Entergy

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2CAN020206

February 25, 2002

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: Arkansas Nuclear One, Unit 2
Docket No. 50-368
Supplement to Amendment Request
Response to NRC Request for Additional Information on ANO-2
Pressure Temperature Limits

REFERENCES:

1. Entergy Letter dated October 30, 2001 (2CAN100101), "Proposed Technical Specification Change Request Regarding Revised ANO-2 Pressure/Temperature and Low Temperature Overpressure Protection Limits for 32 Effective Full Power Years"

2. BAW-2405, "Appendix G Pressure-Temperature Limits for 32 EFPY, Using ASME Code Cases for ANO-2", September 2001 [Enclosure 1 to Entergy letter dated October 30, 2001]

Dear Sir or Madam:

By letter dated October 30, 2001 (Reference 1), Entergy Operations, Inc. (Entergy) proposed a change to the Arkansas Nuclear One, Unit 2 (ANO-2) Technical Specifications (TSs) 3.4.9, Pressure/Temperature Limits and TS 3.4.12; Low Temperature Overpressure Protection (LTOP) Limits. The primary change being requested was to update the existing pressure/temperature (P/T) limits from 21 to 32 effective full power years (EFPY) and to include additional restrictions in the LTOP technical specifications.

Based on discussions between Entergy and Mr. Matt Mitchell of your staff, a Request for Additional Information (RAI) was received from the NRC on January 10, 2002. Entergy's proposed response to the RAI was discussed with Mr. Mitchell on February 1, 2002 and is contained in Attachment 1 of this letter.

In addition, Attachment 2 contains two errata to BAW-2405 (Reference 2). The revised pages involve Page 7-5 (containing Table 7-2) and Page 7-15 (containing Table 7-6) which contain data for the ANO Unit 2 Cooldown Composite Pressure-Temperature (P/T) limits. The revised pages correct a typographical error in the reported value of the

allowable pressure at the 195°F fluid temperature. On Table 7-2, the allowable pressure value has been corrected from 2700 psig to 2616 psig and on Table 7-6, the allowable pressure value has been corrected from 2715 psia to 2631 psia. Since the correction in the composite cooldown data occurs at pressure values beyond the P/T curve allowable pressure of 2500 psia, the proposed TS composite cooldown P/T limit curve (TS Figure 3.4-2B) is unaffected.

If you have any questions or require additional information, please contact Steve Bennett at 479-858-4626.

I declare under penalty of perjury that the foregoing is true and correct. Executed on February 25, 2002.

Sincerely,

Glenn R. Ashley
Manager, Licensing

GRA/sab

Attachments:
1. Response to Request For Additional Information
2. Errata to BAW-2405 Tables 7-2 and 7-6

cc: Mr. Ellis W. Merschoff
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U. S. Nuclear Regulatory Commission
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NRC Senior Resident Inspector
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U. S. Nuclear Regulatory Commission
Attn: Mr. Thomas W. Alexion MS O-7D1
Washington, DC 20555-0001

Mr. Bernard R. Bevill
Director Division of Radiation
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**Response to Request for Additional Information Related to
ANO-2 Low Temperature Overpressure Protection**

Question 1:

(1) For the data points in Table 7-1 and Table 7-2 of report BAW-2405 related to the 80°F/hr ramp heatup curve and composite cooldown curve (see ANO-2 Technical Specification Figures 3.4-2A and 3.4-2B), provide the following:

a. the calculated crack tip stress intensity due to membrane (pressure) loading (i.e., K_{IM}).

b. the calculated crack tip stress intensity due to thermal loading (i.e., K_{IT}).

c. the RPV metal temperature at the 1/4T and 3/4T depths through the RPV wall.

d. the calculated material fracture toughness (K_{IC}) at the 1/4T and 3/4T depths.

e. for the cooldown curve, identify which of the transients (shown in Figures 5-2, 5-3, 5-4, and 5-5 of BAW-2405) produces the data point represented in the composite curve.

ANO Response:

Supplemental data addressing the requested information for the ANO-2 Ramp Heatup P/T Limits at 80°F/hr and the Cooldown Composite P/T Limits (BAW-2405 Table 7-1 and Table 7-2) is provided below.

Supplemental Information for BAW-2405 Table 7-1
ANO-2 Ramp Heatup P/T Limits at 80° F/hr

Temp. Range	Controlling P/T Limit Region
50 - 150	Closure Head
155 - 240	3/4T Beltline
245 - 560	Outlet Nozzle

FLUID TEMP. (F)	TEMP. 1/4T (F)	TEMP. 3/4T (F)	K_{Ic} 1/4T ksi√in	K_{Ic} 3/4T ksi√in	K_{Im} ksi√in	K_{It} ksi√in	Beltline or Nozzle Region
155	132.5	113.4	63.8	60.9	26.0	8.8	3/4T Beltline
160	137.3	118.1	66.9	63.6	27.4	8.9	3/4T Beltline
165	142.1	122.7	70.3	66.5	28.8	8.9	3/4T Beltline
170	147.0	127.4	74.1	69.8	30.4	9.0	3/4T Beltline
175	151.9	132.2	78.3	73.5	32.2	9.1	3/4T Beltline
180	156.8	136.9	82.9	77.5	34.2	9.1	3/4T Beltline
185	161.6	141.7	87.9	81.9	36.3	9.2	3/4T Beltline
190	166.5	146.5	93.6	86.8	38.8	9.2	3/4T Beltline
195	171.4	151.3	99.9	92.3	41.5	9.3	3/4T Beltline
200	176.3	156.2	106.8	98.2	44.5	9.3	3/4T Beltline
205	181.2	160.9	114.3	104.7	47.7	9.3	3/4T Beltline
210	186.1	165.8	122.7	112.1	51.4	9.4	3/4T Beltline
215	191.1	170.7	132.0	120.2	55.4	9.4	3/4T Beltline
220	196.0	175.6	142.2	129.1	59.8	9.4	3/4T Beltline
225	200.9	180.4	153.4	138.8	64.7	9.5	3/4T Beltline
230	205.9	185.3	166.0	149.7	70.1	9.5	3/4T Beltline
235	210.8	190.2	179.9	161.7	76.1	9.5	3/4T Beltline
240	215.8	195.2	195.2	175.0	82.7	9.5	3/4T Beltline
245	205.9	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
250	210.8	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
255	215.6	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
260	220.5	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
265	225.2	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
270	230.1	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
275	235.0	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
280	239.9	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
285	244.7	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
290	249.6	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
295	254.5	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
300	259.4	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
305	264.2	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
310	269.1	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
315	274.0	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
320	278.9	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
325	283.8	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
330	288.7	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
335	293.6	n/a	200.0	n/a	100.0	0.0	Outlet nozzle

FLUID TEMP. (F)	TEMP. 1/4T (F)	TEMP. 3/4T (F)	K_{Ic} 1/4T ksi√in	K_{Ic} 3/4T ksi√in	K_{Im} ksi√in	K_{It} ksi√in	Beltline or Nozzle Region[1]
340	298.6	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
345	303.4	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
350	308.3	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
355	313.3	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
360	318.2	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
365	323.1	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
370	328.0	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
375	332.9	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
380	337.9	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
385	342.7	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
390	347.7	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
395	352.6	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
400	357.5	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
405	362.4	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
410	367.3	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
415	372.3	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
420	377.2	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
425	382.0	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
430	387.0	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
435	391.9	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
440	396.8	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
445	401.7	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
450	406.6	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
455	411.5	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
460	416.4	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
465	421.3	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
470	426.2	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
475	431.1	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
480	436.0	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
485	440.9	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
490	445.8	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
495	450.7	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
500	455.6	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
505	460.5	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
510	465.4	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
515	470.3	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
520	475.3	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
525	480.1	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
530	485.0	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
535	489.8	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
540	494.7	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
545	499.7	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
550	504.6	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
555	509.4	n/a	200.0	n/a	100.0	0.0	Outlet nozzle
560	514.3	n/a	200.0	n/a	100.0	0.0	Outlet nozzle

Supplemental Information for BAW-2405 Table 7-2

ANO-2 Cooldown Composite P/T Limits

Temp. Range	Controlling Transient	BAW-2405 Figure No.	Controlling P/T Limit Region
50 - 150	n/a	n/a	Closure Head
155 - 195	Ramp Cooldown, Set 2	5-4	RV Beltline
200 - 560	Ramp Cooldown, Set 1	5-2	Outlet Nozzle

FLUID TEMP. (F)	TEMP. 1/4T (F)	TEMP. 3/4T (F)	K_{Ic} 1/4T ksi√in	K_{Ic} 3/4T ksi√in	K_{Ic} SS[1] ksi√in	K_{Im} ksi√in	K_{It} ksi√in	Beltline or Nozzle Region	Transient or Steady State
155	176.1	194.7	106.4	173.9	81.5	40.6	0	1/4T Beltline	Steady State
160	181.6	200.8	115.0	191.9	86.6	43.1	0	1/4T Beltline	Steady State
165	187.2	207.0	124.7	200.0	92.2	45.9	0	1/4T Beltline	Steady State
170	192.9	213.5	135.8	200.0	98.4	49.0	0	1/4T Beltline	Steady State
175	198.8	220.2	148.5	200.0	105.3	52.4	0	1/4T Beltline	Steady State
180	204.8	227.2	163.2	200.0	112.9	56.2	0	1/4T Beltline	Steady State
185	210.9	234.6	180.2	200.0	121.2	60.3	0	1/4T Beltline	Steady State
190	217.3	242.4	200.0	200.0	130.5	64.9	0	1/4T Beltline	Steady State
195	224.1	250.5	200.0	200.0	140.7	70.0	0	1/4T Beltline	Steady State
200	255.1	n/a	200.0	n/a	n/a	82.9	34.1	Outlet nozzle	Transient
205	259.2	n/a	200.0	n/a	n/a	83.0	34.1	Outlet nozzle	Transient
210	264.3	n/a	200.0	n/a	n/a	82.9	34.2	Outlet nozzle	Transient
215	269.3	n/a	200.0	n/a	n/a	82.9	34.2	Outlet nozzle	Transient
220	274.3	n/a	200.0	n/a	n/a	82.9	34.2	Outlet nozzle	Transient
225	279.4	n/a	200.0	n/a	n/a	82.9	34.2	Outlet nozzle	Transient
230	284.4	n/a	200.0	n/a	n/a	82.9	34.2	Outlet nozzle	Transient
235	289.4	n/a	200.0	n/a	n/a	82.9	34.2	Outlet nozzle	Transient
240	294.5	n/a	200.0	n/a	n/a	82.9	34.2	Outlet nozzle	Transient
245	299.5	n/a	200.0	n/a	n/a	82.9	34.2	Outlet nozzle	Transient
250	304.5	n/a	200.0	n/a	n/a	82.9	34.2	Outlet nozzle	Transient
255	309.5	n/a	200.0	n/a	n/a	82.9	34.2	Outlet nozzle	Transient
260	314.5	n/a	200.0	n/a	n/a	82.9	34.2	Outlet nozzle	Transient
265	319.4	n/a	200.0	n/a	n/a	82.9	34.2	Outlet nozzle	Transient
270	324.4	n/a	200.0	n/a	n/a	82.9	34.2	Outlet nozzle	Transient
275	329.4	n/a	200.0	n/a	n/a	83.0	34.1	Outlet nozzle	Transient
280	334.3	n/a	200.0	n/a	n/a	83.0	34.1	Outlet nozzle	Transient
285	339.3	n/a	200.0	n/a	n/a	83.0	34.0	Outlet nozzle	Transient
290	344.2	n/a	200.0	n/a	n/a	83.0	34.0	Outlet nozzle	Transient
295	349.2	n/a	200.0	n/a	n/a	83.1	33.9	Outlet nozzle	Transient
300	354.1	n/a	200.0	n/a	n/a	83.1	33.8	Outlet nozzle	Transient
305	359.0	n/a	200.0	n/a	n/a	83.2	33.7	Outlet nozzle	Transient
310	363.9	n/a	200.0	n/a	n/a	83.2	33.6	Outlet nozzle	Transient
315	368.8	n/a	200.0	n/a	n/a	83.3	33.5	Outlet nozzle	Transient
320	373.6	n/a	200.0	n/a	n/a	83.3	33.4	Outlet nozzle	Transient
325	378.5	n/a	200.0	n/a	n/a	83.4	33.2	Outlet nozzle	Transient
330	383.3	n/a	200.0	n/a	n/a	83.5	33.1	Outlet nozzle	Transient
335	388.2	n/a	200.0	n/a	n/a	83.6	32.9	Outlet nozzle	Transient
340	393.0	n/a	200.0	n/a	n/a	83.6	32.8	Outlet nozzle	Transient

FLUID TEMP. (F)	TEMP. 1/4T (F)	TEMP. 3/4T (F)	K_{Ic} 1/4T ksi√in	K_{Ic} 3/4T ksi√in	K_{Ic} SS[1] ksi√in	K_{Im} ksi√in	K_{It} ksi√in	Beltline or Nozzle Region	Transient or Steady State
345	397.7	n/a	200.0	n/a	n/a	83.7	32.6	Outlet nozzle	Transient
350	402.5	n/a	200.0	n/a	n/a	83.8	32.4	Outlet nozzle	Transient
355	407.2	n/a	200.0	n/a	n/a	83.9	32.2	Outlet nozzle	Transient
360	412.0	n/a	200.0	n/a	n/a	84.0	32.0	Outlet nozzle	Transient
365	416.7	n/a	200.0	n/a	n/a	84.1	31.8	Outlet nozzle	Transient
370	421.3	n/a	200.0	n/a	n/a	84.3	31.5	Outlet nozzle	Transient
375	426.0	n/a	200.0	n/a	n/a	84.4	31.3	Outlet nozzle	Transient
380	430.6	n/a	200.0	n/a	n/a	84.5	31.1	Outlet nozzle	Transient
385	435.2	n/a	200.0	n/a	n/a	84.6	30.8	Outlet nozzle	Transient
390	439.8	n/a	200.0	n/a	n/a	84.8	30.5	Outlet nozzle	Transient
395	444.3	n/a	200.0	n/a	n/a	85.0	30.1	Outlet nozzle	Transient
400	448.8	n/a	200.0	n/a	n/a	85.2	29.7	Outlet nozzle	Transient
405	453.3	n/a	200.0	n/a	n/a	85.4	29.3	Outlet nozzle	Transient
410	457.8	n/a	200.0	n/a	n/a	85.6	28.9	Outlet nozzle	Transient
415	462.2	n/a	200.0	n/a	n/a	85.8	28.5	Outlet nozzle	Transient
420	466.6	n/a	200.0	n/a	n/a	86.0	28.0	Outlet nozzle	Transient
425	470.9	n/a	200.0	n/a	n/a	86.3	27.5	Outlet nozzle	Transient
430	475.2	n/a	200.0	n/a	n/a	86.5	27.0	Outlet nozzle	Transient
435	479.5	n/a	200.0	n/a	n/a	86.8	26.4	Outlet nozzle	Transient
440	483.7	n/a	200.0	n/a	n/a	87.1	25.9	Outlet nozzle	Transient
445	487.9	n/a	200.0	n/a	n/a	87.4	25.2	Outlet nozzle	Transient
450	492.0	n/a	200.0	n/a	n/a	87.7	24.6	Outlet nozzle	Transient
455	496.0	n/a	200.0	n/a	n/a	88.1	23.9	Outlet nozzle	Transient
460	500.1	n/a	200.0	n/a	n/a	88.5	23.1	Outlet nozzle	Transient
465	504.0	n/a	200.0	n/a	n/a	88.8	22.4	Outlet nozzle	Transient
470	507.9	n/a	200.0	n/a	n/a	89.3	21.5	Outlet nozzle	Transient
475	511.8	n/a	200.0	n/a	n/a	89.7	20.7	Outlet nozzle	Transient
480	515.6	n/a	200.0	n/a	n/a	90.1	19.8	Outlet nozzle	Transient
485	519.3	n/a	200.0	n/a	n/a	90.6	18.8	Outlet nozzle	Transient
490	522.9	n/a	200.0	n/a	n/a	91.1	17.8	Outlet nozzle	Transient
495	526.5	n/a	200.0	n/a	n/a	91.6	16.8	Outlet nozzle	Transient
500	530.0	n/a	200.0	n/a	n/a	92.2	15.7	Outlet nozzle	Transient
505	533.4	n/a	200.0	n/a	n/a	92.8	14.5	Outlet nozzle	Transient
510	536.8	n/a	200.0	n/a	n/a	93.4	13.3	Outlet nozzle	Transient
515	540.0	n/a	200.0	n/a	n/a	94.0	12.1	Outlet nozzle	Transient
520	543.1	n/a	200.0	n/a	n/a	94.7	10.7	Outlet nozzle	Transient
525	546.2	n/a	200.0	n/a	n/a	95.3	9.4	Outlet nozzle	Transient
530	549.0	n/a	200.0	n/a	n/a	96.0	8.0	Outlet nozzle	Transient
535	551.8	n/a	200.0	n/a	n/a	96.8	6.5	Outlet nozzle	Transient
540	554.3	n/a	200.0	n/a	n/a	97.6	4.9	Outlet nozzle	Transient
545	556.5	n/a	200.0	n/a	n/a	98.3	3.4	Outlet nozzle	Transient
550	558.4	n/a	200.0	n/a	n/a	99.0	2.0	Outlet nozzle	Transient
555	559.7	n/a	200.0	n/a	n/a	99.7	0.7	Outlet nozzle	Transient
560	560.0	n/a	200.0	n/a	n/a	100.0	0.1	Outlet nozzle	Transient

[1] SS = Steady State

Question 2:

In order to update the NRC staff's Reactor Pressure Vessel Integrity Database, identify which method of evaluation (use of the chemistry factor tables from 10CFR50.61 or use of plant-specific surveillance data) from Table 4-1 of report BAW-2405 is being utilized by Entergy Operations, Inc. for each RPV` material to establish the licensing basis for ANO-2.

ANO Response:

10CFR50.61 states that the plant specific surveillance materials are to be used in calculating RT_{PTS}, if credible. The ANO-2 surveillance capsule data were used for plate C-8009-3 and for the welds having a weld heat number 10120. The ANO-2 surveillance chemistry factors for calculating RT_{PTS} are considered valid for these materials and are shown in the lower portion of Table 4-1 in BAW-2405. The RT_{PTS} values calculated using the surveillance data are more conservative than those calculated using the 10CFR50.61 tables. Therefore, the table below has been modified (based on Table 4-1 from BAW-2405) to remove the values calculated from the tables in 10CFR50.61.

ANO-2 Pressurized Thermal Shock Reference Temperatures Applicable to 32 EFPY with Power Uprate (from Table 4-1 of Report BAW-2405 dated September 2001)

Material Description				Chemical Composition									
Reactor Vessel Beltline Location	Matl. Ident.	Heat Number	Base Metal / Flux Type	Cu wt%	Ni wt%	Initial RT_{NDT}	Chemistry Factor	Vessel/Clad Interface Fluence at 32 EFPY, n/cm^{2} (a)	Fluence Factor	ΔRT_{PTS}, F	Margin F	RT_{PTS}, F	Screening Criteria
RT_{PTS} Calculation Per 10 CFR 50.61 Using Tables													
Inter./Lower Shell Girth Weld	9-203	83650	Linde 0091	0.045	0.087	-10	34.1	3.613E+19	1.334	45.5	45.6	81.1	300
Intermediate Shell Plate	C-8009-1	C8161-3	SA-533B Cl.1	0.098	0.605	-26	63.6	3.613E+19	1.334	84.8	34.0	92.8	270
Intermediate Shell Plate	C-8009-2	C8161-1	SA-533B Cl.1	0.085	0.600	0	54.5	3.613E+19	1.334	72.7	34.0	106.7	270
Lower Shell Plate	C-8010-1	C8161-2	SA-533B Cl.1	0.085	0.585	12	54.5	3.627E+19	1.335	72.8	34.0	[118.8]	270
Lower Shell Plate	C-8010-2	B2545-1	SA-533B Cl.1	0.083	0.668	-28	53.1	3.627E+19	1.335	70.9	34.0	76.9	270
Lower Shell Plate	C-8010-3	B2545-2	SA-533B Cl.1	0.080	0.653	-30	51.0	3.627E+19	1.335	68.1	34.0	72.1	270
RT_{PTS} Calculation Per 10 CFR 50.61 Using Surveillance Data													
Inter. Shell Long. Weld	2-203 A	10120	Linde 0091	0.046	0.082	-56	14.9	3.432E+19	1.322	19.7	39.3	3.0	270
Inter. Shell Long. Weld	2-203 B	10120	Linde 0091	0.046	0.082	-56	14.9	2.646E+19	1.260	18.8	38.9	1.7	270
Inter. Shell Long. Weld	2-203 C	10120	Linde 0091	0.046	0.082	-56	14.9	2.646E+19	1.260	18.8	38.9	1.7	270
Lower Shell Long. Weld	3-203 A	10120	Linde 0091	0.046	0.082	-56	14.9	3.446E+19	1.323	19.7	39.3	3.0	270
Lower Shell Long. Weld	3-203 B	10120	Linde 0091	0.046	0.082	-56	14.9	2.657E+19	1.261	18.8	38.9	1.7	270
Lower Shell Long. Weld	3-203 C	10120	Linde 0091	0.046	0.082	-56	14.9	2.657E+19	1.261	18.8	38.9	1.7	270
Intermediate Shell Plate	C-8009-3	C8182-2	SA-533B Cl.1	0.096	0.580	0	40.7	3.613E+19	1.334	54.3	17.0	71.3	270

(a) The inside surface fluence is the calculated value at the clad – base metal interface of the reactor vessel; attenuation through the cladding is based on deterministic methods.

[ ] – Limiting reactor vessel beltline material in accordance with 10CFR50.61

Erratum to BAW-2405

Table 7-2. ANO-2 Cooldown Composite P/T Limits (psig)

Fluid Temp. (F)	Composite Cooldown Limit (psig)	Fluid Temp. (F)	Composite Cooldown Limit (psig)	Fluid Temp. (F)	Composite Cooldown Limit (psig)
50	593	265	2699	485	2952
55	593	270	2700	490	2969
60	593	275	2700	495	2986
65	593	280	2701	500	3004
70	593	285	2702	505	3023
75	593	290	2703	510	3043
80	593	295	2704	515	3064
85	593	300	2706	520	3086
90	593	305	2707	525	3108
95	593	310	2709	530	3132
100	593	315	2710	535	3156
105	593	320	2712	540	3181
110	593	325	2716	545	3206
115	593	330	2718	550	3231
120	593	335	2720	555	3252
125	593	340	2723	560	3263
130	593	345	2726		
135	593	350	2729		
140	593	355	2732		
145	593	360	2736		
150	593	365	2739		
150	1410	370	2743		
155	1497	375	2747		
160	1593	380	2750		
165	1699	385	2755		
170	1816	390	2761		
175	1946	395	2767		
180	2089	400	2773		
185	2247	405	2779		
190	2422	410	2786		
195	2616	415	2794		
200	2700	420	2801		
205	2700	425	2810		
210	2700	430	2818		
215	2700	435	2828		
220	2699	440	2837		
225	2700	445	2847		
230	2699	450	2858		
235	2699	455	2870		
240	2699	460	2882		
245	2699	465	2894		
250	2699	470	2908		
255	2699	475	2922		
260	2699	480	2937		

Erratum to BAW-2405

Table 7-6. ANO-2 Cooldown Composite P/T Limits (psia)

Fluid Temp. (F)	Composite Cooldown Limit (psia)	Fluid Temp. (F)	Composite Cooldown Limit (psia)	Fluid Temp. (F)	Composite Cooldown Limit (psia)
50	608	265	2714	485	2967
55	608	270	2715	490	2984
60	608	275	2715	495	3001
65	608	280	2716	500	3019
70	608	285	2717	505	3038
75	608	290	2718	510	3058
80	608	295	2719	515	3079
85	608	300	2721	520	3101
90	608	305	2722	525	3123
95	608	310	2724	530	3147
100	608	315	2725	535	3171
105	608	320	2727	540	3196
110	608	325	2731	545	3221
115	608	330	2733	550	3246
120	608	335	2735	555	3267
125	608	340	2738	560	3278
130	608	345	2741		
135	608	350	2744		
140	608	355	2747		
145	608	360	2751		
150	608	365	2754		
150	1425	370	2758		
155	1512	375	2762		
160	1608	380	2765		
165	1714	385	2770		
170	1831	390	2776		
175	1961	395	2782		
180	2104	400	2788		
185	2262	405	2794		
190	2437	410	2801		
195	2631	415	2809		
200	2715	420	2816		
205	2715	425	2825		
210	2715	430	2833		
215	2715	435	2843		
220	2714	440	2852		
225	2715	445	2862		
230	2714	450	2873		
235	2714	455	2885		
240	2714	460	2897		
245	2714	465	2909		
250	2714	470	2923		
255	2714	475	2937		
260	2714	480	2952		