

BFN-27

Table 14.6-1
Sheet 1 of 2Iodine-131 Activity (Ci) by Location as Function of Time for CRDA

<u>Time - hrs</u>	<u>Main Cond</u>	<u>Stack Rm</u>	<u>Control Rm</u>	<u>Environment</u>
0	2.99E+04	0.00E+00	0.00E+00	0.00E+00
0.4	2.35E+04	3.39E+00	2.32E-02	6.27E+02
0.5	2.22E+04	4.11E+00	2.57E-02	7.60E+02
0.8	1.87E+04	6.03E+00	1.45E-02	1.12E+03
1.1	1.55E+04	7.62E+00	8.20E-03	1.42E+03
1.4	1.29E+04	8.93E+00	4.65E-03	1.67E+03
1.7	1.08E+04	1.00E+01	2.65E-03	1.88E+03
2	9.05E+03	1.09E+01	1.52E-03	2.06E+03
2.3	7.56E+03	1.16E+01	8.60E-04	2.20E+03
2.6	6.32E+03	1.22E+01	4.89E-04	2.33E+03
2.9	5.29E+03	1.27E+01	2.80E-04	2.43E+03
3.2	4.42E+03	1.31E+01	1.62E-04	2.51E+03
3.5	3.69E+03	1.34E+01	9.49E-05	2.59E+03
3.8	3.09E+03	1.36E+01	5.65E-05	2.65E+03
4.1	2.58E+03	1.38E+01	3.44E-05	2.70E+03
4.4	2.16E+03	1.40E+01	2.16E-05	2.74E+03
4.7	1.80E+03	1.41E+01	1.40E-05	2.77E+03
5	1.51E+03	1.41E+01	9.44E-06	2.80E+03
5.3	1.26E+03	1.42E+01	6.62E-06	2.83E+03
5.6	1.05E+03	1.42E+01	4.82E-06	2.85E+03
5.9	8.81E+02	1.42E+01	3.62E-06	2.86E+03
6.2	7.37E+02	1.42E+01	2.80E-06	2.88E+03
6.5	6.16E+02	1.42E+01	2.22E-06	2.89E+03
6.8	5.15E+02	1.41E+01	1.78E-06	2.90E+03
7.1	4.30E+02	1.41E+01	1.45E-06	2.91E+03
7.4	3.60E+02	1.40E+01	1.19E-06	2.92E+03
7.7	3.01E+02	1.40E+01	9.81E-07	2.92E+03
8	2.51E+02	1.39E+01	8.13E-07	2.93E+03
8.3	2.10E+02	1.39E+01	5.80E-07	2.93E+03

BFN-27

Table 14.6-1
Sheet 2 of 2

Iodine-131 Activity (Ci) by Location as Function of Time for CRDA

<u>Time - hrs</u>	<u>Main Cond</u>	<u>Stack Rm</u>	<u>Control Rm</u>	<u>Environment</u>
8.6	1.76E+02	1.38E+01	4.29E-07	2.93E+03
8.9	1.47E+02	1.37E+01	3.28E-07	2.94E+03
9.2	1.23E+02	1.36E+01	2.56E-07	2.94E+03
9.5	1.03E+02	1.36E+01	2.04E-07	2.94E+03
9.8	8.58E+01	1.35E+01	1.65E-07	2.94E+03
10.1	7.17E+01	1.34E+01	1.35E-07	2.94E+03
10.4	6.00E+01	1.33E+01	1.11E-07	2.94E+03
24	1.78E-02	1.01E+01	0	2.95E+03
96	0	2.22E+00	0	2.95E+03
720	0	0	0	2.95E+03

BFN-27

TABLE 14.6-2

(Deleted by Amendment 19)

TABLE 14.6-3

SUMMARY OF POWER UPRATE INPUT PARAMETERS USED FOR ALL CONTAINMENT ANALYSES

Parameter	Unit	Analysis Value for Power Uprate
Core Thermal Power		
102% of uprated power (3458 MWt)	MWt	3527
Initial Reactor Core Flow (100% rated)	Mlbm/hr	102.5
Vessel dome pressure		
At 102% of uprated power (3458 MWt)	psia	1053
Initial drywell pressure	psia	17.0/15.1 ⁽¹⁾
Initial drywell temperature (Maximum value used to maximize the drywell temp. response)	°F	150
Initial drywell relative humidity (Minimum)	%	20
Initial wetwell pressure	psia	15.9/15.1 ⁽¹⁾
Initial wetwell airspace temperature (Maximum)	°F	95
Initial wetwell airspace relative humidity (Maximum)	%	100
Initial pressure suppression pool temperature (Maximum value used to maximize the suppression pool temp. response)	°F	95
Downcomer submergence at high water level	ft.	3.83
Initial pressure suppression pool volume:		
Maximum (at high water level corresponding to 3'-10" downcomer submergence with a drywell to torus differential pressure of 1.1 psid)	ft ³	131,400
Minimum (at low water level corresponding to 2'-11" downcomer submergence with zero drywell to torus differential pressure)	ft ³	121,500
Total pressure suppression chamber volume (including pool)	ft ³	250,800
Drywell free volume (including vent system)	ft ³	171,000/159,000 ⁽¹⁾
Torus-to-drywell vacuum breaker full open Δp	psid	0.5
Number of downcomers		96
Downcomer I.D.	ft.	1.956
Vent flow loss coefficient	-	5.32

(1): The value that was most limiting for a specific analysis was used.

Table 14.6-4

SUMMARY OF POWER UPRATE INPUT PARAMETERS USED FOR DBA-LOCA SHORT TERM
CONTAINMENT RESPONSE

Parameter	Units	Case 1 ⁽¹⁾	Case 2	Case 3 ⁽²⁾	Case 4
Initial Reactor Thermal Power	MWt	3527	3527	3527	2179
Initial Reactor Thermal Power	% of uprated	102	102	102	63
Initial Reactor Core Flow	Mlb/hr	102.5	102.5	83.0	39.0
Initial Reactor Core Flow	% of uprated	100	100	81	38
Feedwater Temperature	°F	384	328	328	328
Initial suppression pool volume	ft ³	131,400	131,400	131,400	131,400
Drywell Free Volume (including vent system)	ft ³	159000	159000	171000	159000
Initial Drywell Pressure	psia	15.1	17.0	17.0	17.0
Drywell-Wetwell Pressure difference	psid	0.0	1.1	1.1	1.1

(1): This is the most limiting case for hydrodynamic loads.

(2): This is the most limiting case for DBA-LOCA drywell pressure and temperature response.

Table 14.6-5

SUMMARY OF POWER UPRATE INPUT PARAMETERS USED FOR DBA-LOCA LONG-TERM
CONTAINMENT RESPONSE

Parameter	Unit	Analysis Value for Power Uprate
Core Thermal Power 102% of uprated power (3458 MWt)	MWt	3527
Core Flow (100% of rated)	Mlbm/hr	102.5
Initial suppression pool volume	ft ³	121,500
Decay Heat Model	-	ANS/ANSI 5.1 + 2 σ uncertainty
RHRS Heat Exchanger Heat Removal Rate (BTU per hr) calculated at the following containment spray mode conditions:		
- Shell side (RHR) flow (Minimum)	gpm	6500
- Shell side inlet temperature (Maximum)	°F	187.3 (Unit 1), 177 (Units 2 and 3)
- Tube side (RHRSW) flow (Minimum)	gpm	4000
- Tube side inlet temperature	°F	95 (Unit 1), 92 ⁽¹⁾ (Units 2 and 3)
- Heat exchanger k-factor	Btu/sec-°F	223

(1) Operation with inlet temperature above 92°F is governed by Technical Specification limits for the Ultimate Heat Sink.

Table 14.6-6

DBA-LOCA SHORT TERM PRESSURE AND TEMPERATURE RESPONSE

Parameter	Units	Case 1 ⁽¹⁾	Case 2	Case 3 ⁽²⁾	Case 4
Peak Drywell Pressure	psig	48.6	47.1	50.6	44.2
Peak Drywell Gas Temperature	°F	295	294	297	290

(1): This is the most limiting case for hydrodynamic loads.

(2): This is the most limiting case for DBA-LOCA drywell pressure and temperature response for Unit 2 and 3. For Unit 1 the peak drywell pressure and peak drywell gas temperature are 48.5 psig and 295.2°F, respectively.

BFN-27

Table 14.6-7

BOUNDING CORE INVENTORY

Isotope	Ci/MWt t=0	Ci/MWt t=24 hr	Isotope	Ci/MWt t=0	Ci/MWt t=24 hr
CO58	1.430E+02	1.416E+02	XE131M	3.544E+02	3.487E+02
CO60	1.425E+02	1.424E+02	TE132	3.829E+04	3.089E+04
KR83M	3.432E+03	1.387E+01	I132	3.885E+04	3.184E+04
KR85	3.601E+02	3.601E+02	I133	5.534E+04	2.559E+04
KR85M	7.329E+03	1.811E+02	XE133	5.504E+04	5.303E+04
RB86	6.372E+01	6.141E+01	XE133M	1.734E+03	1.562E+03
KR87	1.446E+04	3.051E-02	I134	6.141E+04	1.450E-03
KR88	2.009E+04	5.743E+01	CS134	5.703E+03	5.697E+03
KR89	2.521E+04	0.000E+00	I135	5.250E+04	4.189E+03
SR89	2.786E+04	2.748E+04	XE135	1.971E+04	1.429E+04
SR90	3.165E+03	3.165E+03	XE135M	1.135E+04	6.823E+02
Y90	3.283E+03	3.273E+03	CS136	1.941E+03	1.841E+03
SR91	3.487E+04	6.103E+03	XE137	5.023E+04	0.000E+00
Y91	3.583E+04	3.564E+04	CS137	4.037E+03	4.037E+03
SR92	3.677E+04	7.922E+01	BA137M	3.829E+03	3.810E+03
Y92	3.696E+04	1.168E+03	XE138	4.757E+04	1.172E-26
Y93	4.147E+04	8.084E+03	BA139	4.930E+04	4.170E-01
ZR95	4.880E+04	4.822E+04	BA140	4.909E+04	4.644E+04
NB95	4.897E+04	4.897E+04	LA140	5.231E+04	5.079E+04
ZR97	4.953E+04	1.851E+04	LA141	4.498E+04	7.085E+02
MO99	5.088E+04	3.956E+04	CE141	4.535E+04	4.463E+04
TC99M	4.454E+04	3.772E+04	LA142	4.397E+04	1.035E+00
RU103	4.094E+04	4.018E+04	CE143	4.245E+04	2.597E+04
RU105	2.710E+04	6.615E+02	PR143	4.113E+04	4.075E+04
RH105	2.559E+04	1.840E+04	CE144	3.810E+04	3.810E+04
RU106	1.488E+04	1.486E+04	ND147	1.806E+04	1.698E+04
SB127	2.796E+03	2.369E+03	NP239	5.201E+05	3.902E+05
TE127	2.773E+03	2.580E+03	PU238	2.805E+02	2.805E+02
TE127M	3.721E+02	3.719E+02	PU239	1.234E+01	1.238E+01
SB129	8.457E+03	1.952E+02	PU240	1.730E+01	1.730E+01
TE129	8.326E+03	1.236E+03	PU241	4.450E+03	4.448E+03
TE129M	1.615E+03	1.590E+03	AM241	5.449E+00	5.470E+00
TE131M	5.155E+03	2.976E+03	CM242	1.234E+03	1.234E+03
I131	2.669E+04	2.481E+04	CM244	5.697E+01	5.697E+01

BFN-27

Table 14.6-8

(Sheet 1)

VALUES FOR X/Q FOR ACCIDENT DOSE CALCULATIONS

Time Period	Control Room (sec/m ³)		Site Boundary (sec/m ³)	LPZ Boundary (sec/m ³)
<u>Top of Stack Releases</u> <u>(LOCA & CRDA)</u>	U1 Intake	Unit 3 Intake		
0-0.5 hrs*	3.40E-5	3.02E-5	2.35E-5	1.26E-5
0.5-2 hrs	9.08E-13	1.41E-7	1.19E-6	1.13E-6
2-8 hrs	3.41E-13	4.50E-8		5.75E-7
8-24 hrs	2.09E-13	2.54E-8		4.10E-7
1-4 days	7.21E-14	7.36E-9		1.97E-7
4-30 days	1.57E-14	1.24E-9		6.88E-8
<u>Base of Stack Releases</u> <u>(LOCA & CRDA)</u>				
0-2 hrs	2.00E-4	8.60E-5	2.62E-4	1.31E-4
2-8 hrs	1.28E-4	6.46E-5		6.61E-5
8-24 hrs	5.72E-5	2.80E-5		4.69E-5
1-4 days	4.05E-5	2.00E-5		2.23E-5
4-30 days	3.09E-5	1.53E-5		7.96E-6

BFN-27

Table 14.6-8

(Sheet 2)

VALUES FOR X/Q FOR ACCIDENT DOSE CALCULATIONS

Time Period		Control Room (sec/m ³)	Site Boundary (sec/m ³)	LPZ Boundary (sec/m ³)
<u>Refueling Vent Releases</u> <u>(FHA and LOCA) ****</u>	U1 Intake	Unit 3 Intake		
0-2 hrs	4.60E-4	**	Not Used	Not Used
2-8 hrs	Not Used	**		Not Used
8-24 hrs	1.57E-4	**		4.69E-5
1-4 days	1.12E-4	**		2.23E-5
4-30 days	7.90E-5	**		7.96E-6

**** Control room 0-2 hr for FHA only; values 8 hr+ for control room and LPZ Boundary used as surrogate for HCVS release

Turbine Building Exhaust
Release
(MSLB - EAB/LPZ; Post-LOCA
MSIV Leakage - Unit 1 Only)

0-2 hrs	3.22E-4	**	2.62E-4	1.31E-4
2-8 hrs	2.77E-4	**		6.61E-5
8-24 hrs	1.31E-4	**		4.69E-5
1-4 days	7.91E-5	**		2.23E-5
4-30 days	6.10E-5	**		7.96E-6

**Bounded by the Unit 1 Intake

Turbine Building Roof Ventilators
Release
(Post LOCA MSIV Leakage Units
2/3 Only)

0-2 hrs	***	2.17E-4	2.62E-4	1.31E-4
2-8 hrs	***	1.64E-4		6.61E-5
8-24 hrs	***	7.89E-5		4.69E-5
1-4 days	***	4.33E-5		2.23E-5
4-30 days	***	3.35E-5		7.96E-6

***Bounded by the Unit 3 Intake

BFN-27

Table 14.6-9

(Deleted by Amendment 19)