	0.99901	514.484	513.354	514.229	502.34	1114.9	0000000
105-040000	770.04	9.85058E-04	0.99901	0.99901	514.123	513.074	513.893	501.91	1114.9	0000000

Attachment F: RELAP Output File - Hot Shut Down Conditions

105-050000	767.77	9.84018E-04	0.99902	0.99902	513.778	512.776	513.555	501.50	1115.0	0000000
105-060000	765.49	9.83142E-04	0.99902	0.99902	513.437	512.466	513.217	501.10	1115.1	0000000
105-070000	763.20	9.82411E-04	0.99902	0.99902	513.097	512.146	512.876	500.70	1115.2	0000000
105-080000	760.91	9.81806E-04	0.99902	0.99902	512.757	511.818	512.534	500.30	1115.2	0000000
105-090000	758.61	9.81307E-04	0.99902	0.99902	512.415	511.486	512.189	499.90	1115.3	0000000
105-100000	756.31	9.80897E-04	0.99902	0.99902	512.071	511.148	511.843	499.49	1115.3	0000000
105-110000	753.99	9.80560E-04	0.99902	0.99902	511.725	510.807	511.495	499.08	1115.4	0000000
105-120000	751.67	9.80283E-04	0.99902	0.99902	511.377	510.461	511.145	498.68	1115.4	0000000
105-130000	749.34	9.80056E-04	0.99902	0.99902	511.027	510.113	510.793	498.26	1115.5	0000000
105-140000	747.00	9.79785E-04	0.99902	0.99902	510.682	509.759	510.439	497.86	1115.5	0000000
105-150000	744.65	9.79467E-04	0.99902	0.99902	510.339	509.401	510.082	497.46	1115.6	0000000
105-160000	742.30	9.79130E-04	0.99902	0.99902	509.995	509.039	509.724	497.05	1115.6	0000000
105-170000	739.93	9.78794E-04	0.99902	0.99902	509.647	508.675	509.363	496.64	1115.7	0000000
105-180000	737.56	9.78473E-04	0.99902	0.99902	509.296	508.307	509.000	496.23	1115.7	0000000
105-190000	735.17	9.78174E-04	0.99902	0.99902	508.941	507.938	508.634	495.82	1115.7	0000000
105-200000	732.78	9.77900E-04	0.99902	0.99902	508.581	507.567	508.266	495.39	1115.8	0000000
105-210000	730.38	9.77652E-04	0.99902	0.99902	508.217	507.193	507.896	494.97	1115.8	0000000
105-220000	727.97	9.77428E-04	0.99902	0.99902	507.848	506.818	507.524	494.53	1115.9	0000000
105-230000	725.54	9.77225E-04	0.99902	0.99902	507.476	506.441	507.148	494.10	1115.9	0000000
105-240000	723.11	9.77039E-04	0.99902	0.99902	507.099	506.062	506.771	493.66	1115.9	0000000
105-250000	720.67	9.76867E-04	0.99902	0.99902	506.719	505.681	506.391	493.21	1116.0	0000000
105-260000	718.22	9.76704E-04	0.99902	0.99902	506.335	505.299	506.008	492.76	1116.0	0000000
105-270000	715.76	9.76546E-04	0.99902	0.99902	505.948	504.914	505.623	492.31	1116.1	0000000
105-280000	713.28	9.76388E-04	0.99902	0.99902	505.556	504.526	505.235	491.85	1116.1	0000000
105-290000	710.80	9.76226E-04	0.99902	0.99902	505.162	504.137	504.844	491.39	1116.2	0000000
105-300000	708.31	9.76056E-04	0.99902	0.99902	504.764	503.745	504.450	490.93	1116.2	0000000
105-310000	705.80	9.75875E-04	0.99902	0.99902	504.363	503.351	504.054	490.46	1116.3	0000000
105-320000	703.28	9.75680E-04	0.99902	0.99902	503.959	502.954	503.655	489.99	1116.3	0000000
105-330000	700.76	9.75467E-04	0.99902	0.99902	503.551	502.554	503.253	489.51	1116.3	0000000
105-340000	698.22	9.75234E-04	0.99902	0.99902	503.140	502.152	502.848	489.03	1116.4	0000000
105-350000	695.67	9.74940E-04	0.99903	0.99903	502.731	501.746	502.440	488.55	1116.4	0000000
105-360000	693.10	9.74582E-04	0.99903	0.99903	502.321	501.336	502.029	488.08	1116.5	0000000
105-370000	690.53	9.74166E-04	0.99903	0.99903	501.910	500.923	501.615	487.60	1116.5	0000000
105-380000	687.94	9.73695E-04	0.99903	0.99903	501.495	500.506	501.198	487.12	1116.6	0000000
105-390000	685.35	9.73175E-04	0.99903	0.99903	501.078	500.085	500.778	486.63	1116.6	0000000
105-400000	682.74	9.72609E-04	0.99903	0.99903	500.658	499.661	500.355	486.14	1116.7	0000000
105-410000	680.11	9.71999E-04	0.99903	0.99903	500.234	499.234	499.928	485.65	1116.7	0000000
105-420000	677.48	9.71347E-04	0.99903	0.99903	499.807	498.802	499.498	485.15	1116.7	0000000
105-430000	674.83	9.70654E-04	0.99903	0.99903	499.377	498.368	499.064	484.65	1116.8	0000000
105-440000	672.17	9.69921E-04	0.99903	0.99903	498.944	497.930	498.628	484.15	1116.8	0000000
105-450000	669.49	9.69148E-04	0.99903	0.99903	498.507	497.488	498.187	483.65	1116.9	0000000
105-460000	666.80	9.68336E-04	0.99903	0.99903	498.067	497.042	497.743	483.13	1116.9	0000000
105-470000	664.10	9.67486E-04	0.99903	0.99903	497.623	496.593	497.295	482.62	1116.9	0000000
105-480000	661.39	9.66596E-04	0.99903	0.99903	497.175	496.140	496.844	482.10	1117.0	0000000
105-490000	658.66	9.65667E-04	0.99903	0.99903	496.724	495.683	496.389	481.58	1117.0	0000000
105-500000	655.91	9.64700E-04	0.99904	0.99904	496.269	495.222	495.930	481.05	1117.1	0000000
105-510000	653.15	9.63693E-04	0.99904	0.99904	495.810	494.758	495.467	480.52	1117.1	0000000
105-520000	650.38	9.62646E-04	0.99904	0.99904	495.347	494.289	495.000	479.99	1117.1	0000000

Attachment F: RELAP Output File - Hot Shut Down Conditions

105-530000	647.59	9.61560E-04	0.99904	0.99904	494.880	493.816	494.529	479.45	1117.2	0000000
105-540000	644.78	9.60434E-04	0.99904	0.99904	494.409	493.339	494.054	478.90	1117.2	0000000
105-550000	641.96	9.59268E-04	0.99904	0.99904	493.934	492.857	493.574	478.36	1117.2	0000000
105-560000	639.13	9.58061E-04	0.99904	0.99904	493.455	492.372	493.090	477.80	1117.3	0000000
105-570000	636.27	9.56813E-04	0.99904	0.99904	492.971	491.881	492.602	477.24	1117.3	0000000
105-580000	633.41	9.55524E-04	0.99904	0.99904	492.483	491.387	492.109	476.68	1117.4	0000000
105-590000	630.52	9.54194E-04	0.99905	0.99905	491.990	490.887	491.612	476.11	1117.4	0000000
105-600000	627.62	9.52822E-04	0.99905	0.99905	491.493	490.383	491.110	475.54	1117.4	0000000
105-610000	624.70	9.51407E-04	0.99905	0.99905	490.991	489.874	490.603	474.96	1117.5	0000000
105-620000	621.76	9.49951E-04	0.99905	0.99905	490.485	489.360	490.091	474.38	1117.5	0000000
105-630000	618.80	9.48451E-04	0.99905	0.99905	489.973	488.841	489.575	473.79	1117.5	0000000
105-640000	615.83	9.46908E-04	0.99905	0.99905	489.457	488.316	489.053	473.20	1117.6	0000000
105-650000	612.83	9.45322E-04	0.99905	0.99905	488.935	487.787	488.525	472.60	1117.6	0000000
105-660000	609.82	9.43691E-04	0.99906	0.99906	488.408	487.252	487.993	472.00	1117.6	0000000
105-670000	606.79	9.42017E-04	0.99906	0.99906	487.876	486.711	487.455	471.39	1117.7	0000000
105-680000	603.74	9.40297E-04	0.99906	0.99906	487.338	486.165	486.911	470.77	1117.7	0000000
105-690000	600.66	9.38533E-04	0.99906	0.99906	486.795	485.612	486.362	470.15	1117.7	0000000
105-700000	597.57	9.36724E-04	0.99906	0.99906	486.246	485.054	485.807	469.52	1117.8	0000000
105-710000	594.46	9.34869E-04	0.99907	0.99907	485.691	484.490	485.245	468.88	1117.8	0000000
105-720000	591.32	9.32969E-04	0.99907	0.99907	485.130	483.920	484.678	468.24	1117.8	0000000
105-730000	588.16	9.31022E-04	0.99907	0.99907	484.563	483.343	484.104	467.59	1117.9	0000000
105-740000	584.98	9.29029E-04	0.99907	0.99907	483.990	482.759	483.523	466.94	1117.9	0000000
105-750000	581.78	9.26988E-04	0.99907	0.99907	483.410	482.169	482.936	466.27	1117.9	0000000
105-760000	578.55	9.24899E-04	0.99908	0.99908	482.823	481.572	482.343	465.61	1118.0	0000000
105-770000	575.30	9.22761E-04	0.99908	0.99908	482.230	480.968	481.742	464.93	1118.0	0000000
105-780000	572.02	9.20574E-04	0.99908	0.99908	481.630	480.356	481.134	464.24	1118.0	0000000
105-790000	568.72	9.18337E-04	0.99908	0.99908	481.022	479.737	480.518	463.55	1118.1	0000000
105-800000	565.39	9.16050E-04	0.99908	0.99908	480.407	479.111	479.895	462.85	1118.1	0000000
105-810000	562.04	9.13712E-04	0.99909	0.99909	479.785	478.476	479.264	462.14	1118.1	0000000
105-820000	558.66	9.11326E-04	0.99909	0.99909	479.155	477.833	478.625	461.43	1118.1	0000000
105-830000	555.25	9.08879E-04	0.99909	0.99909	478.517	477.182	477.977	460.70	1118.2	0000000
105-840000	551.81	9.06418E-04	0.99909	0.99909	477.870	476.522	477.322	459.97	1118.2	0000000
105-850000	548.34	9.03762E-04	0.99910	0.99910	477.215	475.853	476.657	459.22	1118.2	0000000
105-860000	544.84	9.01584E-04	0.99910	0.99910	476.551	475.175	475.983	458.47	1118.2	0000000
105-870000	541.31	8.97397E-04	0.99910	0.99910	475.879	474.487	475.300	457.71	1118.3	0000000
105-880000	537.75	9.00375E-04	0.99910	0.99910	475.195	473.790	474.607	456.93	1118.3	0000000
105-890000	534.15	8.76684E-04	0.99912	0.99912	474.509	473.081	473.904	456.15	1118.3	0000000
105-900000	530.53	9.52021E-04	0.99905	0.99905	473.785	472.370	473.193	455.33	1118.3	0000000
105-910000	518.37	9.40103E-04	0.99906	0.99906	472.140	469.226	470.775	453.49	1117.9	0000000
105-920000	513.97	1.00857E-03	0.99899	0.99899	470.932	468.601	469.889	452.12	1118.1	0000000
0 Vol.no.	pressure (psia)	voidf	voidg	voidgo	tempf (degF)	tempg (degF)	satt-part (degF)	uf (Btu/lb)	ug (Btu/lb)	vol-flag tlpvbfe
1A pipe										
107-010000	501.30	1.00443E-03	0.99900	0.99900	468.819	465.657	467.306	449.74	1117.9	0000000
107-020000	496.23	9.93047E-04	0.99901	0.99901	467.414	464.933	466.258	448.15	1118.2	0000000
107-030000	492.11	9.80755E-04	0.99902	0.99902	466.344	464.271	465.401	446.95	1118.3	0000000
107-040000	488.12	9.69700E-04	0.99903	0.99903	465.414	463.539	464.566	445.90	1118.4	0000000
107-050000	484.13	9.59995E-04	0.99904	0.99904	464.539	462.753	463.725	444.92	1118.5	0000000

Attachment F: RELAP Output File - Hot Shut Down Conditions

107-060000	480.11	9.51396E-04	0.99905	0.99905	463.681	461.931	462.873	443.95	1118.5	0000000
107-070000	476.05	9.43651E-04	0.99906	0.99906	462.824	461.081	462.007	442.99	1118.5	0000000
107-080000	471.95	9.36556E-04	0.99906	0.99906	461.959	460.206	461.127	442.02	1118.5	0000000
107-090000	467.81	9.29956E-04	0.99907	0.99907	461.081	459.310	460.230	441.04	1118.5	0000000
107-100000	463.61	9.23734E-04	0.99908	0.99908	460.187	458.393	459.315	440.04	1118.5	0000000
107-110000	459.36	9.17784E-04	0.99908	0.99908	459.276	457.455	458.382	439.02	1118.5	0000000
107-120000	455.04	9.12081E-04	0.99909	0.99909	458.347	456.496	457.430	437.98	1118.5	0000000
107-130000	450.67	9.06393E-04	0.99909	0.99909	457.399	455.515	456.457	436.93	1118.5	0000000
107-140000	446.23	9.01331E-04	0.99910	0.99910	456.429	454.511	455.462	435.84	1118.5	0000000
107-150000	441.72	8.94348E-04	0.99911	0.99911	455.438	453.483	454.444	434.74	1118.5	0000000
107-160000	437.15	8.95016E-04	0.99910	0.99910	454.421	452.431	453.402	433.61	1118.5	0000000
107-170000	432.49	8.66673E-04	0.99913	0.99913	453.393	451.347	452.332	432.46	1118.5	0000000
107-180000	427.77	9.51141E-04	0.99905	0.99905	452.286	450.256	451.240	431.23	1118.5	0000000
107-190000	412.12	8.79504E-04	0.99912	0.99912	449.685	445.663	447.549	428.36	1117.8	0000000
107-200000	404.73	8.65164E-04	0.99913	0.99913	447.661	444.188	445.769	426.11	1118.0	0000000
107-210000	398.97	8.56571E-04	0.99914	0.99914	446.033	443.013	444.365	424.31	1118.1	0000000
107-220000	393.54	8.49168E-04	0.99915	0.99915	444.582	441.794	443.025	422.70	1118.2	0000000
107-230000	388.11	8.42115E-04	0.99916	0.99916	443.195	440.497	441.673	421.17	1118.2	0000000
107-240000	382.60	8.35125E-04	0.99916	0.99916	441.817	439.128	440.285	419.65	1118.1	0000000
107-250000	376.97	8.28078E-04	0.99917	0.99917	440.417	437.693	438.850	418.11	1118.1	0000000
107-260000	371.20	8.20921E-04	0.99918	0.99918	438.977	436.193	437.362	416.52	1118.0	0000000
107-270000	365.26	8.13630E-04	0.99919	0.99919	437.487	434.625	435.813	414.89	1118.0	0000000
107-280000	359.15	8.06190E-04	0.99919	0.99919	435.937	432.985	434.197	413.18	1117.9	0000000
107-290000	352.83	7.98591E-04	0.99920	0.99920	434.318	431.266	432.505	411.41	1117.8	0000000
107-300000	346.29	7.90822E-04	0.99921	0.99921	432.623	429.461	430.730	409.55	1117.7	0000000
107-310000	339.51	7.82870E-04	0.99922	0.99922	430.840	427.557	428.860	407.60	1117.6	0000000
107-320000	332.45	7.74728E-04	0.99923	0.99923	428.958	425.542	426.882	405.55	1117.4	0000000
107-330000	325.08	7.66304E-04	0.99923	0.99923	426.964	423.401	424.782	403.37	1117.3	0000000
107-340000	317.34	7.58141E-04	0.99924	0.99924	424.838	421.112	422.539	401.05	1117.1	0000000
107-350000	309.19	7.45866E-04	0.99925	0.99925	422.562	418.646	420.128	398.58	1116.9	0000000
107-360000	300.59	7.62433E-04	0.99924	0.99924	420.078	416.003	417.532	395.88	1116.7	0000000
107-370000	275.26	7.87943E-04	0.99921	0.99921	413.718	406.507	409.536	389.00	1115.2	0000000
107-380000	258.79	8.38707E-04	0.99916	0.99916	408.025	401.335	404.023	382.85	1115.0	0000000
107-390000	243.74	6.83462E-04	0.99932	0.99932	402.998	396.067	398.743	377.44	1114.5	0000000
ATM tmdpvol										
109-010000	14.700	1.19226E-06	1.0000	1.0000	70.000	70.000	70.000	38.071	172.44	0011000

0System 1 *none*

0 Jun.no.	from vol.	to vol.	liq.j.vel. (ft/sec)	vap.j.vel. (ft/sec)	mass flow (lb/sec)	jun.area (ft2)	throat ratio	jun-flag jefvcahs	flow regi	no. advs. last	edit	choked total
LOSS sngljun												
102-000000	101-010002	103-010001	265.90	324.10	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
MISC pipe												
103-010000	103-010002	103-020001	321.60	339.66	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-020000	103-020002	103-030001	332.20	341.35	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-030000	103-030002	103-040001	337.29	342.23	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-040000	103-040002	103-050001	329.75	343.14	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-050000	103-050002	103-060001	332.49	345.34	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-060000	103-060002	103-070001	340.86	346.04	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0

Attachment F: RELAP Output File - Hot Shut Down Conditions

103-070000	103-070002	103-080001	319.95	346.68	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-080000	103-080002	103-090001	337.57	348.86	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-090000	103-090002	103-100001	341.91	349.66	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-100000	103-100002	103-110001	344.00	350.34	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-110000	103-110002	103-120001	345.84	351.00	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-120000	103-120002	103-130001	346.40	351.67	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-130000	103-130002	103-140001	350.95	352.33	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-140000	103-140002	103-150001	339.79	353.01	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-150000	103-150002	103-160001	343.27	355.35	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-160000	103-160002	103-170001	345.78	356.21	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-170000	103-170002	103-180001	347.76	356.99	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-180000	103-180002	103-190001	349.40	357.73	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-190000	103-190002	103-200001	350.84	358.47	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-200000	103-200002	103-210001	352.13	359.20	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-210000	103-210002	103-220001	353.29	359.94	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-220000	103-220002	103-230001	354.44	360.67	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-230000	103-230002	103-240001	355.28	361.41	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-240000	103-240002	103-250001	356.98	362.16	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-250000	103-250002	103-260001	355.46	362.91	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-260000	103-260002	103-270001	365.33	363.66	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-270000	103-270002	103-280001	337.64	364.49	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-280000	103-280002	103-290001	354.99	366.98	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-290000	103-290002	103-300001	359.56	367.86	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-300000	103-300002	103-310001	361.30	368.62	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-310000	103-310002	103-320001	365.91	369.36	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-320000	103-320002	103-330001	355.60	370.14	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-330000	103-330002	103-340001	358.98	372.82	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-340000	103-340002	103-350001	361.55	373.82	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-350000	103-350002	103-360001	363.65	374.73	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-360000	103-360002	103-370001	365.45	375.61	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-370000	103-370002	103-380001	367.04	376.48	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-380000	103-380002	103-390001	368.48	377.34	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-390000	103-390002	103-400001	369.81	378.20	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-400000	103-400002	103-410001	371.06	379.07	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-410000	103-410002	103-420001	372.22	379.94	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-420000	103-420002	103-430001	373.41	380.81	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-430000	103-430002	103-440001	374.28	381.69	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-440000	103-440002	103-450001	376.12	382.57	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-450000	103-450002	103-460001	374.43	383.47	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-460000	103-460002	103-470001	385.18	384.36	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-470000	103-470002	103-480001	355.06	385.33	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-480000	103-480002	103-490001	375.59	388.37	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-490000	103-490002	103-500001	380.77	389.56	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-500000	103-500002	103-510001	383.30	390.62	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-510000	103-510002	103-520001	385.14	391.65	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-520000	103-520002	103-530001	386.76	392.69	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-530000	103-530002	103-540001	388.23	393.73	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
103-540000	103-540002	103-550001	389.60	394.79	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0

Attachment F: RELAP Output File - Hot Shut Down Conditions

```
 103-550000  103-550002  103-560001   390.90       395.85       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-560000  103-560002  103-570001   392.14       396.93       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-570000  103-570002  103-580001   393.34       398.01       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-580000  103-580002  103-590001   394.52       399.10       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-590000  103-590002  103-600001   395.68       400.20       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-600000  103-600002  103-610001   396.82       401.31       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-610000  103-610002  103-620001   397.95       402.43       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-620000  103-620002  103-630001   399.11       403.55       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-630000  103-630002  103-640001   400.15       404.69       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-640000  103-640002  103-650001   401.58       405.84       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-650000  103-650002  103-660001   401.60       407.00       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-660000  103-660002  103-670001   406.98       408.16       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-670000  103-670002  103-680001   393.48       409.37       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-680000  103-680002  103-690001   396.73       413.07       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-690000  103-690002  103-700001   399.34       414.47       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-700000  103-700002  103-710001   401.64       415.71       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-710000  103-710002  103-720001   403.50       416.92       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-720000  103-720002  103-730001   405.90       418.13       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-730000  103-730002  103-740001   405.56       419.34       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 103-740000  103-740002  103-750001   414.71       420.52       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
0   Jun.no.   from vol.     to vol.   liq.j.vel.   vap.j.vel.   mass flow    jun.area      throat      jun-flag   flow no. advs. choked
                                      (ft/sec)     (ft/sec)     (lb/sec)     (ft2)         ratio       jefvcahs   regi last edit  total
 60DEG    sngljun
 104-000000  103-750002  105-010001   390.47       421.77       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 3PIPE    pipe
 105-010000  105-010002  105-020001   397.52       425.09       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-020000  105-020002  105-030001   402.69       426.56       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-030000  105-030002  105-040001   406.75       427.90       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-040000  105-040002  105-050001   410.10       429.23       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-050000  105-050002  105-060001   412.97       430.56       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-060000  105-060002  105-070001   415.50       431.90       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-070000  105-070002  105-080001   417.78       433.24       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-080000  105-080002  105-090001   419.87       434.59       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-090000  105-090002  105-100001   421.82       435.95       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-100000  105-100002  105-110001   423.67       437.32       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-110000  105-110002  105-120001   425.43       438.71       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-120000  105-120002  105-130001   427.12       440.11       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-130000  105-130002  105-140001   428.76       441.52       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-140000  105-140002  105-150001   430.36       442.94       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-150000  105-150002  105-160001   431.93       444.37       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-160000  105-160002  105-170001   433.47       445.82       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-170000  105-170002  105-180001   435.00       447.28       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-180000  105-180002  105-190001   436.51       448.76       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-190000  105-190002  105-200001   438.01       450.25       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-200000  105-200002  105-210001   439.51       451.76       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-210000  105-210002  105-220001   441.00       453.28       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-220000  105-220002  105-230001   442.49       454.82       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
 105-230000  105-230002  105-240001   443.99       456.38       38.187       5.13000E-02   1.0000      00001000   anm  0      0      0
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Attachment F: RELAP Output File - Hot Shut Down Conditions

105-240000	105-240002	105-250001	445.49	457.95	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-250000	105-250002	105-260001	447.00	459.54	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-260000	105-260002	105-270001	448.51	461.15	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-270000	105-270002	105-280001	450.04	462.78	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-280000	105-280002	105-290001	451.57	464.42	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-290000	105-290002	105-300001	453.12	466.08	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-300000	105-300002	105-310001	454.68	467.77	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-310000	105-310002	105-320001	456.25	469.47	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-320000	105-320002	105-330001	457.83	471.19	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-330000	105-330002	105-340001	459.43	472.93	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-340000	105-340002	105-350001	461.04	474.69	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-350000	105-350002	105-360001	462.67	476.47	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-360000	105-360002	105-370001	464.32	478.27	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-370000	105-370002	105-380001	465.98	480.09	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-380000	105-380002	105-390001	467.66	481.93	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-390000	105-390002	105-400001	469.36	483.80	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-400000	105-400002	105-410001	471.07	485.69	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-410000	105-410002	105-420001	472.81	487.60	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-420000	105-420002	105-430001	474.57	489.53	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-430000	105-430002	105-440001	476.34	491.49	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-440000	105-440002	105-450001	478.14	493.47	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-450000	105-450002	105-460001	479.96	495.48	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-460000	105-460002	105-470001	481.80	497.52	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-470000	105-470002	105-480001	483.66	499.58	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-480000	105-480002	105-490001	485.55	501.66	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-490000	105-490002	105-500001	487.46	503.78	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-500000	105-500002	105-510001	489.40	505.92	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-510000	105-510002	105-520001	491.36	508.09	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-520000	105-520002	105-530001	493.35	510.30	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-530000	105-530002	105-540001	495.36	512.53	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-540000	105-540002	105-550001	497.40	514.79	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-550000	105-550002	105-560001	499.47	517.09	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-560000	105-560002	105-570001	501.56	519.42	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-570000	105-570002	105-580001	503.69	521.78	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-580000	105-580002	105-590001	505.84	524.17	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-590000	105-590002	105-600001	508.03	526.60	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-600000	105-600002	105-610001	510.24	529.07	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-610000	105-610002	105-620001	512.49	531.58	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-620000	105-620002	105-630001	514.77	534.12	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-630000	105-630002	105-640001	517.09	536.70	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-640000	105-640002	105-650001	519.44	539.32	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-650000	105-650002	105-660001	521.82	541.98	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-660000	105-660002	105-670001	524.25	544.69	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-670000	105-670002	105-680001	526.71	547.44	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-680000	105-680002	105-690001	529.20	550.23	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-690000	105-690002	105-700001	531.74	553.07	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-700000	105-700002	105-710001	534.32	555.96	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0
105-710000	105-710002	105-720001	536.94	558.90	38.187	5.13000E-02	1.0000	00001000	anm	0	0	0

Attachment F: RELAP Output File - Hot Shut Down Conditions

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105-720000  105-720002  105-730001   539.60      561.88      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-730000  105-730002  105-740001   542.31      564.92      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-740000  105-740002  105-750001   545.06      568.01      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-750000  105-750002  105-760001   547.87      571.16      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-760000  105-760002  105-770001   550.71      574.37      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-770000  105-770002  105-780001   553.61      577.63      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-780000  105-780002  105-790001   556.57      580.96      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-790000  105-790002  105-800001   559.57      584.34      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-800000  105-800002  105-810001   562.63      587.80      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-810000  105-810002  105-820001   565.75      591.32      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-820000  105-820002  105-830001   568.92      594.91      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-830000  105-830002  105-840001   572.16      598.57      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-840000  105-840002  105-850001   575.44      602.30      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-850000  105-850002  105-860001   578.88      606.12      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-860000  105-860002  105-870001   582.04      610.01      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-870000  105-870002  105-880001   586.55      613.99      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-880000  105-880002  105-890001   586.41      618.06      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-890000  105-890002  105-900001   604.12      622.20      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-900000  105-900002  105-910001   558.08      626.49      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
105-910000  105-910002  105-920001   582.68      639.60      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
0   Jun.no.   from vol.     to vol.  liq.j.vel.  vap.j.vel.  mass flow  jun.area     throat    jun-flag  flow no. advs. choked
                                     (ft/sec)    (ft/sec)    (lb/sec)   (ft2)        ratio     jefvcahs  regi last edit  total
ELBOW    sngljun
106-000000  105-920002  107-010001   552.17      645.18      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
1A       pipe
107-010000  107-010002  107-020001   577.55      660.08      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-020000  107-020002  107-030001   594.99      666.88      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-030000  107-030002  107-040001   608.24      672.54      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-040000  107-040002  107-050001   619.06      678.06      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-050000  107-050002  107-060001   628.37      683.64      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-060000  107-060002  107-070001   636.68      689.32      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-070000  107-070002  107-080001   644.31      695.14      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-080000  107-080002  107-090001   651.50      701.12      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-090000  107-090002  107-100001   658.38      707.26      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-100000  107-100002  107-110001   665.06      713.58      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-110000  107-110002  107-120001   671.64      720.10      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-120000  107-120002  107-130001   678.16      726.83      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-130000  107-130002  107-140001   684.78      733.77      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-140000  107-140002  107-150001   691.06      740.95      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-150000  107-150002  107-160001   698.98      748.38      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-160000  107-160002  107-170001   701.05      756.07      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-170000  107-170002  107-180001   726.72      764.04      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-180000  107-180002  107-190001   664.83      772.38      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-190000  107-190002  107-200001   747.66      798.59      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-200000  107-200002  107-210001   777.55      812.72      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-210000  107-210002  107-220001   795.14      824.26      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-220000  107-220002  107-230001   808.69      835.43      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
107-230000  107-230002  107-240001   820.80      846.83      38.187    5.13000E-02  1.0000    00001000  anm  0    0    0
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

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 107-240000  107-240002  107-250001   832.53       858.68       38.187       5.13000E-02   1.0000     00001000   anm  0      0      0
 107-250000  107-250002  107-260001   844.40       871.12       38.187       5.13000E-02   1.0000     00001000   anm  0      0      0
 107-260000  107-260002  107-270001   856.68       884.23       38.187       5.13000E-02   1.0000     00001000   anm  0      0      0
 107-270000  107-270002  107-280001   869.55       898.11       38.187       5.13000E-02   1.0000     00001000   anm  0      0      0
 107-280000  107-280002  107-290001   883.13       912.85       38.187       5.13000E-02   1.0000     00001000   anm  0      0      0
 107-290000  107-290002  107-300001   897.54       928.57       38.187       5.13000E-02   1.0000     00001000   anm  0      0      0
 107-300000  107-300002  107-310001   912.93       945.41       38.187       5.13000E-02   1.0000     00001000   anm  0      0      0
 107-310000  107-310002  107-320001   929.42       963.51       38.187       5.13000E-02   1.0000     00001000   anm  0      0      0
 107-320000  107-320002  107-330001   947.17       983.08       38.187       5.13000E-02   1.0000     00001000   anm  0      0      0
 107-330000  107-330002  107-340001   966.49       1004.4       38.187       5.13000E-02   1.0000     00001000   anm  0      0      0
 107-340000  107-340002  107-350001   986.89       1027.7       38.187       5.13000E-02   1.0000     00001000   anm  0      0      0
 107-350000  107-350002  107-360001   1014.5       1053.4       38.187       5.13000E-02   1.0000     00001000   anm  0      0      0
 107-360000  107-360002  107-370001   1005.1       1082.0       38.187       5.13000E-02   1.0000     00001000   anm  0      0      0
 107-370000  107-370002  107-380001   1041.8       1170.7       38.187       5.13000E-02   1.0000     00001000   anm  0      0      0
 107-380000  107-380002  107-390001   1029.1       1239.9       38.187       5.13000E-02   1.0000     00001000   anm  0      0      0
 1A       sngljun
 108-000000  107-390002  109-010001   1310.5       1310.5       38.187       5.13000E-02   1.0000     00000100   anm  1  12018  12018
 transient timing information
0subroutine          entries   time(sec)  percent
 state(1)             12073    83.3125    39.3564
 phantv               12073    51.7813    24.4612
 phantj               12073    25.0313    11.8246
 fwdrag               12073    18.8594     8.9091
 vexplt               12073     6.2031     2.9303
 eqfinl               12073     5.0625     2.3915
 preseq               12073     4.8750     2.3029
 volvel               12073     3.0156     1.4246
 dtstep               12074     2.6875     1.2696
 vlvela               12073     2.5000     1.1810
 vfinl                12073     1.8281     0.8636
 syssol               12073     1.5000     0.7086
 tstate               12073     1.3281     0.6274
 jprop                36219     1.3281     0.6274
 hydro                12073     0.9844     0.4650
 hzflow               36219     0.5156     0.2436
 jchoke               12073     0.4531     0.2141
 packer               12073     0.2656     0.1255
 hloss                12073     0.1563     0.0738
 total                         211.6875
0---Restart no.   12073 written, block no.     1, at time=     7.00040    ---
1 time        mflowj
  (sec)        108000000
               (lb/sec)

  5.00044       38.187
  5.10012       38.187
  5.20038       38.187
  5.30005       38.187
```

Attachment F: RELAP Output File - Hot Shut Down Conditions

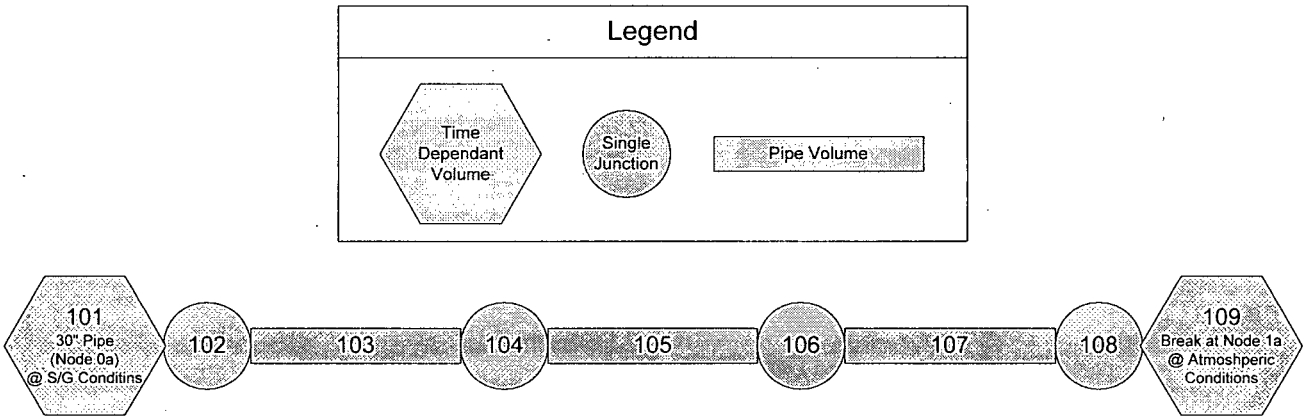
```
  5.40031        38.187
  5.50057        38.187
  5.60025        38.187
  5.70051        38.187
  5.80019        38.187
  5.90045        38.187
  6.00013        38.187
  6.10039        38.187
  6.20006        38.187
  6.30032        38.187
  6.40000        38.187
  6.50026        38.187
  6.60052        38.187
  6.70020        38.187
  6.80046        38.187
  6.90014        38.187
  7.00040        38.187

0---Restart Summary:        2 blocks written in restart file  ---
*Card   Restart *   Problem Time  Block
* No.     No.           (s)        No.
*103          0 *     0.00000        0
*103      12073 *     7.00040        1
0Final time=    7.00040     sec    advancements attempted=  12073
0Transient terminated by end of time step cards.
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

RELAP Files

Description	File Name	Size	Date
RELAP input file – Extended Power Uprate	POINTBEACH_EPU.inp	4 KB	8/29/2008
RELAP output file – Extended Power Uprate	PB_EPU.out	395 KB	8/29/2008

The following pages show the output file created by the RELAP program. The output file includes the input file code it is created from.



Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
1    RBIC/3.3            RELAP5 Based Integrated Code
  Copyright (C) 2001  Information Systems Laboratories, Inc.
0Execute file: \\SNLVS5\SYS3\OPS$\REL459331\RELAP5
0Effective command line parameters:
   -f ftb1                                                                    -i POINTBEACH_EPU.inp
   -o PB_EPU.out                                                              -p plotfl
   -r [ ]                                                                     -s stripf
   -j jbinfo                                                                  -n null
   -c cdffile                                                                 -a coupfl
   -X                                                                         -C 0
   -A dumpfil1                                                                -B dumpfil2
   -S snapdata                                                                -P 5009
   -O                                                                         -R [ ]
   -w [ tpfh2o]                                                               -d [ tpfd2o]
   -h [ tpfh2]                                                                -l [ tpfli]
   -k [ tpfk]                                                                 -b [ tpfhe]
   -e [ tpfn2]                                                                -m [ tpfna]
   -q [ tpfnak]                                                               -t [ tpflipb]
   -u [ tpfnh3]                                                               -W [ tpfh2on]
   -g [ tpfglyc]                                                              -H [ tpfblood]
   -Z [ tpfh2onew]

  [ ] = tentative file name (may be overridden by input data)

0Environmental library version number is: 3.3
0Table of update define values
 apollo   off        blkdta   off        bufr     off        cdccra   off        cos      off
 cray     off        ctss     off        debth    off        decalp90 off        decalpha off
 decrisc  off        decrisc2 off        erf      on         extjun   off        extj20   off
 extsys   off        extvol   off        extv20   off        extv100  off        fourbyt  on
 hp       off        ibm      off        ibmrisc  off        ieee     off        in32     on
 laheyf77 off        lcm      off        makemap  off        nanscr   off        nopen    off
 npa      off        nreac    off        ploc     on         pvmcoupl off        readnonb off
 selap    off        sgi      off        sun      off        unicos   off        unix     on
 vax      off        win32cvf on
 listing of input data for case  1

     1    = POINT BEACH HELB
     2    ************************************************************
     3    *
     4    ************************************************************
     5    *
     6    100 new transnt
     7    101 run
     8    102 british british
     9    110 air
    10    201 7.0 1.0-7 0.01 15003 10 1000 100000
    11    301 mflowj 108000000
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
12    ************************************************************
13    *
14    ***************HYDRODYNAMIC COMPONENTS********************
15    *
16    ************************************************************
17    * STEAM LINE (AT SG CONDITIONS)
18    * TIME-DEPENDENT VOLUME 101
19    *
20    1010000 "S/G" tmdpvol
21    1010101 100.0 10.0 1000.0 0.0 0.0 0.0 0.00015 0.0 0.0
22    1010200 2
23    1010201 0.0 813.0 0.9975
24    1010202 7.0 813.0 0.9975
25    ************************************************************
26    * LOSSES FROM 30" TO 3" PIPE (FWD ONLY), + VALVE LOSS
27    * SINGLE JUCTION 102
28    *
29    1020000 "LOSS" sngljun
30    1020101 101010002 103010001 0.05130 1.144 0.144 00001000
31    1020201 1 0.0 0.0 0.0
32    ************************************************************
33    * PIPE FROM 30" to 3"
34    * PIPE 103
35    *
36    1030000 "MISC" pipe
37    1030001 75
38    1030101 0.05130 75
39    1030301 0.89583 4
40    1030302 0.66667 7
41    1030303 0.81845 14
42    1030304 0.85897 27
43    1030305 0.80417 32
44    1030306 0.86944 47
45    1030307 0.94167 67
46    1030308 0.87500 75
47    1030601 90.0 4
48    1030602 0.0 7
49    1030603 -90.0 14
50    1030604 0.0 27
51    1030605 -90.0 32
52    1030606 0.0 47
53    1030607 -90.0 67
54    1030608 0.0 75
55    1030801 0.00015 0.0 75
56    1030901 0.0 0.0 3
57    1030902 0.171 0.171 4
58    1030903 0.0 0.0 6
59    1030904 0.171 0.171 7
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
1030905 0.0 0.0 13
1030906 0.171 0.171 14
1030907 0.0 0.0 26
1030908 0.171 0.171 27
1030909 0.0 0.0 31
1030910 0.171 0.171 32
1030911 0.0 0.0 46
1030912 0.171 0.171 47
1030913 0.0 0.0 66
1030914 0.171 0.171 67
1030915 0.0 0.0 74
1031001 0000000 75
1031101 00001000 74
1031201 2 813.0 0.9975 0.0 0.0 0.0 75
1031300 1
1031301 0.0 0.0 0.0 74
*********************************************************
* 60  DEG BEND @ EL. 63'-0"
* SINGLE JUNCTION 104
* JUNCTION INCLUDES 60 DEG BEND
*
1040000 "60DEG" sngljun
1040101 103750002 105010001 0.05130 0.1336 0.1336 00001000
1040201 1 0.0 0.0 0.0
*********************************************************
* PIPE FROM
* PIPE 105
*
1050000 "3PIPE" pipe
1050001 92
1050101 0.05130 92
1050301 0.88889 90
1050302 0.77083 92
1050601 0.0 92
1050801 0.00015 0.0 92
1050901 0.0 0.0 89
1050902 0.171 0.171 90
1050903 0.0 0.0 91
1051001 0000000 92
1051101 00001000 91
1051201 2 813.0 0.9975 0.0 0.0 0.0 92
1051300 1
1051301 0.0 0.0 0.0 91
*********************************************************
* SINGLE JUNCTION 106
* ELBOW @ EL. 62'-9"
*
1060000 "ELBOW" sngljun
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
  108    1060101 105920002 107010001 0.05130 0.171 0.171 00001000
  109    1060201 1 0.0 0.0 0.0
  110    ************************************************************
  111    * PIPE UP TO 1A
  112    * PIPE 107
  113    *
  114    1070000 "1A" pipe
  115    1070001 39
  116    1070101 0.05130 39
  117    1070301 0.84954 18
  118    1070302 0.81944 36
  119    1070303 0.76389 39
  120    1070601 0.0 18
  121    1070602 -90.0 36
  122    1070603 0.0 39
  123    1070801 0.00015 0.0 39
  124    1070901 0.0 0.0 17
  125    1070902 0.171 0.171 18
  126    1070903 0.0 0.0 35
  127    1070904 0.171 0.171 36
  128    1070905 0.0 0.0 38
  129    1071001 0000000 39
  130    1071101 00001000 38
  131    1071201 2 813.0 0.9975 0.0 0.0 0.0 39
  132    1071300 1
  133    1071301 0.0 0.0 0.0 38
  134    ************************************************************
  135    * SINGLE JUNCTION 108
  136    * BREAK AT NODE 1A
  137    *
  138    1080000 "1A" sngljun
  139    1080101 107390002 109010001 0.05130 0.171 0.171 00000100
  140    1080201 1 0.0 0.0 0.0
  141    ************************************************************
  142    * BREAK 1A - RELEASE TO CCWHX ROOM
  143    * TIME-DEPENDENT VOLUME 109
  144    *
  145    1090000 "ATM" tmdpvol
  146    1090101 100.0 10.0 1000.0 0.0 0.0 0.0 0.00015 0.0 0.0
  147    1090200 4
  148    1090201 0.0 14.7 70.0 0.999
  149    1090202 7.0 14.7 70.0 0.999
  150    ************************************************************
  151    .end
0   RBIC/3.3            RELAP5 Based Integrated Code
0 Copyright (C) 2001  Information Systems Laboratories, Inc.
  POINT BEACH HELB                                                    29-Aug-08    19:48:05
1 RELAP5/3.3            Reactor Loss Of Coolant Analysis Program
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 Copyright (C) 2001  Information Systems Laboratories, Inc.
  POINT BEACH HELB                                                    29-Aug-08    19:48:05
0Processing type is new
+                                   problem option is transnt
0inp-chk, run option is run.
0Option 60 modifies time step control for Courant limit.
0Option 60 is turned on automatically now.
0Input units are assumed british      output units are british
0Remaining cpu time values are   1.0     and   2.0     sec.
0                                    Time step control data
    end time         min.time step    max.time step  option   minor edit   major edit     restart
    (sec)            (sec)            (sec)                   frequency    frequency    frequency
    7.000000E+00     1.000000E-07     1.000000E-02    15003          10         1000       100000
0        Minor edit requests
 req.num.    variable code    parameter
     301      mflowj         108000000
0 Noncondensible species, initial mass fraction:
    air         1.00000
0Gravitational constant is   32.1740
0                                    Edit of component input data
                (quantities printed are input values, set by default, or set by error recovery)
0=====================================================================
                     Input data for component 101, S/G      tmdpvol , having   1 volumes and   0 junctions
0  Vol no.     flow area        flow length      volume          horiz. angle     vert. angle      elev. chng.
               (ft2)            (ft)             (ft3)           (deg)            (deg)            (ft)
 101010000      100.000          10.0000          1000.00         0.00000          0.00000          0.00000
0  Vol.no.     roughness        hydraulic diam.  vol-flag
               (ft)             (ft)             tlpvbfe
 101010000     1.500000E-04      11.2838          0011000
0Tabular data
     time            pressure        quality
     (sec)           (lbf/in2)


     0.00000         813.000        0.997500
     7.00000         813.000        0.997500
0=====================================================================
                     Input data for component 102, LOSS     sngljun , having   0 volumes and   1 junctions
0  Jun.no. from vol.   to vol.  jun. area     jun-flag  subcooled     two-phase     superheated
                               (ft2)         jefvcahs  dschg. coef.  dschg. coef.  dschg. coef.
 102000000 101010002 103010001  5.130000E-02  00001000  1.000000E+00  1.400000E-01  0.000000E+00
0  Jun.no.     forward loss    forward loss    forward loss    reverse loss    reverse loss    reverse loss
               coefficient     multiplier      exponent        coefficient     multiplier      exponent
 102000000     1.144000E+00    0.000000E+00    0.000000E+00    1.440000E-01    0.000000E+00    0.000000E+00
0  Jun.no.                         junction diam.   beta factor      gas intercept    slope
                                   (ft)
 102000000                         2.555723E-01     0.000000E+00     1.000000E+00     1.000000E+00
0  Jun.no.                         init. liq. flow  init. vap. flow
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
                                  (lbm/sec)        (lbm/sec)
 102000000                       0.000000E+00     0.000000E+00
0=====================================================================
                     Input data for component 103, MISC     pipe     , having  75 volumes and  74 junctions
0  Vol no.    volume        angle 1       angle 2       angle 3       vol-flag
 !            (ft3)         (deg)         (deg)         (deg)          tlpvb_e
 103010000    4.5956E-02     0.000         90.00         0.000         0000000
 103020000    4.5956E-02     0.000         90.00         0.000         0000000
 103030000    4.5956E-02     0.000         90.00         0.000         0000000
 103040000    4.5956E-02     0.000         90.00         0.000         0000000
 103050000    3.4200E-02     0.000         0.000         0.000         0000000
 103060000    3.4200E-02     0.000         0.000         0.000         0000000
 103070000    3.4200E-02     0.000         0.000         0.000         0000000
 103080000    4.1986E-02     0.000        -90.00         0.000         0000000
 103090000    4.1986E-02     0.000        -90.00         0.000         0000000
 103100000    4.1986E-02     0.000        -90.00         0.000         0000000
 103110000    4.1986E-02     0.000        -90.00         0.000         0000000
 103120000    4.1986E-02     0.000        -90.00         0.000         0000000
 103130000    4.1986E-02     0.000        -90.00         0.000         0000000
 103140000    4.1986E-02     0.000        -90.00         0.000         0000000
 103150000    4.4065E-02     0.000         0.000         0.000         0000000
 103160000    4.4065E-02     0.000         0.000         0.000         0000000
 103170000    4.4065E-02     0.000         0.000         0.000         0000000
 103180000    4.4065E-02     0.000         0.000         0.000         0000000
 103190000    4.4065E-02     0.000         0.000         0.000         0000000
 103200000    4.4065E-02     0.000         0.000         0.000         0000000
 103210000    4.4065E-02     0.000         0.000         0.000         0000000
 103220000    4.4065E-02     0.000         0.000         0.000         0000000
 103230000    4.4065E-02     0.000         0.000         0.000         0000000
 103240000    4.4065E-02     0.000         0.000         0.000         0000000
 103250000    4.4065E-02     0.000         0.000         0.000         0000000
 103260000    4.4065E-02     0.000         0.000         0.000         0000000
 103270000    4.4065E-02     0.000         0.000         0.000         0000000
 103280000    4.1254E-02     0.000        -90.00         0.000         0000000
 103290000    4.1254E-02     0.000        -90.00         0.000         0000000
 103300000    4.1254E-02     0.000        -90.00         0.000         0000000
 103310000    4.1254E-02     0.000        -90.00         0.000         0000000
 103320000    4.1254E-02     0.000        -90.00         0.000         0000000
 103330000    4.4602E-02     0.000         0.000         0.000         0000000
 103340000    4.4602E-02     0.000         0.000         0.000         0000000
 103350000    4.4602E-02     0.000         0.000         0.000         0000000
 103360000    4.4602E-02     0.000         0.000         0.000         0000000
 103370000    4.4602E-02     0.000         0.000         0.000         0000000
 103380000    4.4602E-02     0.000         0.000         0.000         0000000
 103390000    4.4602E-02     0.000         0.000         0.000         0000000
 103400000    4.4602E-02     0.000         0.000         0.000         0000000
 103410000    4.4602E-02     0.000         0.000         0.000         0000000
 103420000    4.4602E-02     0.000         0.000         0.000         0000000
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

103430000	4.4602E-02	0.000	0.000	0.000	0000000
103440000	4.4602E-02	0.000	0.000	0.000	0000000
103450000	4.4602E-02	0.000	0.000	0.000	0000000
103460000	4.4602E-02	0.000	0.000	0.000	0000000
103470000	4.4602E-02	0.000	0.000	0.000	0000000
103480000	4.8308E-02	0.000	-90.00	0.000	0000000
103490000	4.8308E-02	0.000	-90.00	0.000	0000000
103500000	4.8308E-02	0.000	-90.00	0.000	0000000
103510000	4.8308E-02	0.000	-90.00	0.000	0000000
103520000	4.8308E-02	0.000	-90.00	0.000	0000000
103530000	4.8308E-02	0.000	-90.00	0.000	0000000
103540000	4.8308E-02	0.000	-90.00	0.000	0000000
103550000	4.8308E-02	0.000	-90.00	0.000	0000000
103560000	4.8308E-02	0.000	-90.00	0.000	0000000
103570000	4.8308E-02	0.000	-90.00	0.000	0000000
103580000	4.8308E-02	0.000	-90.00	0.000	0000000
103590000	4.8308E-02	0.000	-90.00	0.000	0000000
103600000	4.8308E-02	0.000	-90.00	0.000	0000000
103610000	4.8308E-02	0.000	-90.00	0.000	0000000
103620000	4.8308E-02	0.000	-90.00	0.000	0000000
103630000	4.8308E-02	0.000	-90.00	0.000	0000000
103640000	4.8308E-02	0.000	-90.00	0.000	0000000
103650000	4.8308E-02	0.000	-90.00	0.000	0000000
103660000	4.8308E-02	0.000	-90.00	0.000	0000000
103670000	4.8308E-02	0.000	-90.00	0.000	0000000
103680000	4.4887E-02	0.000	0.000	0.000	0000000
103690000	4.4887E-02	0.000	0.000	0.000	0000000
103700000	4.4887E-02	0.000	0.000	0.000	0000000
103710000	4.4887E-02	0.000	0.000	0.000	0000000
103720000	4.4887E-02	0.000	0.000	0.000	0000000
103730000	4.4887E-02	0.000	0.000	0.000	0000000
103740000	4.4887E-02	0.000	0.000	0.000	0000000
103750000	4.4887E-02	0.000	0.000	0.000	0000000

Vol no.	coord.	flow area (ft2)	flow length (ft)	sp.x. chng. (ft)	sp.y. chng. (ft)	sp.z. chng. (ft)	roughness (ft)	hydrlc.diam. (ft)	xyz-flag f
103010000	x	5.1300E-02	0.8958	-4.5718E-12	0.000	0.8958	1.5000E-04	0.2556	0000000
103020000	x	5.1300E-02	0.8958	-4.5718E-12	0.000	0.8958	1.5000E-04	0.2556	0000000
103030000	x	5.1300E-02	0.8958	-4.5718E-12	0.000	0.8958	1.5000E-04	0.2556	0000000
103040000	x	5.1300E-02	0.8958	-4.5718E-12	0.000	0.8958	1.5000E-04	0.2556	0000000
103050000	x	5.1300E-02	0.6667	0.6667	0.000	0.000	1.5000E-04	0.2556	0000000
103060000	x	5.1300E-02	0.6667	0.6667	0.000	0.000	1.5000E-04	0.2556	0000000
103070000	x	5.1300E-02	0.6667	0.6667	0.000	0.000	1.5000E-04	0.2556	0000000
103080000	x	5.1300E-02	0.8185	-4.1769E-12	0.000	-0.8185	1.5000E-04	0.2556	0000000
103090000	x	5.1300E-02	0.8185	-4.1769E-12	0.000	-0.8185	1.5000E-04	0.2556	0000000
103100000	x	5.1300E-02	0.8185	-4.1769E-12	0.000	-0.8185	1.5000E-04	0.2556	0000000
103110000	x	5.1300E-02	0.8185	-4.1769E-12	0.000	-0.8185	1.5000E-04	0.2556	0000000
103120000	x	5.1300E-02	0.8185	-4.1769E-12	0.000	-0.8185	1.5000E-04	0.2556	0000000
103130000	x	5.1300E-02	0.8185	-4.1769E-12	0.000	-0.8185	1.5000E-04	0.2556	0000000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

103140000	x	5.1300E-02	0.8185	-4.1769E-12	0.000	-0.8185	1.5000E-04	0.2556	0000000
103150000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103160000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103170000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103180000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103190000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103200000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103210000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103220000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103230000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103240000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103250000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103260000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103270000	x	5.1300E-02	0.8590	0.8590	0.000	0.000	1.5000E-04	0.2556	0000000
103280000	x	5.1300E-02	0.8042	-4.1040E-12	0.000	-0.8042	1.5000E-04	0.2556	0000000
103290000	x	5.1300E-02	0.8042	-4.1040E-12	0.000	-0.8042	1.5000E-04	0.2556	0000000
103300000	x	5.1300E-02	0.8042	-4.1040E-12	0.000	-0.8042	1.5000E-04	0.2556	0000000
103310000	x	5.1300E-02	0.8042	-4.1040E-12	0.000	-0.8042	1.5000E-04	0.2556	0000000
103320000	x	5.1300E-02	0.8042	-4.1040E-12	0.000	-0.8042	1.5000E-04	0.2556	0000000
103330000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103340000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103350000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103360000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103370000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103380000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103390000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103400000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103410000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103420000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103430000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103440000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103450000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103460000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103470000	x	5.1300E-02	0.8694	0.8694	0.000	0.000	1.5000E-04	0.2556	0000000
103480000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103490000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103500000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103510000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103520000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103530000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103540000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103550000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103560000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103570000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103580000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103590000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103600000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000
103610000	x	5.1300E-02	0.9417	-4.8057E-12	0.000	-0.9417	1.5000E-04	0.2556	0000000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

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 103620000      x    5.1300E-02    0.9417       -4.8057E-12     0.000       -0.9417        1.5000E-04    0.2556         0000000
 103630000      x    5.1300E-02    0.9417       -4.8057E-12     0.000       -0.9417        1.5000E-04    0.2556         0000000
 103640000      x    5.1300E-02    0.9417       -4.8057E-12     0.000       -0.9417        1.5000E-04    0.2556         0000000
 103650000      x    5.1300E-02    0.9417       -4.8057E-12     0.000       -0.9417        1.5000E-04    0.2556         0000000
 103660000      x    5.1300E-02    0.9417       -4.8057E-12     0.000       -0.9417        1.5000E-04    0.2556         0000000
 103670000      x    5.1300E-02    0.9417       -4.8057E-12     0.000       -0.9417        1.5000E-04    0.2556         0000000
 103680000      x    5.1300E-02    0.8750        0.8750         0.000        0.000         1.5000E-04    0.2556         0000000
 103690000      x    5.1300E-02    0.8750        0.8750         0.000        0.000         1.5000E-04    0.2556         0000000
 103700000      x    5.1300E-02    0.8750        0.8750         0.000        0.000         1.5000E-04    0.2556         0000000
 103710000      x    5.1300E-02    0.8750        0.8750         0.000        0.000         1.5000E-04    0.2556         0000000
 103720000      x    5.1300E-02    0.8750        0.8750         0.000        0.000         1.5000E-04    0.2556         0000000
 103730000      x    5.1300E-02    0.8750        0.8750         0.000        0.000         1.5000E-04    0.2556         0000000
 103740000      x    5.1300E-02    0.8750        0.8750         0.000        0.000         1.5000E-04    0.2556         0000000
 103750000      x    5.1300E-02    0.8750        0.8750         0.000        0.000         1.5000E-04    0.2556         0000000
0Default friction shape ratio (1.0) and visc. ratio (0.0) being used and no user friction input entered.
0 Vol no.   i.c.    i.c.value 1   i.c.value 2   i.c.value 3   i.c.value 4   i.c.value 5   i.c.value 6   i.c.value 7   boron conc.
            flag
 103010000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103020000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103030000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103040000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103050000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103060000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103070000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103080000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103090000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103100000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103110000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103120000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103130000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103140000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103150000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103160000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103170000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103180000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103190000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103200000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103210000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103220000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103230000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103240000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103250000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103260000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103270000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103280000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103290000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103300000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 103310000      2     813.0        0.9975        0.000         0.000         0.000         0.000         0.000         0.000
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Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

103320000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103330000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103340000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103350000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103360000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103370000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103380000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103390000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103400000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103410000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103420000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103430000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103440000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103450000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103460000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103470000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103480000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103490000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103500000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103510000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103520000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103530000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103540000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103550000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103560000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103570000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103580000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103590000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103600000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103610000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103620000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103630000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103640000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103650000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103660000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103670000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103680000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103690000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103700000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103710000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103720000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103730000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103740000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
103750000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000

0: Jun.no.	junction area (ft2)	jun-flag efvcahs	init. liq. flow (lbm/sec)	init. vap. flow (lbm/sec)
103010000	5.130000E-02	0001000	0.00000	0.00000
103020000	5.130000E-02	0001000	0.00000	0.00000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

103030000	5.130000E-02	0001000	0.00000	0.00000
103040000	5.130000E-02	0001000	0.00000	0.00000
103050000	5.130000E-02	0001000	0.00000	0.00000
103060000	5.130000E-02	0001000	0.00000	0.00000
103070000	5.130000E-02	0001000	0.00000	0.00000
103080000	5.130000E-02	0001000	0.00000	0.00000
103090000	5.130000E-02	0001000	0.00000	0.00000
103100000	5.130000E-02	0001000	0.00000	0.00000
103110000	5.130000E-02	0001000	0.00000	0.00000
103120000	5.130000E-02	0001000	0.00000	0.00000
103130000	5.130000E-02	0001000	0.00000	0.00000
103140000	5.130000E-02	0001000	0.00000	0.00000
103150000	5.130000E-02	0001000	0.00000	0.00000
103160000	5.130000E-02	0001000	0.00000	0.00000
103170000	5.130000E-02	0001000	0.00000	0.00000
103180000	5.130000E-02	0001000	0.00000	0.00000
103190000	5.130000E-02	0001000	0.00000	0.00000
103200000	5.130000E-02	0001000	0.00000	0.00000
103210000	5.130000E-02	0001000	0.00000	0.00000
103220000	5.130000E-02	0001000	0.00000	0.00000
103230000	5.130000E-02	0001000	0.00000	0.00000
103240000	5.130000E-02	0001000	0.00000	0.00000
103250000	5.130000E-02	0001000	0.00000	0.00000
103260000	5.130000E-02	0001000	0.00000	0.00000
103270000	5.130000E-02	0001000	0.00000	0.00000
103280000	5.130000E-02	0001000	0.00000	0.00000
103290000	5.130000E-02	0001000	0.00000	0.00000
103300000	5.130000E-02	0001000	0.00000	0.00000
103310000	5.130000E-02	0001000	0.00000	0.00000
103320000	5.130000E-02	0001000	0.00000	0.00000
103330000	5.130000E-02	0001000	0.00000	0.00000
103340000	5.130000E-02	0001000	0.00000	0.00000
103350000	5.130000E-02	0001000	0.00000	0.00000
103360000	5.130000E-02	0001000	0.00000	0.00000
103370000	5.130000E-02	0001000	0.00000	0.00000
103380000	5.130000E-02	0001000	0.00000	0.00000
103390000	5.130000E-02	0001000	0.00000	0.00000
103400000	5.130000E-02	0001000	0.00000	0.00000
103410000	5.130000E-02	0001000	0.00000	0.00000
103420000	5.130000E-02	0001000	0.00000	0.00000
103430000	5.130000E-02	0001000	0.00000	0.00000
103440000	5.130000E-02	0001000	0.00000	0.00000
103450000	5.130000E-02	0001000	0.00000	0.00000
103460000	5.130000E-02	0001000	0.00000	0.00000
103470000	5.130000E-02	0001000	0.00000	0.00000
103480000	5.130000E-02	0001000	0.00000	0.00000
103490000	5.130000E-02	0001000	0.00000	0.00000
103500000	5.130000E-02	0001000	0.00000	0.00000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

103510000	5.130000E-02	0001000	0.00000	0.00000
103520000	5.130000E-02	0001000	0.00000	0.00000
103530000	5.130000E-02	0001000	0.00000	0.00000
103540000	5.130000E-02	0001000	0.00000	0.00000
103550000	5.130000E-02	0001000	0.00000	0.00000
103560000	5.130000E-02	0001000	0.00000	0.00000
103570000	5.130000E-02	0001000	0.00000	0.00000
103580000	5.130000E-02	0001000	0.00000	0.00000
103590000	5.130000E-02	0001000	0.00000	0.00000
103600000	5.130000E-02	0001000	0.00000	0.00000
103610000	5.130000E-02	0001000	0.00000	0.00000
103620000	5.130000E-02	0001000	0.00000	0.00000
103630000	5.130000E-02	0001000	0.00000	0.00000
103640000	5.130000E-02	0001000	0.00000	0.00000
103650000	5.130000E-02	0001000	0.00000	0.00000
103660000	5.130000E-02	0001000	0.00000	0.00000
103670000	5.130000E-02	0001000	0.00000	0.00000
103680000	5.130000E-02	0001000	0.00000	0.00000
103690000	5.130000E-02	0001000	0.00000	0.00000
103700000	5.130000E-02	0001000	0.00000	0.00000
103710000	5.130000E-02	0001000	0.00000	0.00000
103720000	5.130000E-02	0001000	0.00000	0.00000
103730000	5.130000E-02	0001000	0.00000	0.00000
103740000	5.130000E-02	0001000	0.00000	0.00000

0 Jun.no.	forward loss coefficient	forward loss multiplier	forward loss exponent	reverse loss coefficient	reverse loss multiplier	reverse loss exponent
103010000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103020000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103030000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103040000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
103050000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103060000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103070000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
103080000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103090000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103100000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103110000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103120000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103130000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103140000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
103150000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103160000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103170000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103180000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103190000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103200000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103210000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103220000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

103230000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103240000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103250000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103260000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103270000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
103280000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103290000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103300000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103310000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103320000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
103330000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103340000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103350000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103360000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103370000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103380000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103390000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103400000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103410000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103420000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103430000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103440000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103450000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103460000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103470000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
103480000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103490000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103500000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103510000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103520000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103530000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103540000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103550000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103560000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103570000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103580000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103590000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103600000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103610000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103620000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103630000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103640000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103650000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103660000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103670000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
103680000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103690000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
103700000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 103710000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 103720000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 103730000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 103740000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
0  Jun.no.     junction diam.   beta factor      gas intercept    slope
               (ft)
 103010000     0.255572          0.00000          1.00000          1.00000
 103020000     0.255572          0.00000          1.00000          1.00000
 103030000     0.255572          0.00000          1.00000          1.00000
 103040000     0.255572          0.00000          1.00000          1.00000
 103050000     0.255572          0.00000          1.00000          1.00000
 103060000     0.255572          0.00000          1.00000          1.00000
 103070000     0.255572          0.00000          1.00000          1.00000
 103080000     0.255572          0.00000          1.00000          1.00000
 103090000     0.255572          0.00000          1.00000          1.00000
 103100000     0.255572          0.00000          1.00000          1.00000
 103110000     0.255572          0.00000          1.00000          1.00000
 103120000     0.255572          0.00000          1.00000          1.00000
 103130000     0.255572          0.00000          1.00000          1.00000
 103140000     0.255572          0.00000          1.00000          1.00000
 103150000     0.255572          0.00000          1.00000          1.00000
 103160000     0.255572          0.00000          1.00000          1.00000
 103170000     0.255572          0.00000          1.00000          1.00000
 103180000     0.255572          0.00000          1.00000          1.00000
 103190000     0.255572          0.00000          1.00000          1.00000
 103200000     0.255572          0.00000          1.00000          1.00000
 103210000     0.255572          0.00000          1.00000          1.00000
 103220000     0.255572          0.00000          1.00000          1.00000
 103230000     0.255572          0.00000          1.00000          1.00000
 103240000     0.255572          0.00000          1.00000          1.00000
 103250000     0.255572          0.00000          1.00000          1.00000
 103260000     0.255572          0.00000          1.00000          1.00000
 103270000     0.255572          0.00000          1.00000          1.00000
 103280000     0.255572          0.00000          1.00000          1.00000
 103290000     0.255572          0.00000          1.00000          1.00000
 103300000     0.255572          0.00000          1.00000          1.00000
 103310000     0.255572          0.00000          1.00000          1.00000
 103320000     0.255572          0.00000          1.00000          1.00000
 103330000     0.255572          0.00000          1.00000          1.00000
 103340000     0.255572          0.00000          1.00000          1.00000
 103350000     0.255572          0.00000          1.00000          1.00000
 103360000     0.255572          0.00000          1.00000          1.00000
 103370000     0.255572          0.00000          1.00000          1.00000
 103380000     0.255572          0.00000          1.00000          1.00000
 103390000     0.255572          0.00000          1.00000          1.00000
 103400000     0.255572          0.00000          1.00000          1.00000
 103410000     0.255572          0.00000          1.00000          1.00000
 103420000     0.255572          0.00000          1.00000          1.00000
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 103430000     0.255572          0.00000          1.00000          1.00000
 103440000     0.255572          0.00000          1.00000          1.00000
 103450000     0.255572          0.00000          1.00000          1.00000
 103460000     0.255572          0.00000          1.00000          1.00000
 103470000     0.255572          0.00000          1.00000          1.00000
 103480000     0.255572          0.00000          1.00000          1.00000
 103490000     0.255572          0.00000          1.00000          1.00000
 103500000     0.255572          0.00000          1.00000          1.00000
 103510000     0.255572          0.00000          1.00000          1.00000
 103520000     0.255572          0.00000          1.00000          1.00000
 103530000     0.255572          0.00000          1.00000          1.00000
 103540000     0.255572          0.00000          1.00000          1.00000
 103550000     0.255572          0.00000          1.00000          1.00000
 103560000     0.255572          0.00000          1.00000          1.00000
 103570000     0.255572          0.00000          1.00000          1.00000
 103580000     0.255572          0.00000          1.00000          1.00000
 103590000     0.255572          0.00000          1.00000          1.00000
 103600000     0.255572          0.00000          1.00000          1.00000
 103610000     0.255572          0.00000          1.00000          1.00000
 103620000     0.255572          0.00000          1.00000          1.00000
 103630000     0.255572          0.00000          1.00000          1.00000
 103640000     0.255572          0.00000          1.00000          1.00000
 103650000     0.255572          0.00000          1.00000          1.00000
 103660000     0.255572          0.00000          1.00000          1.00000
 103670000     0.255572          0.00000          1.00000          1.00000
 103680000     0.255572          0.00000          1.00000          1.00000
 103690000     0.255572          0.00000          1.00000          1.00000
 103700000     0.255572          0.00000          1.00000          1.00000
 103710000     0.255572          0.00000          1.00000          1.00000
 103720000     0.255572          0.00000          1.00000          1.00000
 103730000     0.255572          0.00000          1.00000          1.00000
 103740000     0.255572          0.00000          1.00000          1.00000
0==========================================================================
                    Input data for component 104, 60DEG    sngljun , having   0 volumes and   1 junctions
0 Jun.no. from vol.   to vol.  jun. area     jun-flag  subcooled     two-phase     superheated
                               (ft2)         jefvcahs  dschg. coef.  dschg. coef.  dschg. coef.
 104000000 103750002 105010001  5.130000E-02  00001000  1.000000E+00  1.400000E-01  0.000000E+00
0 Jun.no.     forward loss    forward loss    forward loss    reverse loss    reverse loss    reverse loss
              coefficient     multiplier      exponent        coefficient     multiplier      exponent
 104000000     1.336000E-01    0.000000E+00    0.000000E+00    1.336000E-01    0.000000E+00    0.000000E+00
0 Jun.no.                         junction diam.   beta factor      gas intercept    slope
                                  (ft)
 104000000                        2.555723E-01     0.000000E+00     1.000000E+00     1.000000E+00
0 Jun.no.                         init. liq. flow  init. vap. flow
                                   (lbm/sec)        (lbm/sec)
 104000000                        0.000000E+00     0.000000E+00
0==========================================================================
                    Input data for component 105, 3PIPE    pipe    , having  92 volumes and  91 junctions
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

0 Vol no.	volume (ft3)	angle 1 (deg)	angle 2 (deg)	angle 3 (deg)	vol-flag tlpvb_e
105010000	4.5600E-02	0.000	0.000	0.000	0000000
105020000	4.5600E-02	0.000	0.000	0.000	0000000
105030000	4.5600E-02	0.000	0.000	0.000	0000000
105040000	4.5600E-02	0.000	0.000	0.000	0000000
105050000	4.5600E-02	0.000	0.000	0.000	0000000
105060000	4.5600E-02	0.000	0.000	0.000	0000000
105070000	4.5600E-02	0.000	0.000	0.000	0000000
105080000	4.5600E-02	0.000	0.000	0.000	0000000
105090000	4.5600E-02	0.000	0.000	0.000	0000000
105100000	4.5600E-02	0.000	0.000	0.000	0000000
105110000	4.5600E-02	0.000	0.000	0.000	0000000
105120000	4.5600E-02	0.000	0.000	0.000	0000000
105130000	4.5600E-02	0.000	0.000	0.000	0000000
105140000	4.5600E-02	0.000	0.000	0.000	0000000
105150000	4.5600E-02	0.000	0.000	0.000	0000000
105160000	4.5600E-02	0.000	0.000	0.000	0000000
105170000	4.5600E-02	0.000	0.000	0.000	0000000
105180000	4.5600E-02	0.000	0.000	0.000	0000000
105190000	4.5600E-02	0.000	0.000	0.000	0000000
105200000	4.5600E-02	0.000	0.000	0.000	0000000
105210000	4.5600E-02	0.000	0.000	0.000	0000000
105220000	4.5600E-02	0.000	0.000	0.000	0000000
105230000	4.5600E-02	0.000	0.000	0.000	0000000
105240000	4.5600E-02	0.000	0.000	0.000	0000000
105250000	4.5600E-02	0.000	0.000	0.000	0000000
105260000	4.5600E-02	0.000	0.000	0.000	0000000
105270000	4.5600E-02	0.000	0.000	0.000	0000000
105280000	4.5600E-02	0.000	0.000	0.000	0000000
105290000	4.5600E-02	0.000	0.000	0.000	0000000
105300000	4.5600E-02	0.000	0.000	0.000	0000000
105310000	4.5600E-02	0.000	0.000	0.000	0000000
105320000	4.5600E-02	0.000	0.000	0.000	0000000
105330000	4.5600E-02	0.000	0.000	0.000	0000000
105340000	4.5600E-02	0.000	0.000	0.000	0000000
105350000	4.5600E-02	0.000	0.000	0.000	0000000
105360000	4.5600E-02	0.000	0.000	0.000	0000000
105370000	4.5600E-02	0.000	0.000	0.000	0000000
105380000	4.5600E-02	0.000	0.000	0.000	0000000
105390000	4.5600E-02	0.000	0.000	0.000	0000000
105400000	4.5600E-02	0.000	0.000	0.000	0000000
105410000	4.5600E-02	0.000	0.000	0.000	0000000
105420000	4.5600E-02	0.000	0.000	0.000	0000000
105430000	4.5600E-02	0.000	0.000	0.000	0000000
105440000	4.5600E-02	0.000	0.000	0.000	0000000
105450000	4.5600E-02	0.000	0.000	0.000	0000000
105460000	4.5600E-02	0.000	0.000	0.000	0000000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
105470000    4.5600E-02    0.000         0.000         0.000         0000000
105480000    4.5600E-02    0.000         0.000         0.000         0000000
105490000    4.5600E-02    0.000         0.000         0.000         0000000
105500000    4.5600E-02    0.000         0.000         0.000         0000000
105510000    4.5600E-02    0.000         0.000         0.000         0000000
105520000    4.5600E-02    0.000         0.000         0.000         0000000
105530000    4.5600E-02    0.000         0.000         0.000         0000000
105540000    4.5600E-02    0.000         0.000         0.000         0000000
105550000    4.5600E-02    0.000         0.000         0.000         0000000
105560000    4.5600E-02    0.000         0.000         0.000         0000000
105570000    4.5600E-02    0.000         0.000         0.000         0000000
105580000    4.5600E-02    0.000         0.000         0.000         0000000
105590000    4.5600E-02    0.000         0.000         0.000         0000000
105600000    4.5600E-02    0.000         0.000         0.000         0000000
105610000    4.5600E-02    0.000         0.000         0.000         0000000
105620000    4.5600E-02    0.000         0.000         0.000         0000000
105630000    4.5600E-02    0.000         0.000         0.000         0000000
105640000    4.5600E-02    0.000         0.000         0.000         0000000
105650000    4.5600E-02    0.000         0.000         0.000         0000000
105660000    4.5600E-02    0.000         0.000         0.000         0000000
105670000    4.5600E-02    0.000         0.000         0.000         0000000
105680000    4.5600E-02    0.000         0.000         0.000         0000000
105690000    4.5600E-02    0.000         0.000         0.000         0000000
105700000    4.5600E-02    0.000         0.000         0.000         0000000
105710000    4.5600E-02    0.000         0.000         0.000         0000000
105720000    4.5600E-02    0.000         0.000         0.000         0000000
105730000    4.5600E-02    0.000         0.000         0.000         0000000
105740000    4.5600E-02    0.000         0.000         0.000         0000000
105750000    4.5600E-02    0.000         0.000         0.000         0000000
105760000    4.5600E-02    0.000         0.000         0.000         0000000
105770000    4.5600E-02    0.000         0.000         0.000         0000000
105780000    4.5600E-02    0.000         0.000         0.000         0000000
105790000    4.5600E-02    0.000         0.000         0.000         0000000
105800000    4.5600E-02    0.000         0.000         0.000         0000000
105810000    4.5600E-02    0.000         0.000         0.000         0000000
105820000    4.5600E-02    0.000         0.000         0.000         0000000
105830000    4.5600E-02    0.000         0.000         0.000         0000000
105840000    4.5600E-02    0.000         0.000         0.000         0000000
105850000    4.5600E-02    0.000         0.000         0.000         0000000
105860000    4.5600E-02    0.000         0.000         0.000         0000000
105870000    4.5600E-02    0.000         0.000         0.000         0000000
105880000    4.5600E-02    0.000         0.000         0.000         0000000
105890000    4.5600E-02    0.000         0.000         0.000         0000000
105900000    4.5600E-02    0.000         0.000         0.000         0000000
105910000    3.9544E-02    0.000         0.000         0.000         0000000
105920000    3.9544E-02    0.000         0.000         0.000         0000000
0  Vol no. coord.    flow area     flow length   sp.x. chng.   sp.y. chng.   sp.z. chng.   roughness     hydrlc.diam.  xyz-flag
                     (ft2)         (ft)          (ft)          (ft)          (ft)          (ft)          (ft)          _____f_
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105010000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105020000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105030000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105040000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105050000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105060000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105070000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105080000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105090000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105100000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105110000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105120000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105130000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105140000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105150000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105160000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105170000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105180000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105190000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105200000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105210000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105220000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105230000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105240000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105250000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105260000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105270000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105280000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105290000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105300000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105310000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105320000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105330000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105340000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105350000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105360000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105370000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105380000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105390000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105400000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105410000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105420000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105430000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105440000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105450000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105460000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105470000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105480000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105490000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105500000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105510000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105520000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105530000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105540000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105550000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105560000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105570000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105580000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105590000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105600000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105610000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105620000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105630000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105640000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105650000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105660000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105670000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105680000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105690000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105700000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105710000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105720000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105730000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105740000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105750000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105760000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105770000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105780000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105790000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105800000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105810000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105820000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105830000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105840000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105850000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105860000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105870000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105880000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105890000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105900000	x	5.1300E-02	0.8889	0.8889	0.000	0.000	1.5000E-04	0.2556	0000000
105910000	x	5.1300E-02	0.7708	0.7708	0.000	0.000	1.5000E-04	0.2556	0000000
105920000	x	5.1300E-02	0.7708	0.7708	0.000	0.000	1.5000E-04	0.2556	0000000

0Default friction shape ratio (1.0) and visc. ratio (0.0) being used and no user friction input entered.

0 Vol no.	i.c. flag	i.c.value 1	i.c.value 2	i.c.value 3	i.c.value 4	i.c.value 5	i.c.value 6	i.c.value 7	boron conc.
105010000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105020000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105030000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105040000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105050000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105060000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105070000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105080000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105090000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105100000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105110000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105120000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105130000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105140000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105150000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105160000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105170000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105180000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105190000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105200000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105210000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105220000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105230000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105240000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105250000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105260000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105270000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105280000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105290000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105300000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105310000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105320000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105330000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105340000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105350000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105360000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105370000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105380000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105390000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105400000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105410000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105420000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105430000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105440000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105450000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105460000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105470000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105480000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105490000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105500000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105510000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105520000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105530000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105540000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105550000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105560000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105570000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105580000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105590000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105600000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105610000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105620000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105630000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105640000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105650000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105660000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105670000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105680000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105690000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105700000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105710000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105720000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105730000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105740000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105750000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105760000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105770000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105780000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105790000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105800000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105810000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105820000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105830000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105840000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105850000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105860000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105870000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105880000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105890000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105900000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105910000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
105920000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000

0

Jun.no.	junction area (ft2)	jun-flag efvcahs	init. liq. flow (lbm/sec)	init. vap. flow (lbm/sec)
105010000	5.130000E-02	0001000	0.00000	0.00000
105020000	5.130000E-02	0001000	0.00000	0.00000
105030000	5.130000E-02	0001000	0.00000	0.00000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105040000	5.130000E-02	0001000	0.00000	0.00000
105050000	5.130000E-02	0001000	0.00000	0.00000
105060000	5.130000E-02	0001000	0.00000	0.00000
105070000	5.130000E-02	0001000	0.00000	0.00000
105080000	5.130000E-02	0001000	0.00000	0.00000
105090000	5.130000E-02	0001000	0.00000	0.00000
105100000	5.130000E-02	0001000	0.00000	0.00000
105110000	5.130000E-02	0001000	0.00000	0.00000
105120000	5.130000E-02	0001000	0.00000	0.00000
105130000	5.130000E-02	0001000	0.00000	0.00000
105140000	5.130000E-02	0001000	0.00000	0.00000
105150000	5.130000E-02	0001000	0.00000	0.00000
105160000	5.130000E-02	0001000	0.00000	0.00000
105170000	5.130000E-02	0001000	0.00000	0.00000
105180000	5.130000E-02	0001000	0.00000	0.00000
105190000	5.130000E-02	0001000	0.00000	0.00000
105200000	5.130000E-02	0001000	0.00000	0.00000
105210000	5.130000E-02	0001000	0.00000	0.00000
105220000	5.130000E-02	0001000	0.00000	0.00000
105230000	5.130000E-02	0001000	0.00000	0.00000
105240000	5.130000E-02	0001000	0.00000	0.00000
105250000	5.130000E-02	0001000	0.00000	0.00000
105260000	5.130000E-02	0001000	0.00000	0.00000
105270000	5.130000E-02	0001000	0.00000	0.00000
105280000	5.130000E-02	0001000	0.00000	0.00000
105290000	5.130000E-02	0001000	0.00000	0.00000
105300000	5.130000E-02	0001000	0.00000	0.00000
105310000	5.130000E-02	0001000	0.00000	0.00000
105320000	5.130000E-02	0001000	0.00000	0.00000
105330000	5.130000E-02	0001000	0.00000	0.00000
105340000	5.130000E-02	0001000	0.00000	0.00000
105350000	5.130000E-02	0001000	0.00000	0.00000
105360000	5.130000E-02	0001000	0.00000	0.00000
105370000	5.130000E-02	0001000	0.00000	0.00000
105380000	5.130000E-02	0001000	0.00000	0.00000
105390000	5.130000E-02	0001000	0.00000	0.00000
105400000	5.130000E-02	0001000	0.00000	0.00000
105410000	5.130000E-02	0001000	0.00000	0.00000
105420000	5.130000E-02	0001000	0.00000	0.00000
105430000	5.130000E-02	0001000	0.00000	0.00000
105440000	5.130000E-02	0001000	0.00000	0.00000
105450000	5.130000E-02	0001000	0.00000	0.00000
105460000	5.130000E-02	0001000	0.00000	0.00000
105470000	5.130000E-02	0001000	0.00000	0.00000
105480000	5.130000E-02	0001000	0.00000	0.00000
105490000	5.130000E-02	0001000	0.00000	0.00000
105500000	5.130000E-02	0001000	0.00000	0.00000
105510000	5.130000E-02	0001000	0.00000	0.00000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
105520000     5.130000E-02        0001000      0.00000          0.00000
105530000     5.130000E-02        0001000      0.00000          0.00000
105540000     5.130000E-02        0001000      0.00000          0.00000
105550000     5.130000E-02        0001000      0.00000          0.00000
105560000     5.130000E-02        0001000      0.00000          0.00000
105570000     5.130000E-02        0001000      0.00000          0.00000
105580000     5.130000E-02        0001000      0.00000          0.00000
105590000     5.130000E-02        0001000      0.00000          0.00000
105600000     5.130000E-02        0001000      0.00000          0.00000
105610000     5.130000E-02        0001000      0.00000          0.00000
105620000     5.130000E-02        0001000      0.00000          0.00000
105630000     5.130000E-02        0001000      0.00000          0.00000
105640000     5.130000E-02        0001000      0.00000          0.00000
105650000     5.130000E-02        0001000      0.00000          0.00000
105660000     5.130000E-02        0001000      0.00000          0.00000
105670000     5.130000E-02        0001000      0.00000          0.00000
105680000     5.130000E-02        0001000      0.00000          0.00000
105690000     5.130000E-02        0001000      0.00000          0.00000
105700000     5.130000E-02        0001000      0.00000          0.00000
105710000     5.130000E-02        0001000      0.00000          0.00000
105720000     5.130000E-02        0001000      0.00000          0.00000
105730000     5.130000E-02        0001000      0.00000          0.00000
105740000     5.130000E-02        0001000      0.00000          0.00000
105750000     5.130000E-02        0001000      0.00000          0.00000
105760000     5.130000E-02        0001000      0.00000          0.00000
105770000     5.130000E-02        0001000      0.00000          0.00000
105780000     5.130000E-02        0001000      0.00000          0.00000
105790000     5.130000E-02        0001000      0.00000          0.00000
105800000     5.130000E-02        0001000      0.00000          0.00000
105810000     5.130000E-02        0001000      0.00000          0.00000
105820000     5.130000E-02        0001000      0.00000          0.00000
105830000     5.130000E-02        0001000      0.00000          0.00000
105840000     5.130000E-02        0001000      0.00000          0.00000
105850000     5.130000E-02        0001000      0.00000          0.00000
105860000     5.130000E-02        0001000      0.00000          0.00000
105870000     5.130000E-02        0001000      0.00000          0.00000
105880000     5.130000E-02        0001000      0.00000          0.00000
105890000     5.130000E-02        0001000      0.00000          0.00000
105900000     5.130000E-02        0001000      0.00000          0.00000
105910000     5.130000E-02        0001000      0.00000          0.00000
0 Jun.no.     forward loss     forward loss    forward loss    reverse loss    reverse loss    reverse loss
              coefficient      multiplier      exponent          coefficient     multiplier      exponent
105010000     0.000000E+00     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105020000     0.000000E+00     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105030000     0.000000E+00     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105040000     0.000000E+00     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105050000     0.000000E+00     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105060000     0.000000E+00     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105070000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105080000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105090000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105100000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105110000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105120000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105130000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105140000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105150000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105160000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105170000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105180000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105190000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105200000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105210000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105220000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105230000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105240000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105250000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105260000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105270000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105280000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105290000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105300000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105310000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105320000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105330000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105340000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105350000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105360000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105370000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105380000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105390000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105400000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105410000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105420000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105430000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105440000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105450000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105460000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105470000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105480000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105490000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105500000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105510000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105520000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105530000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
105540000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
105550000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105560000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105570000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105580000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105590000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105600000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105610000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105620000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105630000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105640000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105650000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105660000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105670000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105680000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105690000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105700000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105710000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105720000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105730000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105740000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105750000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105760000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105770000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105780000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105790000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105800000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105810000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105820000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105830000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105840000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105850000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105860000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105870000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105880000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105890000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
105900000     1.710000E-01    0.000000E+00    0.000000E+00    1.710000E-01    0.000000E+00    0.000000E+00
105910000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
0  Jun.no.    junction diam.   beta factor     gas intercept    slope
              (ft)
105010000     0.255572          0.00000         1.00000         1.00000
105020000     0.255572          0.00000         1.00000         1.00000
105030000     0.255572          0.00000         1.00000         1.00000
105040000     0.255572          0.00000         1.00000         1.00000
105050000     0.255572          0.00000         1.00000         1.00000
105060000     0.255572          0.00000         1.00000         1.00000
105070000     0.255572          0.00000         1.00000         1.00000
105080000     0.255572          0.00000         1.00000         1.00000
105090000     0.255572          0.00000         1.00000         1.00000
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105100000	0.255572	0.00000	1.00000	1.00000
105110000	0.255572	0.00000	1.00000	1.00000
105120000	0.255572	0.00000	1.00000	1.00000
105130000	0.255572	0.00000	1.00000	1.00000
105140000	0.255572	0.00000	1.00000	1.00000
105150000	0.255572	0.00000	1.00000	1.00000
105160000	0.255572	0.00000	1.00000	1.00000
105170000	0.255572	0.00000	1.00000	1.00000
105180000	0.255572	0.00000	1.00000	1.00000
105190000	0.255572	0.00000	1.00000	1.00000
105200000	0.255572	0.00000	1.00000	1.00000
105210000	0.255572	0.00000	1.00000	1.00000
105220000	0.255572	0.00000	1.00000	1.00000
105230000	0.255572	0.00000	1.00000	1.00000
105240000	0.255572	0.00000	1.00000	1.00000
105250000	0.255572	0.00000	1.00000	1.00000
105260000	0.255572	0.00000	1.00000	1.00000
105270000	0.255572	0.00000	1.00000	1.00000
105280000	0.255572	0.00000	1.00000	1.00000
105290000	0.255572	0.00000	1.00000	1.00000
105300000	0.255572	0.00000	1.00000	1.00000
105310000	0.255572	0.00000	1.00000	1.00000
105320000	0.255572	0.00000	1.00000	1.00000
105330000	0.255572	0.00000	1.00000	1.00000
105340000	0.255572	0.00000	1.00000	1.00000
105350000	0.255572	0.00000	1.00000	1.00000
105360000	0.255572	0.00000	1.00000	1.00000
105370000	0.255572	0.00000	1.00000	1.00000
105380000	0.255572	0.00000	1.00000	1.00000
105390000	0.255572	0.00000	1.00000	1.00000
105400000	0.255572	0.00000	1.00000	1.00000
105410000	0.255572	0.00000	1.00000	1.00000
105420000	0.255572	0.00000	1.00000	1.00000
105430000	0.255572	0.00000	1.00000	1.00000
105440000	0.255572	0.00000	1.00000	1.00000
105450000	0.255572	0.00000	1.00000	1.00000
105460000	0.255572	0.00000	1.00000	1.00000
105470000	0.255572	0.00000	1.00000	1.00000
105480000	0.255572	0.00000	1.00000	1.00000
105490000	0.255572	0.00000	1.00000	1.00000
105500000	0.255572	0.00000	1.00000	1.00000
105510000	0.255572	0.00000	1.00000	1.00000
105520000	0.255572	0.00000	1.00000	1.00000
105530000	0.255572	0.00000	1.00000	1.00000
105540000	0.255572	0.00000	1.00000	1.00000
105550000	0.255572	0.00000	1.00000	1.00000
105560000	0.255572	0.00000	1.00000	1.00000
105570000	0.255572	0.00000	1.00000	1.00000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 105580000     0.255572          0.00000          1.00000          1.00000
 105590000     0.255572          0.00000          1.00000          1.00000
 105600000     0.255572          0.00000          1.00000          1.00000
 105610000     0.255572          0.00000          1.00000          1.00000
 105620000     0.255572          0.00000          1.00000          1.00000
 105630000     0.255572          0.00000          1.00000          1.00000
 105640000     0.255572          0.00000          1.00000          1.00000
 105650000     0.255572          0.00000          1.00000          1.00000
 105660000     0.255572          0.00000          1.00000          1.00000
 105670000     0.255572          0.00000          1.00000          1.00000
 105680000     0.255572          0.00000          1.00000          1.00000
 105690000     0.255572          0.00000          1.00000          1.00000
 105700000     0.255572          0.00000          1.00000          1.00000
 105710000     0.255572          0.00000          1.00000          1.00000
 105720000     0.255572          0.00000          1.00000          1.00000
 105730000     0.255572          0.00000          1.00000          1.00000
 105740000     0.255572          0.00000          1.00000          1.00000
 105750000     0.255572          0.00000          1.00000          1.00000
 105760000     0.255572          0.00000          1.00000          1.00000
 105770000     0.255572          0.00000          1.00000          1.00000
 105780000     0.255572          0.00000          1.00000          1.00000
 105790000     0.255572          0.00000          1.00000          1.00000
 105800000     0.255572          0.00000          1.00000          1.00000
 105810000     0.255572          0.00000          1.00000          1.00000
 105820000     0.255572          0.00000          1.00000          1.00000
 105830000     0.255572          0.00000          1.00000          1.00000
 105840000     0.255572          0.00000          1.00000          1.00000
 105850000     0.255572          0.00000          1.00000          1.00000
 105860000     0.255572          0.00000          1.00000          1.00000
 105870000     0.255572          0.00000          1.00000          1.00000
 105880000     0.255572          0.00000          1.00000          1.00000
 105890000     0.255572          0.00000          1.00000          1.00000
 105900000     0.255572          0.00000          1.00000          1.00000
 105910000     0.255572          0.00000          1.00000          1.00000
0=====================================================================
                    Input data for component 106, ELBOW    sngljun , having   0 volumes and   1 junctions
0 Jun.no. from vol.   to vol.  jun. area     jun-flag  subcooled     two-phase     superheated
                               (ft2)         jefvcahs  dschg. coef.  dschg. coef.  dschg. coef.
 106000000 105920002 107010001  5.130000E-02  00001000  1.000000E+00  1.400000E-01  0.000000E+00
0 Jun.no.     forward loss    forward loss    forward loss    reverse loss    reverse loss    reverse loss
              coefficient     multiplier      exponent        coefficient     multiplier      exponent
 106000000     1.710000E-01    0.000000E+00    0.000000E+00    1.710000E-01    0.000000E+00    0.000000E+00
0 Jun.no.                         junction diam.   beta factor      gas intercept    slope
                                  (ft)
 106000000                        2.555723E-01     0.000000E+00     1.000000E+00     1.000000E+00
0 Jun.no.                         init. liq. flow  init. vap. flow
                                   (lbm/sec)        (lbm/sec)
 106000000                        0.000000E+00     0.000000E+00
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
0==========================================================================
                    Input data for component 107, 1A       pipe    , having  39 volumes and  38 junctions
0  Vol no.    volume        angle 1       angle 2       angle 3      vol-flag
              (ft3)         (deg)         (deg)         (deg)         tlpvb_e
 107010000    4.3581E-02     0.000         0.000         0.000        0000000
 107020000    4.3581E-02     0.000         0.000         0.000        0000000
 107030000    4.3581E-02     0.000         0.000         0.000        0000000
 107040000    4.3581E-02     0.000         0.000         0.000        0000000
 107050000    4.3581E-02     0.000         0.000         0.000        0000000
 107060000    4.3581E-02     0.000         0.000         0.000        0000000
 107070000    4.3581E-02     0.000         0.000         0.000        0000000
 107080000    4.3581E-02     0.000         0.000         0.000        0000000
 107090000    4.3581E-02     0.000         0.000         0.000        0000000
 107100000    4.3581E-02     0.000         0.000         0.000        0000000
 107110000    4.3581E-02     0.000         0.000         0.000        0000000
 107120000    4.3581E-02     0.000         0.000         0.000        0000000
 107130000    4.3581E-02     0.000         0.000         0.000        0000000
 107140000    4.3581E-02     0.000         0.000         0.000        0000000
 107150000    4.3581E-02     0.000         0.000         0.000        0000000
 107160000    4.3581E-02     0.000         0.000         0.000        0000000
 107170000    4.3581E-02     0.000         0.000         0.000        0000000
 107180000    4.3581E-02     0.000         0.000         0.000        0000000
 107190000    4.2037E-02     0.000       -90.00          0.000        0000000
 107200000    4.2037E-02     0.000       -90.00          0.000        0000000
 107210000    4.2037E-02     0.000       -90.00          0.000        0000000
 107220000    4.2037E-02     0.000       -90.00          0.000        0000000
 107230000    4.2037E-02     0.000       -90.00          0.000        0000000
 107240000    4.2037E-02     0.000       -90.00          0.000        0000000
 107250000    4.2037E-02     0.000       -90.00          0.000        0000000
 107260000    4.2037E-02     0.000       -90.00          0.000        0000000
 107270000    4.2037E-02     0.000       -90.00          0.000        0000000
 107280000    4.2037E-02     0.000       -90.00          0.000        0000000
 107290000    4.2037E-02     0.000       -90.00          0.000        0000000
 107300000    4.2037E-02     0.000       -90.00          0.000        0000000
 107310000    4.2037E-02     0.000       -90.00          0.000        0000000
 107320000    4.2037E-02     0.000       -90.00          0.000        0000000
 107330000    4.2037E-02     0.000       -90.00          0.000        0000000
 107340000    4.2037E-02     0.000       -90.00          0.000        0000000
 107350000    4.2037E-02     0.000       -90.00          0.000        0000000
 107360000    4.2037E-02     0.000       -90.00          0.000        0000000
 107370000    3.9188E-02     0.000         0.000         0.000        0000000
 107380000    3.9188E-02     0.000         0.000         0.000        0000000
 107390000    3.9188E-02     0.000         0.000         0.000        0000000
0  Vol no. coord.    flow area     flow length   sp.x. chng.   sp.y. chng.   sp.z. chng.   roughness     hydrlc.diam.  xyz-flag
                     (ft2)         (ft)          (ft)          (ft)          (ft)          (ft)          (ft)          _____f_
 107010000      x    5.1300E-02    0.8495        0.8495         0.000         0.000        1.5000E-04    0.2556        0000000
 107020000      x    5.1300E-02    0.8495        0.8495         0.000         0.000        1.5000E-04    0.2556        0000000
 107030000      x    5.1300E-02    0.8495        0.8495         0.000         0.000        1.5000E-04    0.2556        0000000
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 107040000      x    5.1300E-02    0.8495        0.8495        0.000         0.000         1.5000E-04    0.2556        0000000
 107050000      x    5.1300E-02    0.8495        0.8495        0.000         0.000         1.5000E-04    0.2556        0000000
 107060000      x    5.1300E-02    0.8495        0.8495        0.000         0.000         1.5000E-04    0.2556        0000000
 107070000      x    5.1300E-02    0.8495        0.8495        0.000         0.000         1.5000E-04    0.2556        0000000
 107080000      x    5.1300E-02    0.8495        0.8495        0.000         0.000         1.5000E-04    0.2556        0000000
 107090000      x    5.1300E-02    0.8495        0.8495        0.000         0.000         1.5000E-04    0.2556        0000000
 107100000      x    5.1300E-02    0.8495        0.8495        0.000         0.000         1.5000E-04    0.2556        0000000
 107110000      x    5.1300E-02    0.8495        0.8495        0.000         0.000         1.5000E-04    0.2556        0000000
 107120000      x    5.1300E-02    0.8495        0.8495        0.000         0.000         1.5000E-04    0.2556        0000000
 107130000      x    5.1300E-02    0.8495        0.8495        0.000         0.000         1.5000E-04    0.2556        0000000
 107140000      x    5.1300E-02    0.8495        0.8495        0.000         0.000         1.5000E-04    0.2556        0000000
 107150000      x    5.1300E-02    0.8495        0.8495        0.000         0.000         1.5000E-04    0.2556        0000000
 107160000      x    5.1300E-02    0.8495        0.8495        0.000         0.000         1.5000E-04    0.2556        0000000
 107170000      x    5.1300E-02    0.8495        0.8495        0.000         0.000         1.5000E-04    0.2556        0000000
 107180000      x    5.1300E-02    0.8495        0.8495        0.000         0.000         1.5000E-04    0.2556        0000000
 107190000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107200000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107210000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107220000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107230000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107240000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107250000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107260000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107270000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107280000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107290000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107300000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107310000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107320000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107330000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107340000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107350000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107360000      x    5.1300E-02    0.8194       -4.1819E-12    0.000        -0.8194        1.5000E-04    0.2556        0000000
 107370000      x    5.1300E-02    0.7639        0.7639        0.000         0.000         1.5000E-04    0.2556        0000000
 107380000      x    5.1300E-02    0.7639        0.7639        0.000         0.000         1.5000E-04    0.2556        0000000
 107390000      x    5.1300E-02    0.7639        0.7639        0.000         0.000         1.5000E-04    0.2556        0000000
0Default friction shape ratio (1.0) and visc. ratio (0.0) being used and no user friction input entered.
0  Vol no.    i.c.    i.c.value 1   i.c.value 2   i.c.value 3   i.c.value 4   i.c.value 5   i.c.value 6   i.c.value 7   boron conc.
             flag
 107010000      2     813.0         0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 107020000      2     813.0         0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 107030000      2     813.0         0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 107040000      2     813.0         0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 107050000      2     813.0         0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 107060000      2     813.0         0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 107070000      2     813.0         0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 107080000      2     813.0         0.9975        0.000         0.000         0.000         0.000         0.000         0.000
 107090000      2     813.0         0.9975        0.000         0.000         0.000         0.000         0.000         0.000
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

107100000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107110000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107120000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107130000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107140000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107150000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107160000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107170000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107180000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107190000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107200000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107210000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107220000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107230000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107240000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107250000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107260000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107270000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107280000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107290000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107300000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107310000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107320000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107330000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107340000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107350000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107360000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107370000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107380000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000
107390000	2	813.0	0.9975	0.000	0.000	0.000	0.000	0.000	0.000

0 Jun.no.	junction area (ft2)	jun-flag efvcahs	init. liq. flow (lbm/sec)	init. vap. flow (lbm/sec)
107010000	5.130000E-02	0001000	0.00000	0.00000
107020000	5.130000E-02	0001000	0.00000	0.00000
107030000	5.130000E-02	0001000	0.00000	0.00000
107040000	5.130000E-02	0001000	0.00000	0.00000
107050000	5.130000E-02	0001000	0.00000	0.00000
107060000	5.130000E-02	0001000	0.00000	0.00000
107070000	5.130000E-02	0001000	0.00000	0.00000
107080000	5.130000E-02	0001000	0.00000	0.00000
107090000	5.130000E-02	0001000	0.00000	0.00000
107100000	5.130000E-02	0001000	0.00000	0.00000
107110000	5.130000E-02	0001000	0.00000	0.00000
107120000	5.130000E-02	0001000	0.00000	0.00000
107130000	5.130000E-02	0001000	0.00000	0.00000
107140000	5.130000E-02	0001000	0.00000	0.00000
107150000	5.130000E-02	0001000	0.00000	0.00000
107160000	5.130000E-02	0001000	0.00000	0.00000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

107170000	5.130000E-02	0001000	0.00000	0.00000
107180000	5.130000E-02	0001000	0.00000	0.00000
107190000	5.130000E-02	0001000	0.00000	0.00000
107200000	5.130000E-02	0001000	0.00000	0.00000
107210000	5.130000E-02	0001000	0.00000	0.00000
107220000	5.130000E-02	0001000	0.00000	0.00000
107230000	5.130000E-02	0001000	0.00000	0.00000
107240000	5.130000E-02	0001000	0.00000	0.00000
107250000	5.130000E-02	0001000	0.00000	0.00000
107260000	5.130000E-02	0001000	0.00000	0.00000
107270000	5.130000E-02	0001000	0.00000	0.00000
107280000	5.130000E-02	0001000	0.00000	0.00000
107290000	5.130000E-02	0001000	0.00000	0.00000
107300000	5.130000E-02	0001000	0.00000	0.00000
107310000	5.130000E-02	0001000	0.00000	0.00000
107320000	5.130000E-02	0001000	0.00000	0.00000
107330000	5.130000E-02	0001000	0.00000	0.00000
107340000	5.130000E-02	0001000	0.00000	0.00000
107350000	5.130000E-02	0001000	0.00000	0.00000
107360000	5.130000E-02	0001000	0.00000	0.00000
107370000	5.130000E-02	0001000	0.00000	0.00000
107380000	5.130000E-02	0001000	0.00000	0.00000

0 Jun.no.	forward loss coefficient	forward loss multiplier	forward loss exponent	reverse loss coefficient	reverse loss multiplier	reverse loss exponent
107010000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107020000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107030000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107040000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107050000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107060000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107070000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107080000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107090000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107100000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107110000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107120000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107130000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107140000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107150000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107160000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107170000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107180000	1.710000E-01	0.000000E+00	0.000000E+00	1.710000E-01	0.000000E+00	0.000000E+00
107190000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107200000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107210000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107220000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107230000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
107240000	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 107250000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 107260000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 107270000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 107280000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 107290000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 107300000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 107310000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 107320000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 107330000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 107340000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 107350000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 107360000     1.710000E-01    0.000000E+00    0.000000E+00    1.710000E-01    0.000000E+00    0.000000E+00
 107370000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
 107380000     0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00    0.000000E+00
0 Jun.no.      junction diam.   beta factor      gas intercept    slope
               (ft)
 107010000     0.255572         0.00000          1.00000          1.00000
 107020000     0.255572         0.00000          1.00000          1.00000
 107030000     0.255572         0.00000          1.00000          1.00000
 107040000     0.255572         0.00000          1.00000          1.00000
 107050000     0.255572         0.00000          1.00000          1.00000
 107060000     0.255572         0.00000          1.00000          1.00000
 107070000     0.255572         0.00000          1.00000          1.00000
 107080000     0.255572         0.00000          1.00000          1.00000
 107090000     0.255572         0.00000          1.00000          1.00000
 107100000     0.255572         0.00000          1.00000          1.00000
 107110000     0.255572         0.00000          1.00000          1.00000
 107120000     0.255572         0.00000          1.00000          1.00000
 107130000     0.255572         0.00000          1.00000          1.00000
 107140000     0.255572         0.00000          1.00000          1.00000
 107150000     0.255572         0.00000          1.00000          1.00000
 107160000     0.255572         0.00000          1.00000          1.00000
 107170000     0.255572         0.00000          1.00000          1.00000
 107180000     0.255572         0.00000          1.00000          1.00000
 107190000     0.255572         0.00000          1.00000          1.00000
 107200000     0.255572         0.00000          1.00000          1.00000
 107210000     0.255572         0.00000          1.00000          1.00000
 107220000     0.255572         0.00000          1.00000          1.00000
 107230000     0.255572         0.00000          1.00000          1.00000
 107240000     0.255572         0.00000          1.00000          1.00000
 107250000     0.255572         0.00000          1.00000          1.00000
 107260000     0.255572         0.00000          1.00000          1.00000
 107270000     0.255572         0.00000          1.00000          1.00000
 107280000     0.255572         0.00000          1.00000          1.00000
 107290000     0.255572         0.00000          1.00000          1.00000
 107300000     0.255572         0.00000          1.00000          1.00000
 107310000     0.255572         0.00000          1.00000          1.00000
 107320000     0.255572         0.00000          1.00000          1.00000
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 107330000     0.255572          0.00000          1.00000          1.00000
 107340000     0.255572          0.00000          1.00000          1.00000
 107350000     0.255572          0.00000          1.00000          1.00000
 107360000     0.255572          0.00000          1.00000          1.00000
 107370000     0.255572          0.00000          1.00000          1.00000
 107380000     0.255572          0.00000          1.00000          1.00000
0=====================================================================
                     Input data for component 108, 1A       sngljun , having   0 volumes and   1 junctions
0  Jun.no. from vol.   to vol.  jun. area     jun-flag  subcooled     two-phase     superheated
                                (ft2)         jefvcahs  dschg. coef.  dschg. coef.  dschg. coef.
 108000000 107390002 109010001  5.130000E-02  00000100  1.000000E+00  1.400000E-01  0.000000E+00
0  Jun.no.     forward loss    forward loss    forward loss    reverse loss    reverse loss    reverse loss
               coefficient     multiplier      exponent         coefficient     multiplier      exponent
 108000000     1.710000E-01    0.000000E+00    0.000000E+00    1.710000E-01    0.000000E+00    0.000000E+00
0  Jun.no.                         junction diam.   beta factor      gas intercept    slope
                                   (ft)
 108000000                         2.555723E-01     0.000000E+00     1.000000E+00     1.000000E+00
0  Jun.no.                         init. liq. flow  init. vap. flow
                                    (lbm/sec)        (lbm/sec)
 108000000                         0.000000E+00     0.000000E+00
0=====================================================================
                     Input data for component 109, ATM      tmdpvol , having   1 volumes and   0 junctions
0  Vol no.     flow area        flow length      volume          horiz. angle     vert. angle      elev. chng.
               (ft2)            (ft)             (ft3)           (deg)            (deg)            (ft)
 109010000      100.000          10.0000          1000.00          0.00000          0.00000          0.00000
0  Vol.no.     roughness        hydraulic diam.  vol-flag
               (ft)             (ft)             tlpvbfe
 109010000     1.500000E-04      11.2838          0011000
0Tabular data
      time            pressure        temperature     equil.  qual.
      (sec)           (lb/in2)        (degF)


      0.00000         14.7000         70.0000        0.999000
      7.00000         14.7000         70.0000        0.999000
0Thermodynamic properties files used by this problem:

 Thermodynamic properties file for h2o      obtained from lfn tpfh2onew,
 tpfh2ogibb version 1.0, tables of thermodynamic properties of light wate
 generated on 25-Jun-02 at 13:04:18 by stgh2onew  1.0 (1/Mar/01)

0$$$$$$$$$ Found     0 level stacks
1         Reference volumes and positions for each loop and segment for each hydrodynamic system for z coordinate direction
0    jun. no.   junction     vol. no.   volume                jun. no.   junction     vol. no.   volume
                face pos.               cntr.pos.                        face pos.               cntr.pos.
                (ft)                    (ft)                             (ft)                    (ft)
 Reference volume of system    1 named    *none*  is 101010000 and has center position   0.00000     (ft).
                            101010000   0.00000              102000000   0.00000     103010001  0.447915
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

103010000	0.895830	103020001	1.34374	103020000	1.79166	103030001	2.23957
103030000	2.68749	103040001	3.13540	103040000	3.58332	103050001	3.58332
103050000	3.58332	103060001	3.58332	103060000	3.58332	103070001	3.58332
103070000	3.58332	103080001	3.17409	103080000	2.76487	103090001	2.35564
103090000	1.94642	103100001	1.53719	103100000	1.12797	103110001	0.718745
103110000	0.309520	103120001	-9.970500E-02	103120000	-0.508930	103130001	-0.918155
103130000	-1.32738	103140001	-1.73661	103140000	-2.14583	103150001	-2.14583
103150000	-2.14583	103160001	-2.14583	103160000	-2.14583	103170001	-2.14583
103170000	-2.14583	103180001	-2.14583	103180000	-2.14583	103190001	-2.14583
103190000	-2.14583	103200001	-2.14583	103200000	-2.14583	103210001	-2.14583
103210000	-2.14583	103220001	-2.14583	103220000	-2.14583	103230001	-2.14583
103230000	-2.14583	103240001	-2.14583	103240000	-2.14583	103250001	-2.14583
103250000	-2.14583	103260001	-2.14583	103260000	-2.14583	103270001	-2.14583
103270000	-2.14583	103280001	-2.54792	103280000	-2.95000	103290001	-3.35209
103290000	-3.75417	103300001	-4.15626	103300000	-4.55834	103310001	-4.96043
103310000	-5.36251	103320001	-5.76460	103320000	-6.16668	103330001	-6.16668
103330000	-6.16668	103340001	-6.16668	103340000	-6.16668	103350001	-6.16668
103350000	-6.16668	103360001	-6.16668	103360000	-6.16668	103370001	-6.16668
103370000	-6.16668	103380001	-6.16668	103380000	-6.16668	103390001	-6.16668
103390000	-6.16668	103400001	-6.16668	103400000	-6.16668	103410001	-6.16668
103410000	-6.16668	103420001	-6.16668	103420000	-6.16668	103430001	-6.16668
103430000	-6.16668	103440001	-6.16668	103440000	-6.16668	103450001	-6.16668
103450000	-6.16668	103460001	-6.16668	103460000	-6.16668	103470001	-6.16668
103470000	-6.16668	103480001	-6.63752	103480000	-7.10835	103490001	-7.57919
103490000	-8.05002	103500001	-8.52086	103500000	-8.99169	103510001	-9.46253
103510000	-9.93336	103520001	-10.4042	103520000	-10.8750	103530001	-11.3459
103530000	-11.8167	103540001	-12.2875	103540000	-12.7584	103550001	-13.2292
103550000	-13.7000	103560001	-14.1709	103560000	-14.6417	103570001	-15.1125
103570000	-15.5834	103580001	-16.0542	103580000	-16.5251	103590001	-16.9959
103590000	-17.4667	103600001	-17.9376	103600000	-18.4084	103610001	-18.8792
103610000	-19.3501	103620001	-19.8209	103620000	-20.2917	103630001	-20.7626
103630000	-21.2334	103640001	-21.7042	103640000	-22.1751	103650001	-22.6459
103650000	-23.1167	103660001	-23.5876	103660000	-24.0584	103670001	-24.5292
103670000	-25.0001	103680001	-25.0001	103680000	-25.0001	103690001	-25.0001
103690000	-25.0001	103700001	-25.0001	103700000	-25.0001	103710001	-25.0001
103710000	-25.0001	103720001	-25.0001	103720000	-25.0001	103730001	-25.0001
103730000	-25.0001	103740001	-25.0001	103740000	-25.0001	103750001	-25.0001
104000000	-25.0001	105010001	-25.0001	105010000	-25.0001	105020001	-25.0001
105020000	-25.0001	105030001	-25.0001	105030000	-25.0001	105040001	-25.0001
105040000	-25.0001	105050001	-25.0001	105050000	-25.0001	105060001	-25.0001
105060000	-25.0001	105070001	-25.0001	105070000	-25.0001	105080001	-25.0001
105080000	-25.0001	105090001	-25.0001	105090000	-25.0001	105100001	-25.0001
105100000	-25.0001	105110001	-25.0001	105110000	-25.0001	105120001	-25.0001
105120000	-25.0001	105130001	-25.0001	105130000	-25.0001	105140001	-25.0001
105140000	-25.0001	105150001	-25.0001	105150000	-25.0001	105160001	-25.0001
105160000	-25.0001	105170001	-25.0001	105170000	-25.0001	105180001	-25.0001
105180000	-25.0001	105190001	-25.0001	105190000	-25.0001	105200001	-25.0001
105200000	-25.0001	105210001	-25.0001	105210000	-25.0001	105220001	-25.0001

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105220000	-25.0001	105230001	-25.0001	105230000	-25.0001	105240001	-25.0001
105240000	-25.0001	105250001	-25.0001	105250000	-25.0001	105260001	-25.0001
105260000	-25.0001	105270001	-25.0001	105270000	-25.0001	105280001	-25.0001
105280000	-25.0001	105290001	-25.0001	105290000	-25.0001	105300001	-25.0001
105300000	-25.0001	105310001	-25.0001	105310000	-25.0001	105320001	-25.0001
105320000	-25.0001	105330001	-25.0001	105330000	-25.0001	105340001	-25.0001
105340000	-25.0001	105350001	-25.0001	105350000	-25.0001	105360001	-25.0001
105360000	-25.0001	105370001	-25.0001	105370000	-25.0001	105380001	-25.0001
105380000	-25.0001	105390001	-25.0001	105390000	-25.0001	105400001	-25.0001
105400000	-25.0001	105410001	-25.0001	105410000	-25.0001	105420001	-25.0001
105420000	-25.0001	105430001	-25.0001	105430000	-25.0001	105440001	-25.0001
105440000	-25.0001	105450001	-25.0001	105450000	-25.0001	105460001	-25.0001
105460000	-25.0001	105470001	-25.0001	105470000	-25.0001	105480001	-25.0001
105480000	-25.0001	105490001	-25.0001	105490000	-25.0001	105500001	-25.0001
105500000	-25.0001	105510001	-25.0001	105510000	-25.0001	105520001	-25.0001
105520000	-25.0001	105530001	-25.0001	105530000	-25.0001	105540001	-25.0001
105540000	-25.0001	105550001	-25.0001	105550000	-25.0001	105560001	-25.0001
105560000	-25.0001	105570001	-25.0001	105570000	-25.0001	105580001	-25.0001
105580000	-25.0001	105590001	-25.0001	105590000	-25.0001	105600001	-25.0001
105600000	-25.0001	105610001	-25.0001	105610000	-25.0001	105620001	-25.0001
105620000	-25.0001	105630001	-25.0001	105630000	-25.0001	105640001	-25.0001
105640000	-25.0001	105650001	-25.0001	105650000	-25.0001	105660001	-25.0001
105660000	-25.0001	105670001	-25.0001	105670000	-25.0001	105680001	-25.0001
105680000	-25.0001	105690001	-25.0001	105690000	-25.0001	105700001	-25.0001
105700000	-25.0001	105710001	-25.0001	105710000	-25.0001	105720001	-25.0001
105720000	-25.0001	105730001	-25.0001	105730000	-25.0001	105740001	-25.0001
105740000	-25.0001	105750001	-25.0001	105750000	-25.0001	105760001	-25.0001
105760000	-25.0001	105770001	-25.0001	105770000	-25.0001	105780001	-25.0001
105780000	-25.0001	105790001	-25.0001	105790000	-25.0001	105800001	-25.0001
105800000	-25.0001	105810001	-25.0001	105810000	-25.0001	105820001	-25.0001
105820000	-25.0001	105830001	-25.0001	105830000	-25.0001	105840001	-25.0001
105840000	-25.0001	105850001	-25.0001	105850000	-25.0001	105860001	-25.0001
105860000	-25.0001	105870001	-25.0001	105870000	-25.0001	105880001	-25.0001
105880000	-25.0001	105890001	-25.0001	105890000	-25.0001	105900001	-25.0001
105900000	-25.0001	105910001	-25.0001	105910000	-25.0001	105920001	-25.0001
106000000	-25.0001	107010001	-25.0001	107010000	-25.0001	107020001	-25.0001
107020000	-25.0001	107030001	-25.0001	107030000	-25.0001	107040001	-25.0001
107040000	-25.0001	107050001	-25.0001	107050000	-25.0001	107060001	-25.0001
107060000	-25.0001	107070001	-25.0001	107070000	-25.0001	107080001	-25.0001
107080000	-25.0001	107090001	-25.0001	107090000	-25.0001	107100001	-25.0001
107100000	-25.0001	107110001	-25.0001	107110000	-25.0001	107120001	-25.0001
107120000	-25.0001	107130001	-25.0001	107130000	-25.0001	107140001	-25.0001
107140000	-25.0001	107150001	-25.0001	107150000	-25.0001	107160001	-25.0001
107160000	-25.0001	107170001	-25.0001	107170000	-25.0001	107180001	-25.0001
107180000	-25.0001	107190001	-25.4098	107190000	-25.8195	107200001	-26.2292
107200000	-26.6390	107210001	-27.0487	107210000	-27.4584	107220001	-27.8681
107220000	-28.2778	107230001	-28.6876	107230000	-29.0973	107240001	-29.5070
107240000	-29.9167	107250001	-30.3264	107250000	-30.7362	107260001	-31.1459

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
  107260000  -31.5556     107270001  -31.9653             107270000  -32.3750     107280001  -32.7848
  107280000  -33.1945     107290001  -33.6042             107290000  -34.0139     107300001  -34.4236
  107300000  -34.8334     107310001  -35.2431             107310000  -35.6528     107320001  -36.0625
  107320000  -36.4722     107330001  -36.8820             107330000  -37.2917     107340001  -37.7014
  107340000  -38.1111     107350001  -38.5208             107350000  -38.9306     107360001  -39.3403
  107360000  -39.7500     107370001  -39.7500             107370000  -39.7500     107380001  -39.7500
  107380000  -39.7500     107390001  -39.7500             108000000  -39.7500     109010001  -39.7500
1==============================================================================
                              Edit of hydrodynamic components after input processing
0   Number of volumes =  208, number of junctions =  207.
0   total system mass =   16.478     lb, total system volume =   9.1955     ft3
0   Vol.no.  pressure     voidg         tempf         tempg      sat. temp.  noncond.   boron den.    uf          ug        vol-flag
            (lbf/in2)                   (degF)        (degF)       (degF)   vapor qual. (lb/ft3)   (Btu/lb)    (Btu/lb)    tlpvbfe
0System  1    *none*  mass =   16.478     lb    volume=   9.1955     ft3
 S/G      tmdpvol  component
 101-010000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0011000
 MISC     pipe     component
 103-010000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-020000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-030000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-040000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-050000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-060000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-070000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-080000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-090000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-100000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-110000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-120000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-130000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-140000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-150000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-160000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-170000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-180000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-190000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-200000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-210000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-220000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-230000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-240000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-250000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-260000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-270000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-280000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-290000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-300000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
 103-310000   813.00      0.99991       520.13         520.127     520.127       0.000   0.00       509.02       1114.8     0000000
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
103-320000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-330000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-340000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-350000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-360000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-370000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-380000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-390000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-400000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-410000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-420000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-430000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-440000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-450000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-460000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-470000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-480000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-490000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-500000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-510000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-520000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-530000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-540000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-550000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-560000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-570000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-580000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-590000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-600000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-610000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-620000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-630000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-640000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-650000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-660000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-670000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-680000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-690000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-700000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-710000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-720000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-730000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-740000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
103-750000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
3PIPE    pipe     component
105-010000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
105-020000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
105-030000   813.00     0.99991     520.13     520.127    520.127    0.000   0.00     509.02     1114.8     0000000
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105-040000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-050000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-060000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-070000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-080000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-090000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-100000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-110000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-120000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-130000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-140000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-150000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-160000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-170000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-180000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-190000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-200000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-210000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-220000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-230000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-240000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-250000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-260000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-270000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-280000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-290000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-300000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-310000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-320000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-330000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-340000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-350000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-360000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-370000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-380000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-390000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-400000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-410000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-420000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-430000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-440000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-450000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-460000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-470000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-480000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-490000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-500000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
105-510000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
105-520000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-530000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-540000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-550000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-560000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-570000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-580000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-590000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-600000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-610000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-620000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-630000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-640000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-650000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-660000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-670000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-680000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-690000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-700000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-710000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-720000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-730000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-740000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-750000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-760000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-770000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-780000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-790000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-800000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-810000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-820000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-830000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-840000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-850000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-860000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-870000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-880000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-890000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-900000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-910000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
105-920000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
1A       pipe      component
107-010000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
107-020000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
107-030000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
107-040000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
107-050000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
107-060000   813.00      0.99991      520.13       520.127      520.127      0.000    0.00      509.02      1114.8     0000000
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

107-070000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-080000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-090000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-100000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-110000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-120000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-130000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-140000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-150000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-160000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-170000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-180000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-190000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-200000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-210000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-220000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-230000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-240000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-250000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-260000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-270000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-280000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-290000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-300000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-310000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-320000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-330000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-340000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-350000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-360000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-370000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-380000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
107-390000	813.00	0.99991	520.13	520.127	520.127	0.000	0.00	509.02	1114.8	0000000
ATM	tmdpvol	component								
109-010000	14.700	1.0000	70.000	70.000	70.000	0.984	0.00	38.071	172.44	0011000

0:

Vol.no.	rhof (lb/ft3)	rhog (lb/ft3)	liq.v.vel. (ft/sec)	vap.v.vel. (ft/sec)	sounde (ft/sec)	static qual.	tot.ht.inp. (Btu/sec)	vap.ht.inp. (Btu/sec)	vapor gen. flow (lb/ft3-sec)	map
101-010000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-010000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-020000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-030000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-040000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-050000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-060000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-070000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-080000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-090000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-100000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

103-110000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-120000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-130000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-140000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-150000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-160000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-170000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-180000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-190000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-200000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-210000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-220000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-230000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-240000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-250000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-260000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-270000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-280000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-290000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-300000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-310000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-320000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-330000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-340000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-350000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-360000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-370000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-380000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-390000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-400000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-410000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-420000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-430000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-440000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-450000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-460000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-470000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-480000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-490000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-500000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-510000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-520000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-530000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-540000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-550000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-560000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-570000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-580000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

103-590000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-600000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-610000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-620000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-630000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-640000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-650000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-660000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-670000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
103-680000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-690000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-700000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-710000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-720000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-730000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-740000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
103-750000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-010000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-020000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-030000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-040000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-050000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-060000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-070000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-080000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-090000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-100000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-110000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-120000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-130000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-140000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-150000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-160000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-170000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-180000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-190000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-200000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-210000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-220000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-230000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-240000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-250000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-260000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-270000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-280000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-290000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-300000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-310000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105-320000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-330000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-340000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-350000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-360000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-370000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-380000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-390000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-400000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-410000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-420000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-430000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-440000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-450000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-460000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-470000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-480000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-490000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-500000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-510000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-520000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-530000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-540000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-550000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-560000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-570000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-580000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-590000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-600000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-610000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-620000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-630000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-640000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-650000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-660000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-670000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-680000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-690000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-700000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-710000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-720000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-730000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-740000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-750000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-760000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-770000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-780000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-790000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105-800000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-810000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-820000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-830000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-840000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-850000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-860000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-870000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-880000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-890000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-900000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-910000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
105-920000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-010000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-020000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-030000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-040000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-050000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-060000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-070000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-080000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-090000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-100000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-110000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-120000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-130000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-140000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-150000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-160000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-170000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-180000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	2
107-190000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-200000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-210000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-220000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-230000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-240000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-250000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-260000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-270000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-280000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-290000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-300000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-310000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-320000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-330000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-340000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1
107-350000	47.788	1.7876	0.0000	0.0000	1508.7	0.99750	0.0000	0.0000	0.0000	1

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

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 107-360000   47.788       1.7876       0.0000       0.0000       1508.7       0.99750       0.0000       0.0000       0.0000       1
 107-370000   47.788       1.7876       0.0000       0.0000       1508.7       0.99750       0.0000       0.0000       0.0000       2
 107-380000   47.788       1.7876       0.0000       0.0000       1508.7       0.99750       0.0000       0.0000       0.0000       2
 107-390000   47.788       1.7876       0.0000       0.0000       1508.7       0.99750       0.0000       0.0000       0.0000       2
 109-010000   62.301      7.42050E-02   0.0000       0.0000       986.94       0.99900       0.0000       0.0000       0.0000       2
0   Jun.no.   from vol.     to vol.  liq.j.vel.   vap.j.vel.   mass flow    jun.area     throat      jun-flag flow  no. advs.  choked
                                     (ft/sec)     (ft/sec)     (lb/sec)     (ft2)        ratio        efvcahs regi last  edit   total
0System  1    *none*
 LOSS     sngljun  component
 102-000000  101-010002  103-010001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 MISC     pipe     component
 103-010000  103-010002  103-020001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-020000  103-020002  103-030001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-030000  103-030002  103-040001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-040000  103-040002  103-050001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-050000  103-050002  103-060001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-060000  103-060002  103-070001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-070000  103-070002  103-080001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-080000  103-080002  103-090001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-090000  103-090002  103-100001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-100000  103-100002  103-110001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-110000  103-110002  103-120001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-120000  103-120002  103-130001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-130000  103-130002  103-140001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-140000  103-140002  103-150001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-150000  103-150002  103-160001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-160000  103-160002  103-170001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-170000  103-170002  103-180001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-180000  103-180002  103-190001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-190000  103-190002  103-200001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-200000  103-200002  103-210001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-210000  103-210002  103-220001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-220000  103-220002  103-230001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-230000  103-230002  103-240001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-240000  103-240002  103-250001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-250000  103-250002  103-260001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-260000  103-260002  103-270001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-270000  103-270002  103-280001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-280000  103-280002  103-290001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-290000  103-290002  103-300001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-300000  103-300002  103-310001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-310000  103-310002  103-320001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-320000  103-320002  103-330001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-330000  103-330002  103-340001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-340000  103-340002  103-350001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-350000  103-350002  103-360001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-360000  103-360002  103-370001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
 103-370000  103-370002  103-380001   0.0000       0.0000       0.0000      5.13000E-02   1.0000      0001000   x    0      0      0
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Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

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103-380000  103-380002  103-390001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-390000  103-390002  103-400001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-400000  103-400002  103-410001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-410000  103-410002  103-420001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-420000  103-420002  103-430001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-430000  103-430002  103-440001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-440000  103-440002  103-450001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-450000  103-450002  103-460001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-460000  103-460002  103-470001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-470000  103-470002  103-480001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-480000  103-480002  103-490001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-490000  103-490002  103-500001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-500000  103-500002  103-510001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-510000  103-510002  103-520001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-520000  103-520002  103-530001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-530000  103-530002  103-540001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-540000  103-540002  103-550001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-550000  103-550002  103-560001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-560000  103-560002  103-570001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-570000  103-570002  103-580001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-580000  103-580002  103-590001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-590000  103-590002  103-600001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-600000  103-600002  103-610001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-610000  103-610002  103-620001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-620000  103-620002  103-630001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-630000  103-630002  103-640001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-640000  103-640002  103-650001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-650000  103-650002  103-660001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-660000  103-660002  103-670001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-670000  103-670002  103-680001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-680000  103-680002  103-690001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-690000  103-690002  103-700001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-700000  103-700002  103-710001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-710000  103-710002  103-720001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-720000  103-720002  103-730001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-730000  103-730002  103-740001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
103-740000  103-740002  103-750001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
60DEG    sngljun  component
104-000000  103-750002  105-010001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
3PIPE    pipe     component
105-010000  105-010002  105-020001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-020000  105-020002  105-030001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-030000  105-030002  105-040001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-040000  105-040002  105-050001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-050000  105-050002  105-060001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-060000  105-060002  105-070001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-070000  105-070002  105-080001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-080000  105-080002  105-090001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
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Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105-090000	105-090002	105-100001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-100000	105-100002	105-110001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-110000	105-110002	105-120001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-120000	105-120002	105-130001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-130000	105-130002	105-140001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-140000	105-140002	105-150001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-150000	105-150002	105-160001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-160000	105-160002	105-170001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-170000	105-170002	105-180001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-180000	105-180002	105-190001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-190000	105-190002	105-200001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-200000	105-200002	105-210001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-210000	105-210002	105-220001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-220000	105-220002	105-230001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-230000	105-230002	105-240001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-240000	105-240002	105-250001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-250000	105-250002	105-260001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-260000	105-260002	105-270001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-270000	105-270002	105-280001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-280000	105-280002	105-290001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-290000	105-290002	105-300001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-300000	105-300002	105-310001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-310000	105-310002	105-320001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-320000	105-320002	105-330001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-330000	105-330002	105-340001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-340000	105-340002	105-350001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-350000	105-350002	105-360001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-360000	105-360002	105-370001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-370000	105-370002	105-380001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-380000	105-380002	105-390001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-390000	105-390002	105-400001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-400000	105-400002	105-410001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-410000	105-410002	105-420001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-420000	105-420002	105-430001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-430000	105-430002	105-440001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-440000	105-440002	105-450001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-450000	105-450002	105-460001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-460000	105-460002	105-470001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-470000	105-470002	105-480001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-480000	105-480002	105-490001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-490000	105-490002	105-500001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-500000	105-500002	105-510001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-510000	105-510002	105-520001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-520000	105-520002	105-530001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-530000	105-530002	105-540001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-540000	105-540002	105-550001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-550000	105-550002	105-560001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0
105-560000	105-560002	105-570001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	0001000	x	0	0	0

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

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105-570000  105-570002  105-580001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-580000  105-580002  105-590001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-590000  105-590002  105-600001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-600000  105-600002  105-610001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-610000  105-610002  105-620001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-620000  105-620002  105-630001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-630000  105-630002  105-640001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-640000  105-640002  105-650001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-650000  105-650002  105-660001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-660000  105-660002  105-670001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-670000  105-670002  105-680001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-680000  105-680002  105-690001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-690000  105-690002  105-700001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-700000  105-700002  105-710001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-710000  105-710002  105-720001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-720000  105-720002  105-730001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-730000  105-730002  105-740001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-740000  105-740002  105-750001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-750000  105-750002  105-760001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-760000  105-760002  105-770001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-770000  105-770002  105-780001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-780000  105-780002  105-790001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-790000  105-790002  105-800001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-800000  105-800002  105-810001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-810000  105-810002  105-820001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-820000  105-820002  105-830001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-830000  105-830002  105-840001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-840000  105-840002  105-850001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-850000  105-850002  105-860001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-860000  105-860002  105-870001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-870000  105-870002  105-880001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-880000  105-880002  105-890001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-890000  105-890002  105-900001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-900000  105-900002  105-910001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
105-910000  105-910002  105-920001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
ELBOW    sngljun  component
106-000000  105-920002  107-010001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
1A       pipe     component
107-010000  107-010002  107-020001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
107-020000  107-020002  107-030001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
107-030000  107-030002  107-040001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
107-040000  107-040002  107-050001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
107-050000  107-050002  107-060001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
107-060000  107-060002  107-070001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
107-070000  107-070002  107-080001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
107-080000  107-080002  107-090001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
107-090000  107-090002  107-100001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
107-100000  107-100002  107-110001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x   0   0   0
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Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
107-110000  107-110002  107-120001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-120000  107-120002  107-130001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-130000  107-130002  107-140001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-140000  107-140002  107-150001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-150000  107-150002  107-160001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-160000  107-160002  107-170001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-170000  107-170002  107-180001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-180000  107-180002  107-190001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-190000  107-190002  107-200001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-200000  107-200002  107-210001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-210000  107-210002  107-220001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-220000  107-220002  107-230001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-230000  107-230002  107-240001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-240000  107-240002  107-250001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-250000  107-250002  107-260001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-260000  107-260002  107-270001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-270000  107-270002  107-280001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-280000  107-280002  107-290001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-290000  107-290002  107-300001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-300000  107-300002  107-310001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-310000  107-310002  107-320001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-320000  107-320002  107-330001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-330000  107-330002  107-340001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-340000  107-340002  107-350001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-350000  107-350002  107-360001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-360000  107-360002  107-370001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-370000  107-370002  107-380001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
107-380000  107-380002  107-390001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0001000  x  0  0  0
1A       sngljun  component
108-000000  107-390002  109-010001  0.0000      0.0000      0.0000      5.13000E-02  1.0000      0000100  x  0  0  0
0  Jun.no.  voidfj       voidgj       fij         fwalfj      fwalgj      fjunft      fjunrt      formfj      formgj      no.  advs.  ccfl
                                      (lb-s2/ft5)                                                                          last edit  total
102-000000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
103-010000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
103-020000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
103-030000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
103-040000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
103-050000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
103-060000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
103-070000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
103-080000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
103-090000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
103-100000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
103-110000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
103-120000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
103-130000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
103-140000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
103-150000  9.37431E-05  0.99991      0.0000      0.00        0.00        0.00        0.00        0.00        0.00        0    0      0
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Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

103-160000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-170000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-180000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-190000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-200000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-210000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-220000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-230000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-240000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-250000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-260000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-270000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-280000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-290000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-300000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-310000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-320000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-330000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-340000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-350000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-360000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-370000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-380000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-390000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-400000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-410000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-420000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-430000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-440000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-450000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-460000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-470000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-480000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-490000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-500000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-510000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-520000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-530000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-540000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-550000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-560000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-570000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-580000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-590000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-600000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-610000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-620000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-630000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

103-640000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-650000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-660000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-670000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-680000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-690000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-700000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-710000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-720000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-730000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
103-740000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
104-000000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-010000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-020000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-030000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-040000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-050000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-060000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-070000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-080000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-090000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-100000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-110000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-120000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-130000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-140000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-150000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-160000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-170000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-180000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-190000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-200000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-210000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-220000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-230000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-240000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-250000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-260000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-270000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-280000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-290000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-300000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-310000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-320000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-330000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-340000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-350000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-360000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105-370000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-380000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-390000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-400000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-410000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-420000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-430000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-440000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-450000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-460000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-470000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-480000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-490000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-500000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-510000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-520000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-530000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-540000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-550000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-560000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-570000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-580000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-590000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-600000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-610000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-620000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-630000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-640000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-650000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-660000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-670000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-680000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-690000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-700000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-710000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-720000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-730000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-740000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-750000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-760000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-770000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-780000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-790000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-800000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-810000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-820000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-830000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
105-840000	9.37431E-05	0.99991	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

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105-850000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
105-860000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
105-870000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
105-880000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
105-890000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
105-900000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
105-910000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
106-000000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-010000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-020000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-030000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-040000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-050000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-060000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-070000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-080000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-090000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-100000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-110000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-120000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-130000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-140000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-150000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-160000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-170000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-180000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-190000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-200000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-210000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-220000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-230000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-240000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-250000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-260000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-270000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-280000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-290000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-300000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-310000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-320000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-330000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-340000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-350000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-360000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-370000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
107-380000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
108-000000  9.37431E-05  0.99991   0.0000   0.00   0.00   0.00   0.00   0.00   0.00   0   0   0
0$$$$$$$$ Input processing completed successfully.
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 gerr= 1.000000000000000E-12
0                              List of dynamic storage information for transient calculation
0 num.    filid  file index   name       file size
   2        3.           2 tstpct.h           29
  12       -4.          31 miedtc.h            4
  28        5.          35 sysdatc.h           1
   5        8.          36 jundat.h        30016
   4        7.       30052 voldat.h        71761
   3        6.      101813 cmpdat.h          278
  30        9.      102091 lpdat.h            48
  10       11.      102139 invtbl.h         2693
  43       12.      104832                     1
  20       13.      104833 statc.h          5411
  14       14.      110244 htsttab.h         209
  16       15.      110453 miedtc.h          119
   6      -10.      110572 stcom.h       1053039
  13      -16.     1163611 tdpptr.h            3
  35      -17.     1163614 lvectr.h         1281
  40       18.     1164895 Sparmat.h        2807
   1      -19.     1167702 scrtch.h        60837
1 RELAP5/3.3            Reactor Loss Of Coolant Analysis Program
 Copyright (C) 2001  Information Systems Laboratories, Inc.
  POINT BEACH HELB                                                    29-Aug-08    19:48:05
0MAJOR EDIT !!!time=    0.00000     sec
0 advancement      total  between edits|
  attempted:          0            0   |  min.dt=    0.00000     sec   last dt=   1.000000E-07 sec    emass=    0.00000     lb
  repeated:           0            0   |  max.dt=    0.00000     sec   crnt.dt=    0.00000     sec    tmass=    16.4776     lb
 successful:          0            0   |  avg.dt=    0.00000     sec  merr.est=    0.00000            em/tm=    0.00000
  requested:          1            1   |  req.dt=   1.000000E-02 sec       cpu=   0.171875     sec     time=    0.00000     sec
0System  1    *none*  mass=   16.478     lb    mass error =   0.0000     lb   merr.est.=   0.0000
0   Vol.no.  pressure      voidf        voidg        voidgo        tempf      tempg     satt-part   uf           ug        vol-flag
            (psia)                                                (degF)     (degF)     (degF)    (Btu/lb)     (Btu/lb)    tlpvbfe
 S/G      tmdpvol
 101-010000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0011000
 MISC     pipe
 103-010000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 103-020000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 103-030000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 103-040000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 103-050000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 103-060000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 103-070000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 103-080000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 103-090000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 103-100000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 103-110000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 103-120000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

103-130000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-140000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-150000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-160000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-170000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-180000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-190000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-200000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-210000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-220000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-230000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-240000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-250000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-260000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-270000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-280000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-290000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-300000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-310000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-320000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-330000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-340000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-350000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-360000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-370000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-380000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-390000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-400000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-410000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-420000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-430000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-440000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-450000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-460000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-470000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-480000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-490000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-500000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-510000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-520000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-530000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-540000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-550000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-560000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-570000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-580000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-590000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
103-600000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 103-610000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 103-620000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 103-630000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 103-640000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 103-650000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 103-660000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 103-670000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 103-680000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 103-690000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 103-700000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 103-710000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 103-720000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 103-730000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 103-740000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 103-750000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
0  Vol.no.   pressure      voidf        voidg        voidgo       tempf      tempg      satt-part  uf          ug         vol-flag
             (psia)                                               (degF)     (degF)     (degF)     (Btu/lb)    (Btu/lb)   tlpvbfe
 3PIPE    pipe
 105-010000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-020000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-030000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-040000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-050000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-060000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-070000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-080000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-090000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-100000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-110000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-120000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-130000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-140000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-150000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-160000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-170000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-180000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-190000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-200000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-210000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-220000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-230000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-240000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-250000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-260000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-270000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-280000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-290000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
 105-300000   813.00      9.37431E-05  0.99991      0.99991      520.127    520.127    520.127    509.02      1114.8     0000000
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105-310000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-320000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-330000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-340000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-350000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-360000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-370000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-380000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-390000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-400000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-410000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-420000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-430000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-440000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-450000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-460000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-470000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-480000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-490000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-500000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-510000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-520000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-530000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-540000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-550000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-560000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-570000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-580000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-590000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-600000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-610000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-620000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-630000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-640000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-650000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-660000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-670000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-680000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-690000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-700000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-710000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-720000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-730000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-740000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-750000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-760000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-770000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000
105-780000	813.00	9.37431E-05	0.99991	0.99991	520.127	520.127	520.127	509.02	1114.8	0000000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
105-790000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
105-800000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
105-810000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
105-820000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
105-830000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
105-840000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
105-850000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
105-860000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
105-870000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
105-880000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
105-890000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
105-900000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
105-910000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
105-920000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
0  Vol.no.   pressure     voidf        voidg        voidgo       tempf        tempg        satt-part    uf           ug           vol-flag
             (psia)                                              (degF)       (degF)       (degF)       (Btu/lb)     (Btu/lb)     tlpvbfe
1A       pipe
107-010000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-020000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-030000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-040000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-050000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-060000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-070000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-080000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-090000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-100000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-110000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-120000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-130000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-140000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-150000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-160000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-170000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-180000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-190000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-200000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-210000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-220000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-230000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-240000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-250000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-260000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-270000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-280000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-290000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-300000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
107-310000   813.00      9.37431E-05  0.99991      0.99991      520.127      520.127      520.127      509.02       1114.8       0000000
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 107-320000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 107-330000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 107-340000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 107-350000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 107-360000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 107-370000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 107-380000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 107-390000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02       1114.8     0000000
 ATM      tmdpvol
 109-010000   14.700      1.19226E-06   1.0000       1.0000        70.000     70.000     70.000   38.071       172.44     0011000
0System  1    *none*
0   Jun.no.   from vol.     to vol.   liq.j.vel.   vap.j.vel.   mass flow   jun.area    throat     jun-flag  flow no. advs. choked
                                      (ft/sec)     (ft/sec)     (lb/sec)    (ft2)       ratio      jefvcahs  regi last edit  total
 LOSS     sngljun
 102-000000  101-010002  103-010001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 MISC     pipe
 103-010000  103-010002  103-020001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-020000  103-020002  103-030001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-030000  103-030002  103-040001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-040000  103-040002  103-050001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-050000  103-050002  103-060001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-060000  103-060002  103-070001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-070000  103-070002  103-080001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-080000  103-080002  103-090001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-090000  103-090002  103-100001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-100000  103-100002  103-110001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-110000  103-110002  103-120001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-120000  103-120002  103-130001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-130000  103-130002  103-140001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-140000  103-140002  103-150001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-150000  103-150002  103-160001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-160000  103-160002  103-170001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-170000  103-170002  103-180001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-180000  103-180002  103-190001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-190000  103-190002  103-200001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-200000  103-200002  103-210001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-210000  103-210002  103-220001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-220000  103-220002  103-230001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-230000  103-230002  103-240001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-240000  103-240002  103-250001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-250000  103-250002  103-260001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-260000  103-260002  103-270001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-270000  103-270002  103-280001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-280000  103-280002  103-290001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-290000  103-290002  103-300001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-300000  103-300002  103-310001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-310000  103-310002  103-320001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
 103-320000  103-320002  103-330001   0.0000       0.0000       0.0000      5.13000E-02  1.0000     00001000  x    0    0      0
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 103-330000  103-330002  103-340001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-340000  103-340002  103-350001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-350000  103-350002  103-360001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-360000  103-360002  103-370001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-370000  103-370002  103-380001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-380000  103-380002  103-390001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-390000  103-390002  103-400001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-400000  103-400002  103-410001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-410000  103-410002  103-420001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-420000  103-420002  103-430001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-430000  103-430002  103-440001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-440000  103-440002  103-450001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-450000  103-450002  103-460001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-460000  103-460002  103-470001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-470000  103-470002  103-480001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-480000  103-480002  103-490001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-490000  103-490002  103-500001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-500000  103-500002  103-510001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-510000  103-510002  103-520001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-520000  103-520002  103-530001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-530000  103-530002  103-540001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-540000  103-540002  103-550001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-550000  103-550002  103-560001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-560000  103-560002  103-570001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-570000  103-570002  103-580001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-580000  103-580002  103-590001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-590000  103-590002  103-600001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-600000  103-600002  103-610001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-610000  103-610002  103-620001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-620000  103-620002  103-630001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-630000  103-630002  103-640001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-640000  103-640002  103-650001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-650000  103-650002  103-660001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-660000  103-660002  103-670001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-670000  103-670002  103-680001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-680000  103-680002  103-690001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-690000  103-690002  103-700001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-700000  103-700002  103-710001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-710000  103-710002  103-720001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-720000  103-720002  103-730001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-730000  103-730002  103-740001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 103-740000  103-740002  103-750001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
0   Jun.no.   from vol.     to vol.  liq.j.vel.  vap.j.vel.  mass flow   jun.area     throat     jun-flag  flow no. advs. choked
                                     (ft/sec)    (ft/sec)    (lb/sec)    (ft2)        ratio      jefvcahs  regi last edit  total
 60DEG    sngljun
 104-000000  103-750002  105-010001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 3PIPE    pipe
 105-010000  105-010002  105-020001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105-020000	105-020002	105-030001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-030000	105-030002	105-040001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-040000	105-040002	105-050001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-050000	105-050002	105-060001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-060000	105-060002	105-070001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-070000	105-070002	105-080001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-080000	105-080002	105-090001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-090000	105-090002	105-100001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-100000	105-100002	105-110001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-110000	105-110002	105-120001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-120000	105-120002	105-130001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-130000	105-130002	105-140001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-140000	105-140002	105-150001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-150000	105-150002	105-160001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-160000	105-160002	105-170001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-170000	105-170002	105-180001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-180000	105-180002	105-190001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-190000	105-190002	105-200001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-200000	105-200002	105-210001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-210000	105-210002	105-220001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-220000	105-220002	105-230001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-230000	105-230002	105-240001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-240000	105-240002	105-250001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-250000	105-250002	105-260001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-260000	105-260002	105-270001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-270000	105-270002	105-280001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-280000	105-280002	105-290001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-290000	105-290002	105-300001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-300000	105-300002	105-310001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-310000	105-310002	105-320001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-320000	105-320002	105-330001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-330000	105-330002	105-340001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-340000	105-340002	105-350001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-350000	105-350002	105-360001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-360000	105-360002	105-370001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-370000	105-370002	105-380001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-380000	105-380002	105-390001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-390000	105-390002	105-400001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-400000	105-400002	105-410001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-410000	105-410002	105-420001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-420000	105-420002	105-430001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-430000	105-430002	105-440001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-440000	105-440002	105-450001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-450000	105-450002	105-460001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-460000	105-460002	105-470001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-470000	105-470002	105-480001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-480000	105-480002	105-490001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0
105-490000	105-490002	105-500001	0.0000	0.0000	0.0000	5.13000E-02	1.0000	00001000	x	0	0	0

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 105-500000  105-500002  105-510001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-510000  105-510002  105-520001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-520000  105-520002  105-530001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-530000  105-530002  105-540001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-540000  105-540002  105-550001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-550000  105-550002  105-560001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-560000  105-560002  105-570001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-570000  105-570002  105-580001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-580000  105-580002  105-590001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-590000  105-590002  105-600001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-600000  105-600002  105-610001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-610000  105-610002  105-620001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-620000  105-620002  105-630001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-630000  105-630002  105-640001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-640000  105-640002  105-650001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-650000  105-650002  105-660001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-660000  105-660002  105-670001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-670000  105-670002  105-680001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-680000  105-680002  105-690001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-690000  105-690002  105-700001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-700000  105-700002  105-710001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-710000  105-710002  105-720001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-720000  105-720002  105-730001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-730000  105-730002  105-740001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-740000  105-740002  105-750001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-750000  105-750002  105-760001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-760000  105-760002  105-770001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-770000  105-770002  105-780001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-780000  105-780002  105-790001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-790000  105-790002  105-800001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-800000  105-800002  105-810001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-810000  105-810002  105-820001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-820000  105-820002  105-830001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-830000  105-830002  105-840001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-840000  105-840002  105-850001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-850000  105-850002  105-860001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-860000  105-860002  105-870001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-870000  105-870002  105-880001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-880000  105-880002  105-890001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-890000  105-890002  105-900001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-900000  105-900002  105-910001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 105-910000  105-910002  105-920001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
0   Jun.no.    from vol.     to vol.  liq.j.vel.  vap.j.vel.  mass flow   jun.area     throat     jun-flag  flow no. advs. choked
                                      (ft/sec)    (ft/sec)    (lb/sec)    (ft2)        ratio      jefvcahs  regi last edit  total
 ELBOW     sngljun
 106-000000  105-920002  107-010001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
 1A        pipe
 107-010000  107-010002  107-020001  0.0000      0.0000      0.0000      5.13000E-02  1.0000     00001000  x    0     0     0
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 107-020000  107-020002  107-030001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-030000  107-030002  107-040001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-040000  107-040002  107-050001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-050000  107-050002  107-060001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-060000  107-060002  107-070001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-070000  107-070002  107-080001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-080000  107-080002  107-090001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-090000  107-090002  107-100001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-100000  107-100002  107-110001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-110000  107-110002  107-120001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-120000  107-120002  107-130001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-130000  107-130002  107-140001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-140000  107-140002  107-150001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-150000  107-150002  107-160001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-160000  107-160002  107-170001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-170000  107-170002  107-180001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-180000  107-180002  107-190001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-190000  107-190002  107-200001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-200000  107-200002  107-210001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-210000  107-210002  107-220001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-220000  107-220002  107-230001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-230000  107-230002  107-240001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-240000  107-240002  107-250001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-250000  107-250002  107-260001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-260000  107-260002  107-270001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-270000  107-270002  107-280001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-280000  107-280002  107-290001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-290000  107-290002  107-300001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-300000  107-300002  107-310001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-310000  107-310002  107-320001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-320000  107-320002  107-330001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-330000  107-330002  107-340001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-340000  107-340002  107-350001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-350000  107-350002  107-360001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-360000  107-360002  107-370001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-370000  107-370002  107-380001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 107-380000  107-380002  107-390001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00001000  x   0     0     0
 1A       sngljun
 108-000000  107-390002  109-010001  0.0000      0.0000      0.0000      5.13000E-02  1.0000    00000100  x   0     0     0
0---Restart no.       0 written, block no.     0, at time=     0.00000    ---
0Number of elements in sparse matrix 1: original =  621, factored =  621     roundoff error =     1.000000E-12     ncount =      1
1 time        mflowj
 (sec)         108000000
               (lb/sec)

  0.00000       0.0000
 0.100353       34.704
 0.200403       30.109
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 0.300291        30.596
 0.400044        30.454
 0.500397        30.304
 0.600438        30.165
 0.700363        30.140
 0.800280        30.132
 0.900194        30.128
  1.00011        30.127
  1.10002        30.126
  1.20051        30.126
  1.30042        30.126
  1.40033        30.126
  1.50024        30.126
  1.60015        30.126
  1.70006        30.126
  1.80055        30.126
  1.90046        30.126
  2.00037        30.126
  2.10028        30.126
  2.20019        30.126
  2.30010        30.126
  2.40001        30.126
  2.50050        30.126
  2.60041        30.126
  2.70032        30.126
  2.80023        30.126
  2.90014        30.126
  3.00005        30.126
  3.10054        30.126
  3.20045        30.126
  3.30036        30.126
  3.40028        30.126
  3.50019        30.126
  3.60010        30.126
  3.70001        30.126
  3.80050        30.126
  3.90041        30.126
  4.00032        30.126
  4.10023        30.126
  4.20014        30.126
  4.30005        30.126
  4.40054        30.126
  4.50045        30.126
  4.60036        30.126
  4.70027        30.126
  4.80018        30.126
  4.90009        30.126
1 RELAP5/3.3            Reactor Loss Of Coolant Analysis Program
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 Copyright (C) 2001  Information Systems Laboratories, Inc.
  POINT BEACH HELB                                                    29-Aug-08    19:48:05
0MAJOR EDIT !!!time=    7.00053     sec
0 advancement      total  between edits|
 |attempted:      12119        12119   |  min.dt=   1.100000E-07 sec   last dt=   5.808730E-04 sec    emass=   3.558511E-04 lb
  repeated:          0            0   |  max.dt=   6.607666E-04 sec   crnt.dt=   5.808730E-04 sec    tmass=    11.2177     lb
 successful:      12119        12119   |  avg.dt=   5.776488E-04 sec  merr.est=   2.255795E-14        em/tm=   3.172227E-05
  requested:      12120        12119   |  req.dt=   1.000000E-02 sec       cpu=    215.109     sec     time=    7.00053     sec
0System  1    *none*  mass=   11.218     lb    mass error =  3.55851E-04 lb   merr.est.=  2.25580E-14
0:   Vol.no.  pressure      voidf        voidg        voidgo        tempf      tempg     satt-part   uf          ug        vol-flag
             (psia)                                               (degF)     (degF)     (degF)   (Btu/lb)    (Btu/lb)    tlpvbfe
 S/G      tmdpvol
 101-010000   813.00      9.37431E-05  0.99991      0.99991       520.127    520.127    520.127   509.02      1114.8     0011000
 MISC     pipe
 103-010000   769.44      1.68105E-04  0.99983      0.99983       514.724    510.283    513.804   502.64      1112.6     0000000
 103-020000   766.60      2.25016E-04  0.99977      0.99977       513.715    510.709    513.382   501.43      1113.4     0000000
 103-030000   765.07      2.46215E-04  0.99975      0.99975       513.480    510.869    513.155   501.16      1113.8     0000000
 103-040000   763.62      2.83559E-04  0.99972      0.99972       513.141    511.106    512.938   500.75      1114.2     0000000
 103-050000   758.55      3.27690E-04  0.99967      0.99967       512.465    510.508    512.180   499.96      1114.4     0000000
 103-060000   757.32      3.45416E-04  0.99965      0.99965       512.167    510.633    511.996   499.60      1114.7     0000000
 103-070000   756.23      3.72867E-04  0.99963      0.99963       511.959    510.654    511.832   499.36      1114.9     0000000
 103-080000   751.21      3.64620E-04  0.99964      0.99964       511.381    509.701    511.076   498.68      1114.8     0000000
 103-090000   749.73      3.69726E-04  0.99963      0.99963       511.060    509.624    510.853   498.30      1115.0     0000000
 103-100000   748.40      3.71789E-04  0.99963      0.99963       510.936    509.473    510.651   498.16      1115.1     0000000
 103-110000   747.08      3.73545E-04  0.99963      0.99963       510.800    509.310    510.451   498.00      1115.1     0000000
 103-120000   745.76      3.76484E-04  0.99962      0.99962       510.647    509.141    510.250   497.82      1115.2     0000000
 103-130000   744.43      3.74335E-04  0.99963      0.99963       510.483    508.965    510.049   497.63      1115.2     0000000
 103-140000   743.11      3.91976E-04  0.99961      0.99961       510.298    508.789    509.847   497.41      1115.3     0000000
 103-150000   737.84      4.07874E-04  0.99959      0.99959       509.415    507.788    509.043   496.37      1115.2     0000000
 103-160000   736.27      4.17287E-04  0.99958      0.99958       508.999    507.704    508.803   495.88      1115.4     0000000
 103-170000   734.84      4.23498E-04  0.99958      0.99958       508.721    507.594    508.583   495.55      1115.5     0000000
 103-180000   733.41      4.27975E-04  0.99957      0.99957       508.484    507.451    508.363   495.27      1115.6     0000000
 103-190000   731.98      4.31414E-04  0.99957      0.99957       508.260    507.286    508.144   495.01      1115.7     0000000
 103-200000   730.55      4.34181E-04  0.99957      0.99957       508.038    507.107    507.923   494.75      1115.7     0000000
 103-210000   729.12      4.36491E-04  0.99956      0.99956       507.817    506.918    507.702   494.49      1115.8     0000000
 103-220000   727.68      4.38438E-04  0.99956      0.99956       507.595    506.721    507.480   494.23      1115.8     0000000
 103-230000   726.24      4.40169E-04  0.99956      0.99956       507.379    506.516    507.257   493.98      1115.9     0000000
 103-240000   724.80      4.40999E-04  0.99956      0.99956       507.168    506.304    507.033   493.73      1115.9     0000000
 103-250000   723.36      4.44222E-04  0.99956      0.99956       506.941    506.091    506.809   493.47      1115.9     0000000
 103-260000   721.91      4.36752E-04  0.99956      0.99956       506.780    505.856    506.583   493.28      1116.0     0000000
 103-270000   720.46      4.69705E-04  0.99953      0.99953       506.498    505.645    506.358   492.95      1116.0     0000000
 103-280000   715.04      4.53605E-04  0.99955      0.99955       505.874    504.405    505.510   492.23      1115.8     0000000
 103-290000   713.49      4.53424E-04  0.99955      0.99955       505.541    504.230    505.267   491.83      1115.8     0000000
 103-300000   712.10      4.54346E-04  0.99955      0.99955       505.387    504.041    505.049   491.66      1115.9     0000000
 103-310000   710.73      4.50530E-04  0.99955      0.99955       505.253    503.838    504.833   491.50      1115.9     0000000
 103-320000   709.36      4.68580E-04  0.99953      0.99953       504.990    503.659    504.616   491.19      1116.0     0000000
 103-330000   703.83      4.78722E-04  0.99952      0.99952       504.155    502.524    503.742   490.22      1115.9     0000000
 103-340000   702.14      4.84908E-04  0.99952      0.99952       503.708    502.403    503.474   489.69      1116.0     0000000
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Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

103-350000	700.61	4.88686E-04	0.99951	0.99951	503.410	502.259	503.230	489.34	1116.1	0000000
103-360000	699.09	4.90745E-04	0.99951	0.99951	503.183	502.070	502.987	489.08	1116.2	0000000
103-370000	697.56	4.91993E-04	0.99951	0.99951	502.977	501.857	502.743	488.84	1116.2	0000000
103-380000	696.03	4.92811E-04	0.99951	0.99951	502.779	501.630	502.499	488.61	1116.3	0000000
103-390000	694.50	4.93386E-04	0.99951	0.99951	502.583	501.393	502.253	488.38	1116.3	0000000
103-400000	692.96	4.93807E-04	0.99951	0.99951	502.387	501.150	502.007	488.16	1116.3	0000000
103-410000	691.43	4.94159E-04	0.99951	0.99951	502.190	500.902	501.760	487.93	1116.4	0000000
103-420000	689.88	4.94390E-04	0.99951	0.99951	501.990	500.651	501.511	487.70	1116.4	0000000
103-430000	688.34	4.94944E-04	0.99951	0.99951	501.776	500.399	501.262	487.45	1116.4	0000000
103-440000	686.79	4.94470E-04	0.99951	0.99951	501.552	500.147	501.012	487.19	1116.4	0000000
103-450000	685.24	4.97915E-04	0.99950	0.99950	501.321	499.894	500.760	486.92	1116.5	0000000
103-460000	683.68	4.87063E-04	0.99951	0.99951	501.084	499.639	500.508	486.64	1116.5	0000000
103-470000	682.12	5.29203E-04	0.99947	0.99947	500.547	499.437	500.254	486.01	1116.6	0000000
103-480000	676.26	5.15147E-04	0.99948	0.99948	499.726	498.143	499.298	485.06	1116.4	0000000
103-490000	674.34	5.15721E-04	0.99948	0.99948	499.329	497.926	498.984	484.60	1116.5	0000000
103-500000	672.61	5.15957E-04	0.99948	0.99948	499.142	497.680	498.700	484.38	1116.5	0000000
103-510000	670.89	5.16121E-04	0.99948	0.99948	498.962	497.420	498.417	484.18	1116.6	0000000
103-520000	669.17	5.16471E-04	0.99948	0.99948	498.758	497.154	498.134	483.94	1116.6	0000000
103-530000	667.44	5.16910E-04	0.99948	0.99948	498.534	496.885	497.849	483.69	1116.7	0000000
103-540000	665.72	5.17386E-04	0.99948	0.99948	498.295	496.611	497.563	483.41	1116.7	0000000
103-550000	663.98	5.17873E-04	0.99948	0.99948	498.044	496.333	497.275	483.12	1116.7	0000000
103-560000	662.24	5.18355E-04	0.99948	0.99948	497.784	496.053	496.986	482.82	1116.8	0000000
103-570000	660.50	5.18824E-04	0.99948	0.99948	497.518	495.769	496.696	482.51	1116.8	0000000
103-580000	658.75	5.19277E-04	0.99948	0.99948	497.245	495.483	496.404	482.20	1116.8	0000000
103-590000	656.99	5.19711E-04	0.99948	0.99948	496.968	495.194	496.111	481.87	1116.9	0000000
103-600000	655.23	5.20122E-04	0.99948	0.99948	496.687	494.903	495.816	481.55	1116.9	0000000
103-610000	653.46	5.20522E-04	0.99948	0.99948	496.402	494.610	495.519	481.22	1116.9	0000000
103-620000	651.69	5.20864E-04	0.99948	0.99948	496.115	494.314	495.221	480.89	1117.0	0000000
103-630000	649.91	5.21326E-04	0.99948	0.99948	495.825	494.017	494.922	480.55	1117.0	0000000
103-640000	648.13	5.21238E-04	0.99948	0.99948	495.533	493.717	494.621	480.22	1117.0	0000000
103-650000	646.34	5.23128E-04	0.99948	0.99948	495.238	493.416	494.318	479.88	1117.0	0000000
103-660000	644.55	5.17369E-04	0.99948	0.99948	494.943	493.112	494.013	479.53	1117.1	0000000
103-670000	642.75	5.39510E-04	0.99946	0.99946	494.597	492.813	493.707	479.13	1117.1	0000000
103-680000	636.47	5.48320E-04	0.99945	0.99945	493.347	491.398	492.636	477.69	1116.9	0000000
103-690000	634.52	5.53159E-04	0.99945	0.99945	492.695	491.226	492.302	476.93	1117.1	0000000
103-700000	632.78	5.55855E-04	0.99944	0.99944	492.266	491.044	492.002	476.43	1117.2	0000000
103-710000	631.05	5.57325E-04	0.99944	0.99944	491.949	490.815	491.704	476.06	1117.3	0000000
103-720000	629.32	5.57046E-04	0.99944	0.99944	491.688	490.552	491.405	475.76	1117.3	0000000
103-730000	627.59	5.59843E-04	0.99944	0.99944	491.411	490.279	491.105	475.45	1117.4	0000000
103-740000	625.85	5.49462E-04	0.99945	0.99945	491.270	489.967	490.803	475.29	1117.4	0000000
103-750000	624.11	5.85479E-04	0.99941	0.99941	490.791	489.712	490.501	474.73	1117.4	0000000
0 Vol.no.	pressure (psia)	voidf	voidg	voidgo	tempf (degF)	tempg (degF)	satt-part (degF)	uf (Btu/lb)	ug (Btu/lb)	vol-flag tlpvbfe
3PIPE pipe										
105-010000	618.73	5.84674E-04	0.99942	0.99942	490.015	488.454	489.562	473.84	1117.2	0000000
105-020000	616.73	5.84049E-04	0.99942	0.99942	489.515	488.220	489.211	473.27	1117.4	0000000
105-030000	614.90	5.83377E-04	0.99942	0.99942	489.129	487.990	488.890	472.82	1117.5	0000000
105-040000	613.08	5.82747E-04	0.99942	0.99942	488.784	487.734	488.569	472.42	1117.5	0000000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105-050000	611.26	5.82173E-04	0.99942	0.99942	488.455	487.459	488.248	472.05	1117.6	0000000
105-060000	609.43	5.81649E-04	0.99942	0.99942	488.130	487.170	487.924	471.67	1117.6	0000000
105-070000	607.60	5.80934E-04	0.99942	0.99942	487.832	486.865	487.600	471.33	1117.7	0000000
105-080000	605.77	5.80089E-04	0.99942	0.99942	487.550	486.546	487.274	471.01	1117.7	0000000
105-090000	603.93	5.79195E-04	0.99942	0.99942	487.272	486.220	486.945	470.69	1117.7	0000000
105-100000	602.08	5.78293E-04	0.99942	0.99942	486.994	485.887	486.616	470.37	1117.7	0000000
105-110000	600.23	5.77405E-04	0.99942	0.99942	486.715	485.549	486.284	470.05	1117.8	0000000
105-120000	598.37	5.76541E-04	0.99942	0.99942	486.432	485.209	485.950	469.73	1117.8	0000000
105-130000	596.50	5.75709E-04	0.99942	0.99942	486.144	484.865	485.614	469.40	1117.8	0000000
105-140000	594.63	5.74910E-04	0.99943	0.99943	485.850	484.519	485.277	469.07	1117.8	0000000
105-150000	592.75	5.74145E-04	0.99943	0.99943	485.551	484.171	484.937	468.73	1117.8	0000000
105-160000	590.86	5.73414E-04	0.99943	0.99943	485.245	483.821	484.595	468.38	1117.8	0000000
105-170000	588.97	5.72714E-04	0.99943	0.99943	484.932	483.469	484.251	468.02	1117.9	0000000
105-180000	587.07	5.72045E-04	0.99943	0.99943	484.613	483.116	483.904	467.65	1117.9	0000000
105-190000	585.16	5.71404E-04	0.99943	0.99943	484.287	482.761	483.556	467.28	1117.9	0000000
105-200000	583.24	5.70787E-04	0.99943	0.99943	483.954	482.405	483.205	466.90	1117.9	0000000
105-210000	581.32	5.70193E-04	0.99943	0.99943	483.615	482.048	482.852	466.52	1117.9	0000000
105-220000	579.39	5.69618E-04	0.99943	0.99943	483.270	481.688	482.497	466.12	1117.9	0000000
105-230000	577.45	5.69060E-04	0.99943	0.99943	482.919	481.327	482.139	465.72	1118.0	0000000
105-240000	575.50	5.68514E-04	0.99943	0.99943	482.562	480.965	481.779	465.31	1118.0	0000000
105-250000	573.54	5.67979E-04	0.99943	0.99943	482.200	480.600	481.416	464.90	1118.0	0000000
105-260000	571.58	5.67452E-04	0.99943	0.99943	481.834	480.234	481.051	464.48	1118.0	0000000
105-270000	569.61	5.66929E-04	0.99943	0.99943	481.462	479.866	480.683	464.06	1118.0	0000000
105-280000	567.63	5.66409E-04	0.99943	0.99943	481.087	479.496	480.313	463.63	1118.0	0000000
105-290000	565.64	5.65889E-04	0.99943	0.99943	480.707	479.123	479.941	463.20	1118.1	0000000
105-300000	563.64	5.65366E-04	0.99943	0.99943	480.323	478.749	479.565	462.76	1118.1	0000000
105-310000	561.63	5.64840E-04	0.99944	0.99944	479.936	478.372	479.187	462.32	1118.1	0000000
105-320000	559.62	5.64308E-04	0.99944	0.99944	479.545	477.993	478.807	461.87	1118.1	0000000
105-330000	557.59	5.63768E-04	0.99944	0.99944	479.151	477.611	478.423	461.43	1118.1	0000000
105-340000	555.56	5.63219E-04	0.99944	0.99944	478.753	477.227	478.037	460.97	1118.2	0000000
105-350000	553.52	5.62661E-04	0.99944	0.99944	478.352	476.840	477.648	460.52	1118.2	0000000
105-360000	551.46	5.62090E-04	0.99944	0.99944	477.948	476.450	477.256	460.06	1118.2	0000000
105-370000	549.40	5.61507E-04	0.99944	0.99944	477.541	476.058	476.861	459.59	1118.2	0000000
105-380000	547.33	5.60911E-04	0.99944	0.99944	477.131	475.662	476.463	459.13	1118.2	0000000
105-390000	545.25	5.60301E-04	0.99944	0.99944	476.717	475.264	476.062	458.66	1118.3	0000000
105-400000	543.16	5.59675E-04	0.99944	0.99944	476.301	474.863	475.658	458.19	1118.3	0000000
105-410000	541.06	5.59034E-04	0.99944	0.99944	475.881	474.459	475.251	457.71	1118.3	0000000
105-420000	538.95	5.58376E-04	0.99944	0.99944	475.458	474.051	474.840	457.23	1118.3	0000000
105-430000	536.83	5.57702E-04	0.99944	0.99944	475.032	473.641	474.427	456.75	1118.3	0000000
105-440000	534.69	5.57010E-04	0.99944	0.99944	474.603	473.227	474.010	456.26	1118.3	0000000
105-450000	532.55	5.56300E-04	0.99944	0.99944	474.171	472.810	473.589	455.77	1118.4	0000000
105-460000	530.40	5.55572E-04	0.99944	0.99944	473.735	472.389	473.166	455.28	1118.4	0000000
105-470000	528.23	5.54825E-04	0.99945	0.99945	473.296	471.965	472.739	454.78	1118.4	0000000
105-480000	526.06	5.54059E-04	0.99945	0.99945	472.854	471.538	472.308	454.28	1118.4	0000000
105-490000	523.87	5.53274E-04	0.99945	0.99945	472.408	471.106	471.873	453.78	1118.4	0000000
105-500000	521.67	5.52470E-04	0.99945	0.99945	471.958	470.672	471.435	453.27	1118.4	0000000
105-510000	519.46	5.51646E-04	0.99945	0.99945	471.505	470.233	470.993	452.76	1118.5	0000000
105-520000	517.24	5.50802E-04	0.99945	0.99945	471.049	469.790	470.548	452.24	1118.5	0000000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105-530000	515.01	5.49938E-04	0.99945	0.99945	470.588	469.344	470.098	451.72	1118.5	0000000
105-540000	512.76	5.49054E-04	0.99945	0.99945	470.124	468.894	469.645	451.20	1118.5	0000000
105-550000	510.50	5.48149E-04	0.99945	0.99945	469.656	468.439	469.187	450.67	1118.5	0000000
105-560000	508.23	5.47224E-04	0.99945	0.99945	469.184	467.981	468.725	450.14	1118.5	0000000
105-570000	505.95	5.46279E-04	0.99945	0.99945	468.708	467.518	468.259	449.60	1118.5	0000000
105-580000	503.65	5.45312E-04	0.99945	0.99945	468.228	467.051	467.789	449.06	1118.6	0000000
105-590000	501.34	5.44325E-04	0.99946	0.99946	467.744	466.579	467.314	448.51	1118.6	0000000
105-600000	499.01	5.43316E-04	0.99946	0.99946	467.255	466.103	466.835	447.96	1118.6	0000000
105-610000	496.67	5.42286E-04	0.99946	0.99946	466.762	465.622	466.351	447.41	1118.6	0000000
105-620000	494.32	5.41234E-04	0.99946	0.99946	466.264	465.137	465.863	446.85	1118.6	0000000
105-630000	491.95	5.40161E-04	0.99946	0.99946	465.762	464.646	465.369	446.28	1118.6	0000000
105-640000	489.57	5.39051E-04	0.99946	0.99946	465.260	464.150	464.871	445.72	1118.6	0000000
105-650000	487.18	5.37897E-04	0.99946	0.99946	464.758	463.648	464.368	445.16	1118.6	0000000
105-660000	484.76	5.36701E-04	0.99946	0.99946	464.254	463.139	463.859	444.59	1118.6	0000000
105-670000	482.34	5.35469E-04	0.99946	0.99946	463.745	462.625	463.346	444.02	1118.6	0000000
105-680000	479.89	5.34202E-04	0.99947	0.99947	463.231	462.105	462.827	443.44	1118.7	0000000
105-690000	477.43	5.32904E-04	0.99947	0.99947	462.713	461.579	462.302	442.86	1118.7	0000000
105-700000	474.96	5.31576E-04	0.99947	0.99947	462.189	461.047	461.772	442.27	1118.7	0000000
105-710000	472.47	5.30219E-04	0.99947	0.99947	461.659	460.508	461.237	441.68	1118.7	0000000
105-720000	469.96	5.28836E-04	0.99947	0.99947	461.124	459.964	460.695	441.08	1118.7	0000000
105-730000	467.43	5.27427E-04	0.99947	0.99947	460.582	459.413	460.147	440.48	1118.7	0000000
105-740000	464.88	5.25993E-04	0.99947	0.99947	460.035	458.856	459.593	439.86	1118.7	0000000
105-750000	462.32	5.24534E-04	0.99948	0.99948	459.481	458.292	459.033	439.24	1118.7	0000000
105-760000	459.73	5.23051E-04	0.99948	0.99948	458.922	457.722	458.466	438.62	1118.7	0000000
105-770000	457.13	5.21545E-04	0.99948	0.99948	458.355	457.145	457.892	437.99	1118.7	0000000
105-780000	454.51	5.20015E-04	0.99948	0.99948	457.782	456.560	457.312	437.35	1118.7	0000000
105-790000	451.87	5.18461E-04	0.99948	0.99948	457.203	455.969	456.724	436.70	1118.7	0000000
105-800000	449.20	5.16884E-04	0.99948	0.99948	456.616	455.370	456.129	436.05	1118.7	0000000
105-810000	446.52	5.15283E-04	0.99948	0.99948	456.021	454.763	455.527	435.38	1118.7	0000000
105-820000	443.81	5.13659E-04	0.99949	0.99949	455.420	454.149	454.917	434.71	1118.6	0000000
105-830000	441.09	5.12006E-04	0.99949	0.99949	454.811	453.526	454.299	434.03	1118.6	0000000
105-840000	438.34	5.10346E-04	0.99949	0.99949	454.193	452.896	453.673	433.35	1118.6	0000000
105-850000	435.56	5.08596E-04	0.99949	0.99949	453.568	452.256	453.038	432.65	1118.6	0000000
105-860000	432.76	5.07070E-04	0.99949	0.99949	452.934	451.608	452.395	431.95	1118.6	0000000
105-870000	429.94	5.04576E-04	0.99950	0.99950	452.292	450.951	451.743	431.23	1118.6	0000000
105-880000	427.09	5.05658E-04	0.99949	0.99949	451.640	450.284	451.081	430.51	1118.6	0000000
105-890000	424.21	4.92941E-04	0.99951	0.99951	450.985	449.607	450.410	429.78	1118.6	0000000
105-900000	421.32	5.32925E-04	0.99947	0.99947	450.294	448.925	449.730	429.01	1118.6	0000000
105-910000	411.59	5.27994E-04	0.99947	0.99947	448.727	445.790	447.423	427.29	1118.0	0000000
105-920000	408.08	5.65466E-04	0.99943	0.99943	447.574	445.209	446.580	426.01	1118.1	0000000
0 Vol.no.	pressure (psia)	voidf	voidg	voidgo	tempf (degF)	tempg (degF)	satt-part (degF)	uf (Btu/lb)	ug (Btu/lb)	vol-flag tlpvbfe
1A pipe										
107-010000	397.96	5.66455E-04	0.99943	0.99943	445.562	442.324	444.117	423.78	1117.8	0000000
107-020000	393.93	5.62862E-04	0.99944	0.99944	444.224	441.693	443.122	422.30	1118.0	0000000
107-030000	390.65	5.57616E-04	0.99944	0.99944	443.206	441.104	442.308	421.18	1118.2	0000000
107-040000	387.47	5.52499E-04	0.99945	0.99945	442.321	440.433	441.512	420.20	1118.2	0000000
107-050000	384.29	5.47819E-04	0.99945	0.99945	441.488	439.703	440.711	419.28	1118.2	0000000

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

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107-060000   381.09      5.43547E-04  0.99946      0.99946      440.671    438.933    439.899    418.38      1118.2     0000000
107-070000   377.85      5.39601E-04  0.99946      0.99946      439.854    438.131    439.074    417.48      1118.2     0000000
107-080000   374.57      5.35906E-04  0.99946      0.99946      439.029    437.303    438.234    416.57      1118.2     0000000
107-090000   371.26      5.32400E-04  0.99947      0.99947      438.191    436.452    437.378    415.65      1118.2     0000000
107-100000   367.91      5.29037E-04  0.99947      0.99947      437.338    435.580    436.505    414.71      1118.1     0000000
107-110000   364.51      5.25776E-04  0.99947      0.99947      436.469    434.685    435.615    413.76      1118.1     0000000
107-120000   361.06      5.22608E-04  0.99948      0.99948      435.582    433.770    434.705    412.79      1118.1     0000000
107-130000   357.57      5.19434E-04  0.99948      0.99948      434.676    432.832    433.776    411.79      1118.0     0000000
107-140000   354.02      5.16537E-04  0.99948      0.99948      433.751    431.872    432.825    410.78      1118.0     0000000
107-150000   350.42      5.12723E-04  0.99949      0.99949      432.804    430.889    431.853    409.74      1117.9     0000000
107-160000   346.76      5.12644E-04  0.99949      0.99949      431.833    429.882    430.857    408.68      1117.9     0000000
107-170000   343.04      4.97871E-04  0.99950      0.99950      430.850    428.845    429.835    407.60      1117.8     0000000
107-180000   339.26      5.41819E-04  0.99946      0.99946      429.795    427.797    428.791    406.45      1117.8     0000000
107-190000   326.75      5.13655E-04  0.99949      0.99949      427.303    423.235    425.263    403.74      1116.9     0000000
107-200000   320.98      5.08438E-04  0.99949      0.99949      425.386    421.907    423.599    401.65      1117.0     0000000
107-210000   316.44      5.04746E-04  0.99950      0.99950      423.846    420.844    422.274    399.97      1117.1     0000000
107-220000   312.12      5.01095E-04  0.99950      0.99950      422.471    419.711    421.000    398.47      1117.1     0000000
107-230000   307.79      4.97406E-04  0.99950      0.99950      421.153    418.490    419.712    397.04      1117.1     0000000
107-240000   303.40      4.93663E-04  0.99951      0.99951      419.841    417.193    418.387    395.61      1117.0     0000000
107-250000   298.91      4.89856E-04  0.99951      0.99951      418.507    415.827    417.018    394.16      1116.9     0000000
107-260000   294.30      4.85989E-04  0.99951      0.99951      417.135    414.395    415.597    392.68      1116.8     0000000
107-270000   289.56      4.82065E-04  0.99952      0.99952      415.713    412.897    414.118    391.14      1116.7     0000000
107-280000   284.69      4.78093E-04  0.99952      0.99952      414.234    411.329    412.576    389.54      1116.5     0000000
107-290000   279.65      4.74073E-04  0.99953      0.99953      412.691    409.685    410.961    387.87      1116.4     0000000
107-300000   274.44      4.70009E-04  0.99953      0.99953      411.073    407.957    409.266    386.12      1116.2     0000000
107-310000   269.03      4.65900E-04  0.99953      0.99953      409.373    406.134    407.481    384.29      1116.1     0000000
107-320000   263.40      4.61757E-04  0.99954      0.99954      407.578    404.206    405.593    382.35      1115.9     0000000
107-330000   257.52      4.57520E-04  0.99954      0.99954      405.676    402.154    403.588    380.31      1115.7     0000000
107-340000   251.36      4.53630E-04  0.99955      0.99955      403.649    399.961    401.448    378.13      1115.4     0000000
107-350000   244.87      4.46926E-04  0.99955      0.99955      401.480    397.598    399.146    375.80      1115.2     0000000
107-360000   238.01      4.59712E-04  0.99954      0.99954      399.106    395.064    396.666    373.25      1114.9     0000000
107-370000   217.88      4.79509E-04  0.99952      0.99952      393.059    385.773    389.043    366.79      1113.1     0000000
107-380000   204.69      5.10138E-04  0.99949      0.99949      387.624    380.802    383.747    360.99      1112.7     0000000
107-390000   192.62      4.23287E-04  0.99958      0.99958      382.793    375.739    378.659    355.86      1112.1     0000000
ATM      tmdpvol
109-010000   14.700      1.19226E-06  1.0000       1.0000       70.000     70.000     70.000     38.071      172.44     0011000
0System 1    *none*
0  Jun.no.   from vol.    to vol.   liq.j.vel.   vap.j.vel.   mass flow   jun.area   throat     jun-flag   flow no. advs. choked
                                    (ft/sec)     (ft/sec)     (lb/sec)    (ft2)      ratio      jefvcahs   regi last edit  total
LOSS     sngljun
102-000000 101-010002 103-010001   264.20       327.88       30.126      5.13000E-02 1.0000    00001000   mpr  0    0      0
MISC     pipe
103-010000 103-010002 103-020001   322.38       343.50       30.126      5.13000E-02 1.0000    00001000   anm  0    0      0
103-020000 103-020002 103-030001   333.91       345.13       30.126      5.13000E-02 1.0000    00001000   anm  0    0      0
103-030000 103-030002 103-040001   340.26       346.01       30.126      5.13000E-02 1.0000    00001000   anm  0    0      0
103-040000 103-040002 103-050001   329.46       346.90       30.126      5.13000E-02 1.0000    00001000   anm  0    0      0
103-050000 103-050002 103-060001   325.19       349.17       30.126      5.13000E-02 1.0000    00001000   anm  0    0      0
103-060000 103-060002 103-070001   328.21       349.88       30.126      5.13000E-02 1.0000    00001000   anm  0    0      0
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Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

103-070000	103-070002	103-080001	315.07	350.49	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-080000	103-080002	103-090001	337.89	352.61	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-090000	103-090002	103-100001	343.44	353.39	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-100000	103-100002	103-110001	346.06	354.06	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-110000	103-110002	103-120001	348.21	354.72	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-120000	103-120002	103-130001	348.89	355.38	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-130000	103-130002	103-140001	354.00	356.04	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-140000	103-140002	103-150001	340.98	356.71	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-150000	103-150002	103-160001	342.53	359.04	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-160000	103-160002	103-170001	344.12	359.89	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-170000	103-170002	103-180001	345.56	360.66	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-180000	103-180002	103-190001	346.87	361.42	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-190000	103-190002	103-200001	348.10	362.17	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-200000	103-200002	103-210001	349.26	362.92	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-210000	103-210002	103-220001	350.37	363.67	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-220000	103-220002	103-230001	351.46	364.42	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-230000	103-230002	103-240001	352.41	365.17	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-240000	103-240002	103-250001	353.79	365.92	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-250000	103-250002	103-260001	353.25	366.68	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-260000	103-260002	103-270001	360.57	367.42	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-270000	103-270002	103-280001	337.25	368.20	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-280000	103-280002	103-290001	356.16	370.65	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-290000	103-290002	103-300001	361.26	371.50	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-300000	103-300002	103-310001	363.17	372.25	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-310000	103-310002	103-320001	368.31	372.99	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-320000	103-320002	103-330001	356.85	373.76	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-330000	103-330002	103-340001	360.74	376.41	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-340000	103-340002	103-350001	363.61	377.40	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-350000	103-350002	103-360001	365.86	378.29	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-360000	103-360002	103-370001	367.72	379.16	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-370000	103-370002	103-380001	369.33	380.03	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-380000	103-380002	103-390001	370.77	380.89	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-390000	103-390002	103-400001	372.08	381.75	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-400000	103-400002	103-410001	373.31	382.62	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-410000	103-410002	103-420001	374.46	383.49	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-420000	103-420002	103-430001	375.62	384.37	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-430000	103-430002	103-440001	376.53	385.25	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-440000	103-440002	103-450001	378.21	386.14	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-450000	103-450002	103-460001	376.92	387.03	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-460000	103-460002	103-470001	386.65	387.93	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-470000	103-470002	103-480001	358.52	388.88	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-480000	103-480002	103-490001	377.53	391.90	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-490000	103-490002	103-500001	382.61	393.07	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-500000	103-500002	103-510001	385.25	394.12	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-510000	103-510002	103-520001	387.37	395.16	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-520000	103-520002	103-530001	389.16	396.21	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-530000	103-530002	103-540001	390.75	397.26	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
103-540000	103-540002	103-550001	392.20	398.32	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

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103-550000  103-550002  103-560001  393.55      399.39      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-560000  103-560002  103-570001  394.83      400.46      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-570000  103-570002  103-580001  396.07      401.55      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-580000  103-580002  103-590001  397.26      402.64      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-590000  103-590002  103-600001  398.44      403.74      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-600000  103-600002  103-610001  399.59      404.85      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-610000  103-610002  103-620001  400.73      405.97      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-620000  103-620002  103-630001  401.89      407.09      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-630000  103-630002  103-640001  402.93      408.23      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-640000  103-640002  103-650001  404.39      409.38      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-650000  103-650002  103-660001  404.30      410.53      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-660000  103-660002  103-670001  410.17      411.70      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-670000  103-670002  103-680001  394.78      412.88      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-680000  103-680002  103-690001  398.91      416.54      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-690000  103-690002  103-700001  402.09      417.91      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-700000  103-700002  103-710001  404.74      419.14      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-710000  103-710002  103-720001  406.85      420.34      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-720000  103-720002  103-730001  409.33      421.54      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-730000  103-730002  103-740001  409.28      422.74      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
103-740000  103-740002  103-750001  418.10      423.92      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
0   Jun.no.   from vol.    to vol.   liq.j.vel.  vap.j.vel.  mass flow   jun.area     throat      jun-flag  flow no. advs. choked
                                     (ft/sec)    (ft/sec)    (lb/sec)    (ft2)        ratio       jefvcahs  regi last edit total
60DEG    sngljun
104-000000  103-750002  105-010001  394.58      425.16      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
3PIPE    pipe
105-010000  105-010002  105-020001  402.29      428.49      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-020000  105-020002  105-030001  407.71      429.95      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-030000  105-030002  105-040001  411.83      431.29      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-040000  105-040002  105-050001  415.16      432.62      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-050000  105-050002  105-060001  417.96      433.95      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-060000  105-060002  105-070001  420.40      435.29      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-070000  105-070002  105-080001  422.59      436.62      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-080000  105-080002  105-090001  424.59      437.97      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-090000  105-090002  105-100001  426.45      439.32      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-100000  105-100002  105-110001  428.21      440.68      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-110000  105-110002  105-120001  429.89      442.06      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-120000  105-120002  105-130001  431.51      443.45      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-130000  105-130002  105-140001  433.09      444.85      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-140000  105-140002  105-150001  434.63      446.26      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-150000  105-150002  105-160001  436.15      447.69      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-160000  105-160002  105-170001  437.65      449.13      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-170000  105-170002  105-180001  439.13      450.59      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-180000  105-180002  105-190001  440.61      452.06      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-190000  105-190002  105-200001  442.09      453.55      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-200000  105-200002  105-210001  443.56      455.05      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-210000  105-210002  105-220001  445.04      456.58      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-220000  105-220002  105-230001  446.52      458.11      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
105-230000  105-230002  105-240001  448.01      459.67      30.126      5.13000E-02  1.0000      00001000  anm  0      0      0
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

105-240000	105-240002	105-250001	449.50	461.24	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-250000	105-250002	105-260001	451.00	462.82	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-260000	105-260002	105-270001	452.52	464.43	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-270000	105-270002	105-280001	454.04	466.05	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-280000	105-280002	105-290001	455.58	467.69	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-290000	105-290002	105-300001	457.13	469.36	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-300000	105-300002	105-310001	458.70	471.03	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-310000	105-310002	105-320001	460.28	472.73	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-320000	105-320002	105-330001	461.87	474.45	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-330000	105-330002	105-340001	463.48	476.19	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-340000	105-340002	105-350001	465.11	477.95	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-350000	105-350002	105-360001	466.76	479.72	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-360000	105-360002	105-370001	468.42	481.52	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-370000	105-370002	105-380001	470.10	483.35	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-380000	105-380002	105-390001	471.80	485.19	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-390000	105-390002	105-400001	473.52	487.05	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-400000	105-400002	105-410001	475.26	488.94	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-410000	105-410002	105-420001	477.03	490.85	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-420000	105-420002	105-430001	478.81	492.79	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-430000	105-430002	105-440001	480.61	494.75	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-440000	105-440002	105-450001	482.43	496.73	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-450000	105-450002	105-460001	484.28	498.74	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-460000	105-460002	105-470001	486.15	500.78	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-470000	105-470002	105-480001	488.04	502.84	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-480000	105-480002	105-490001	489.96	504.93	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-490000	105-490002	105-500001	491.90	507.05	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-500000	105-500002	105-510001	493.87	509.19	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-510000	105-510002	105-520001	495.86	511.37	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-520000	105-520002	105-530001	497.88	513.57	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-530000	105-530002	105-540001	499.93	515.80	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-540000	105-540002	105-550001	502.00	518.07	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-550000	105-550002	105-560001	504.11	520.37	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-560000	105-560002	105-570001	506.24	522.70	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-570000	105-570002	105-580001	508.40	525.06	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-580000	105-580002	105-590001	510.59	527.46	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-590000	105-590002	105-600001	512.81	529.89	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-600000	105-600002	105-610001	515.07	532.37	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-610000	105-610002	105-620001	517.35	534.87	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-620000	105-620002	105-630001	519.68	537.42	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-630000	105-630002	105-640001	522.03	540.00	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-640000	105-640002	105-650001	524.42	542.63	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-650000	105-650002	105-660001	526.85	545.29	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-660000	105-660002	105-670001	529.31	548.00	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-670000	105-670002	105-680001	531.81	550.75	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-680000	105-680002	105-690001	534.36	553.54	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-690000	105-690002	105-700001	536.94	556.38	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-700000	105-700002	105-710001	539.56	559.27	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0
105-710000	105-710002	105-720001	542.23	562.21	30.126	5.13000E-02	1.0000	00001000	anm	0	0	0

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 105-720000  105-720002  105-730001  544.94      565.20      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-730000  105-730002  105-740001  547.69      568.24      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-740000  105-740002  105-750001  550.50      571.33      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-750000  105-750002  105-760001  553.35      574.48      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-760000  105-760002  105-770001  556.25      577.68      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-770000  105-770002  105-780001  559.20      580.95      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-780000  105-780002  105-790001  562.21      584.27      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-790000  105-790002  105-800001  565.27      587.66      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-800000  105-800002  105-810001  568.39      591.12      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-810000  105-810002  105-820001  571.56      594.64      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-820000  105-820002  105-830001  574.80      598.23      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-830000  105-830002  105-840001  578.10      601.89      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-840000  105-840002  105-850001  581.45      605.63      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-850000  105-850002  105-860001  584.94      609.44      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-860000  105-860002  105-870001  588.21      613.34      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-870000  105-870002  105-880001  592.66      617.32      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-880000  105-880002  105-890001  592.95      621.39      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-890000  105-890002  105-900001  609.87      625.54      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-900000  105-900002  105-910001  565.65      629.81      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 105-910000  105-910002  105-920001  590.74      642.90      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
0  Jun.no.    from vol.    to vol.   liq.j.vel.  vap.j.vel.  mass flow   jun.area     throat     jun-flag  flow no. advs. choked
                                     (ft/sec)    (ft/sec)    (lb/sec)    (ft2)        ratio      jefvcahs  regi last edit total
 ELBOW    sngljun
 106-000000  105-920002  107-010001  562.59      648.44      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 1A       pipe
 107-010000  107-010002  107-020001  589.35      663.33      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-020000  107-020002  107-030001  606.99      670.12      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-030000  107-030002  107-040001  619.98      675.78      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-040000  107-040002  107-050001  630.41      681.30      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-050000  107-050002  107-060001  639.31      686.88      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-060000  107-060002  107-070001  647.24      692.57      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-070000  107-070002  107-080001  654.54      698.40      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-080000  107-080002  107-090001  661.43      704.38      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-090000  107-090002  107-100001  668.07      710.53      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-100000  107-100002  107-110001  674.57      716.86      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-110000  107-110002  107-120001  681.00      723.38      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-120000  107-120002  107-130001  687.41      730.12      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-130000  107-130002  107-140001  693.95      737.07      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-140000  107-140002  107-150001  700.26      744.26      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-150000  107-150002  107-160001  707.97      751.70      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-160000  107-160002  107-170001  710.69      759.41      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-170000  107-170002  107-180001  734.55      767.40      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-180000  107-180002  107-190001  677.71      775.73      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-190000  107-190002  107-200001  747.85      801.97      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-200000  107-200002  107-210001  776.65      815.88      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-210000  107-210002  107-220001  794.30      827.33      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-220000  107-220002  107-230001  808.01      838.47      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
 107-230000  107-230002  107-240001  820.24      849.87      30.126      5.13000E-02  1.0000     00001000  anm  0      0      0
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
 107-240000  107-240002  107-250001   832.04       861.74       30.126      5.13000E-02   1.0000     00001000   anm  0      0      0
 107-250000  107-250002  107-260001   843.91       874.19       30.126      5.13000E-02   1.0000     00001000   anm  0      0      0
 107-260000  107-260002  107-270001   856.15       887.31       30.126      5.13000E-02   1.0000     00001000   anm  0      0      0
 107-270000  107-270002  107-280001   868.94       901.20       30.126      5.13000E-02   1.0000     00001000   anm  0      0      0
 107-280000  107-280002  107-290001   882.42       915.96       30.126      5.13000E-02   1.0000     00001000   anm  0      0      0
 107-290000  107-290002  107-300001   896.72       931.70       30.126      5.13000E-02   1.0000     00001000   anm  0      0      0
 107-300000  107-300002  107-310001   911.97       948.55       30.126      5.13000E-02   1.0000     00001000   anm  0      0      0
 107-310000  107-310002  107-320001   928.31       966.67       30.126      5.13000E-02   1.0000     00001000   anm  0      0      0
 107-320000  107-320002  107-330001   945.88       986.26       30.126      5.13000E-02   1.0000     00001000   anm  0      0      0
 107-330000  107-330002  107-340001   965.04       1007.6       30.126      5.13000E-02   1.0000     00001000   anm  0      0      0
 107-340000  107-340002  107-350001   985.06       1030.9       30.126      5.13000E-02   1.0000     00001000   anm  0      0      0
 107-350000  107-350002  107-360001   1013.3       1056.6       30.126      5.13000E-02   1.0000     00001000   anm  0      0      0
 107-360000  107-360002  107-370001   1000.1       1085.3       30.126      5.13000E-02   1.0000     00001000   anm  0      0      0
 107-370000  107-370002  107-380001   1041.5       1173.9       30.126      5.13000E-02   1.0000     00001000   anm  0      0      0
 107-380000  107-380002  107-390001   1041.9       1243.5       30.126      5.13000E-02   1.0000     00001000   anm  0      0      0
 1A       sngljun
 108-000000  107-390002  109-010001   1315.1       1315.1       30.126      5.13000E-02   1.0000     00000100   anm  1  12064  12064
 transient timing information
0subroutine          entries   time(sec)  percent
 state(1)             12119    84.7813    39.5452
 phantv               12119    51.0313    23.8029
 phantj               12119    26.0625    12.1565
 fwdrag               12119    19.0000     8.8623
 yexplt               12119     6.5469     3.0537
 preseq               12119     5.4375     2.5363
 eqfinl               12119     5.1250     2.3905
 volvel               12119     3.4375     1.6034
 vlvela               12119     2.7813     1.2973
 dtstep               12120     2.5156     1.1734
 syssol               12119     1.7656     0.8236
 jprop                36357     1.5469     0.7215
 vfinl                12119     1.3438     0.6268
 tstate               12119     1.1875     0.5539
 hydro                12119     0.6250     0.2915
 hzflow               36357     0.5000     0.2332
 jchoke               12119     0.3750     0.1749
 packer               12119     0.2500     0.1166
 hloss                12119     0.0781     0.0364
 total                         214.3906
0---Restart no.   12119 written, block no.     1, at time=     7.00053    ---
1 time        mflowj
  (sec)        108000000
               (lb/sec)

  5.00058       30.126
  5.10049       30.126
  5.20040       30.126
  5.30031       30.126
```

Attachment G: RELAP Output File – Extended Power Uprate (EPU) Conditions

```
  5.40022       30.126
  5.50013       30.126
  5.60004       30.126
  5.70053       30.126
  5.80044       30.126
  5.90035       30.126
  6.00026       30.126
  6.10017       30.126
  6.20008       30.126
  6.30057       30.126
  6.40048       30.126
  6.50039       30.126
  6.60030       30.126
  6.70021       30.126
  6.80012       30.126
  6.90003       30.126
  7.00053       30.126

0---Restart Summary:        2 blocks written in restart file  ---
*Card   Restart *   Problem Time  Block
* No.     No.           (s)        No.
*103          0 *     0.00000         0
*103      12119 *     7.00053         1
0Final time=    7.00053     sec    advancements attempted=  12119
0Transient terminated by end of time step cards.
```

Attachment H: DIT-PB-MPED-0054-00

DESIGN INFORMATION TRANSMITTAL - FIRST PAGE
Form SOP-0403-02-02, Revision 5

DESIGN INFORMATION TRANSMITTAL

☒ Safety-Related ☐ Non-Safety-Related

DIT No.DIT-PB-MPED-0054-00

Client: FPL Energy Project No.: 11165-106

Page 1 of 3

Station: Point Beach Nuclear Plant Unit(s): 1& 2

To: James Palmer

Subject: PBNP Condensate and Feedwater System Makeup Capability

MODIFICATION OR DESIGN CHANGE NUMBERS

Preparer (Print name)	Process Group	Preparer's Signature	Issue Date
M. G. Flynn	NPT		11-25-2008

STATUS OF INFORMATION (This information is approved for use. Design information, approved for use, that contains assumptions or is preliminary or requires further verification shall be so identified).

Approved for use

IDENTIFICATION OF THE SPECIFIC DESIGN INFORMATION TRANSMITTED AND PURPOSE OF ISSUE
(List any supporting documents attached to DIT by its title, revision and/or issue date, and total number of pages for each supporting document.)

The purpose of this Design Information Transmittal is to provide information on the Condensate and Feedwater System makeup capability to establish that the Steam Generator tubes would not be uncovered if a break in one of the steam lines to Turbine Driven AFW turbines were to break at a flow rate of 40 lb_m/sec. Uncovering the steam generator tubes could result in superheated steam being produced.

Per Drawings M-217, Sheet 1, M-202, Sheet 1 and M-2202, Sheet 1, the Condensate and Feedwater system have the following sources of stored water:

- Condenser Hot Well
- Condensate Storage Tank

Per PBF-2034 and PBF-2035, the Condenser Hot Well Level is maintained between 18" and 22" (indicated level). Per SPTP 14.2, the Condenser Hotwell low level alarm is at 10" above the bottom of the condenser (6" indicated). Per TLB 45, the Condenser Hotwell contains approximately 1330 gallons/inch of level. Thus, the volume of water stored in the Condenser Hotwell between the normal level and the low level alarm point exceeds 15,960 gallons. Using 120°F as a reasonable upper bound for the Condenser Hotwell temperature yields a density of the water of 61.7 lb_m/ft^3. Thus, the mass of water in the Condenser Hotwell is 131,670 lb_m.

- Continued on Page 2 -

SOURCE OF INFORMATION

Calc No. _____ Rev. Date

Report No. _____ Rev. Date

Other See list of References on Page 3

DISTRIBUTION

Attachment H: DIT-PB-MPED-0054-00

DESIGN INFORMATION TRANSMITTAL - CONTINUATION PAGE
Form SOP-0403-02-03, Revision 5

Sargent & Lundy	DESIGN INFORMATION TRANSMITTAL	
DIT No.: DIT-PB-MPED-0054-00	Project No.: 11165-106	Page 2 of 3

Per SPTP 14.2, at the Condenser Hotwell low level alarm point there is 6" of water (indicated) above the bottom of the range. Thus, the volume of water stored in the Condenser Hotwell below the low level alarm point exceeds 7980 gallons. Thus, the mass of water below the Condenser Hotwell low level alarm point is 65,830 lb_m.

Per DBD-03, the capacity of Condenser Hotwell makeup from the Condensate Storage Tanks is 200 gpm. Using 100°F as a reasonable upper bound for the Condensate Storage Tank temperature yields a density of the water of 62 lb_m/ft^3. Thus, the Condenser Hotwell make-up rate is 27.6 lb_m /sec.

From Tech Spec 3.7.6, the minimum required volume within the Condensate Storage Tanks is 13,000 gallons per unit. Normal water level is maintained above this point to ensure that the Condensate Storage Tanks remain operable. Using 100°F as a reasonable upper bound for the Condensate Storage Tank temperature yields a density of the water of 62.0 lb_m/ft^3. Thus, the minimum mass of water in the Condensate Storage Tank with no credit for makeup from the Water Treatment System is 107,760 lb_m.

From Westinghouse Report WNEP-9158 Page 42, the normal steam generator water level is 459 inches and the top of the highest tube is at 374.4 inches. From the graph on Page 42 of Westinghouse Report WNEP-9158, the steam generator secondary volume at 459 inches is 2750 ft^3 and at 374.4 inches is 1750 ft^3. The steam generator operating temperature is 547°F at zero load, per Westinghouse Report, NPC-1999-05997. The density of saturated fluid at 547°F is 46.1 lb_m/ft^3. Thus, the mass of water between the steam generator normal water level and the top of the highest tube is 46,100 lb_m. Production of superheated steam would require that a substantial portion of the tubes be uncovered. Thus, using the level associated with the top of the highest tube is conservative.

For a steam line break with a flow rate that does not result in a reactor trip on steam flow/feed flow mismatch, the feed flow to the steam generator will increase to maintain level in the steam generator.

- Mass within the Condenser Hotwell plus the mass of water above the top of the highest Steam Generator Tube is sufficient to support condensate and feedwater system operation with a break flow rate of 40 lbm/sec for over 1 hour.
- Mass within the Condenser Storage Tank is sufficient to support condensate and feedwater system operation with a break flow rate of 40 lbm/sec for roughly 45 minutes with no credit for make-up from the Water Treatment System.
- Mass below the Condenser Hotwell low level point plus the mass of water above the top of the highest Steam Generator Tube is sufficient to support condensate and feedwater system operation with a break flow rate of 40 lbm/sec for over 45 minutes.

At this break flow rate, the mass out of the Condenser Hotwell will exceed the makeup flow rate and water level in the Condenser Hotwell will result in a very gradual decrease in the Condenser Hotwell level (at the differential mass flow of 12.4 lb_m/sec, the decrease in Condenser Hotwell volume would equate to 1.5 gal/sec at Condenser Hotwell density; with 1330 gallon/inch of Condenser Hotwell level, the rate of level decrease is less than 0.1 inch/min).

The Operator will have numerous indications within the Control Room to identify that there is a Secondary System coolant leak in progress:

- Increased requirements for Condensate Storage Tank makeup from the Water Treatment System.
- Steady decrease in the Condensate Storage Tank level if Water Treatment System Makeup is not adequate
- Gradual but steady decrease in Condenser Hotwell level

Per BG AOP-2A, one of the first step Operators would take would be to assess whether there is a steam leak to the atmosphere. A 40 lb_m/sec steam line break in the CCW HX room would result in the actuation of the blowout panel and the discharge of steam to the Turbine Building.

Attachment H: DIT-PB-MPED-0054-00

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The volume of water stored in the Condenser Hotwell and above the top of the highest Steam Generator tube plus the makeup capability for the Condenser Hotwell from the Condensate Storage Tank and the available indications ensure that the break can be isolated before the Steam Generator tubes are uncovered. Thus, superheated steam would not be produced due to a 40 lb_m/sec steam line break in the CCW HX room.

References:

1. M-202, Sheet 1, Rev. 44, "U1 Condensate System"
2. M-217, Sheet 1, Rev. 84, "Auxiliary Feedwater Sys."
3. M-2202, Sheet 1, Rev. 46, "U2 Condensate System"
4. PBF-2034, Rev. 74, "Control Room Log – Unit 1"
5. PBF-2035, Rev. 74, "Control Room Log – Unit 2"
6. SPTP 14.2, Rev. 20, "Setpoint Document Condensate and Feedwater System"
7. TLB 45, Rev. 2, "Main Condenser Hotwell 1(2) SC1 A/B"
8. ASME Steam Tables, 1997
9. DBD-03, Rev. 13, "Condensate and Feedwater System Design Basis Document"
10. Tech Spec 3.7.6, Unit 1 Amd. 201/ Unit 2 Amd. 206, "Condensate Storage Tank (CST)"
11. Westinghouse Letter WEP-PB2-96-287, "Steam Generator Replacement – Technical", Dated November 11, 1996 (Transmits WNEP 9515, Rev. 0 "Thermal and Hydraulic Design Data Report")
12. Westinghouse Report, NPC-1999-05997, Revision 2, "Fuel Upgrade/Power Uprating Reload Transition Safety Report for Point Beach Units 1 and 2,"
13. BG AOP-2A, Rev. 9, "Secondary Coolant Leak"