

LIMITING CONDITION FOR OPERATION

- c. During leakage and hydrostatic testing, the reactor vessel temperature and pressure shall satisfy the requirements of Figure 3.2.2.e, if the core is not critical. During reactor vessel heatup and cooldown for the purpose of leakage and hydrostatic testing, the reactor vessel temperature and pressure shall satisfy the requirements of Figures 3.2.2.a and 3.2.2.b for non-critical heatup and cooldown, respectively.
- d. The reactor vessel head bolting studs shall not be under tension unless the temperature of the vessel head flange and the head are equal to or greater than 100°F.

SURVEILLANCE REQUIREMENT

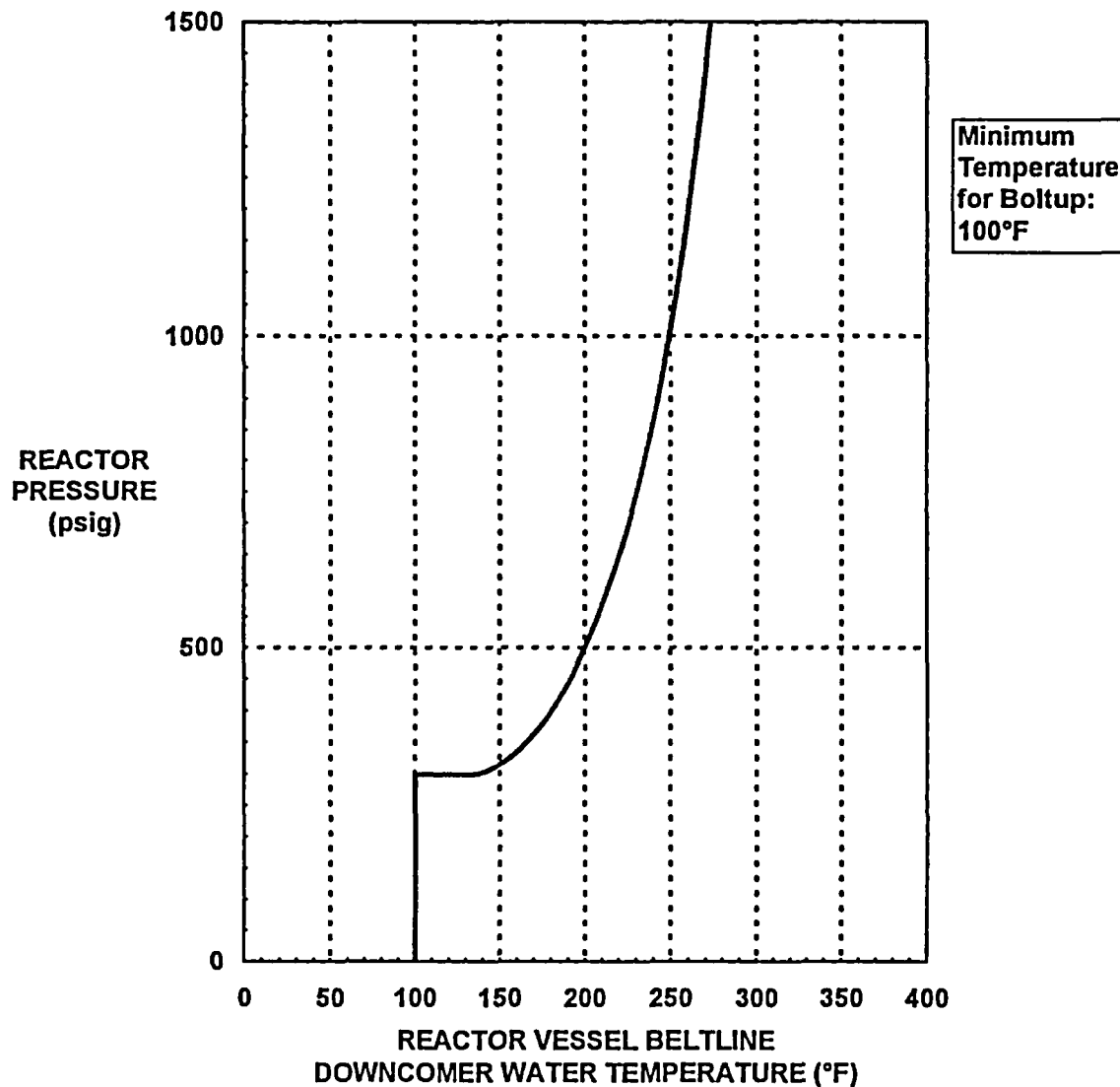
In order to generate additional plant-specific data, a capsule containing irradiated and unirradiated material will be re-inserted at the B capsule location. Re-insertion capsules have already been installed at the A and C locations. A prime (') is used to indicate a re-insertion capsule. The withdrawal schedule for the re-insertion capsules is as follows:

Fourth capsule (A') - 24 EFPY

Fifth capsule (C') - 32 EFPY

Sixth capsule (B') - 40 EFPY

HEATUP - CORE NOT CRITICAL



(reactor vessel beltline downcomer water temperature is measured at recirculation loop suction)
(instrument uncertainties have been included in this figure)

FIGURE 3.2.2.a

MINIMUM BELTLINE DOWNCOMER WATER TEMPERATURE FOR
PRESSURIZATION DURING HEATUP AND LOW-POWER PHYSICS
TESTS (CORE NOT CRITICAL) (HEATING RATE $\leq 100^{\circ}\text{F}/\text{HR}$)
FOR UP TO 28 EFFECTIVE FULL POWER YEARS OF OPERATION

**LIMIT FOR NON-CRITICAL OPERATION
HEATUP AT UP TO 100°F/HR**

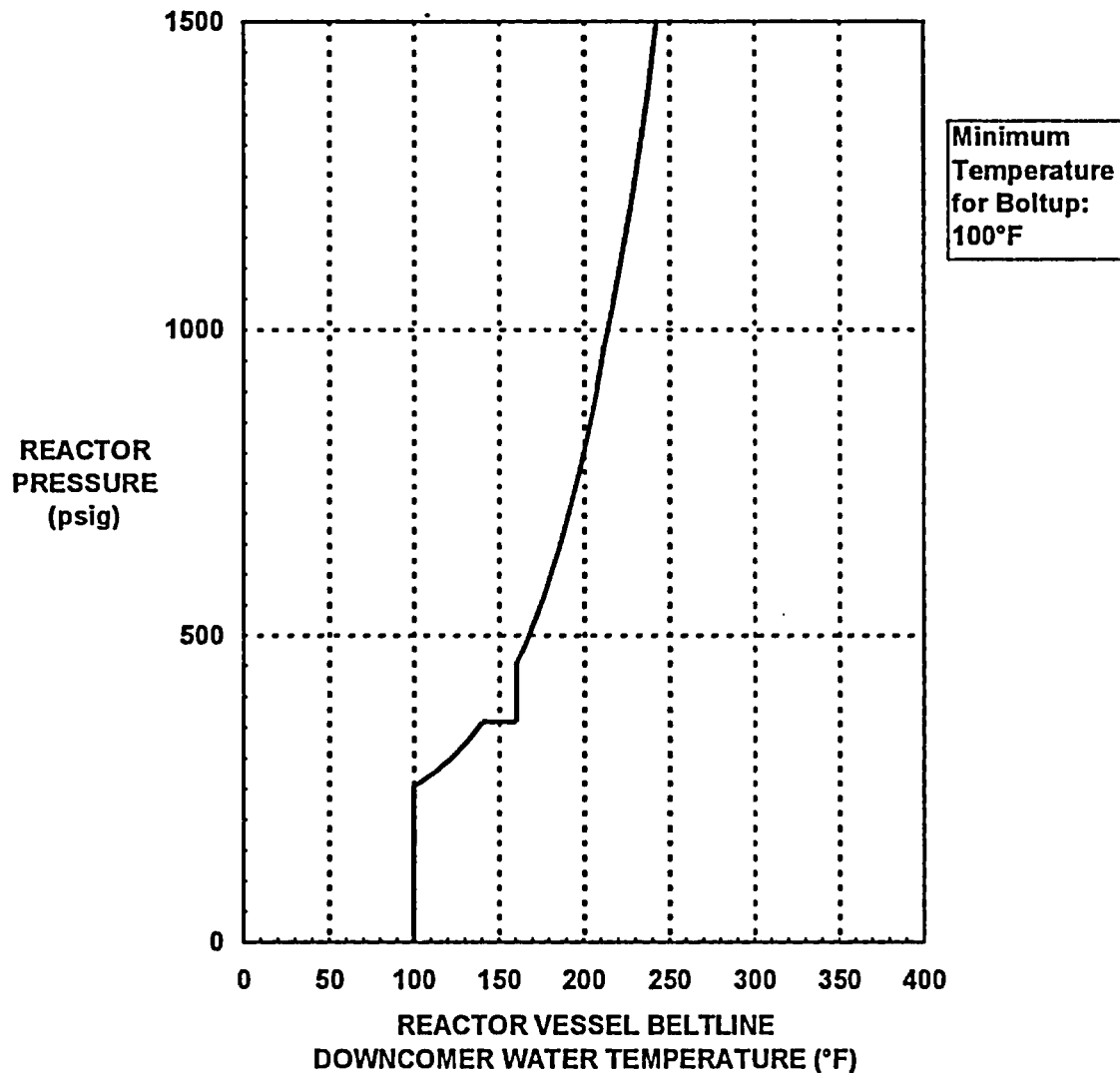
REACTOR PRESSURE (psig) IN TOP DOME	REACTOR VESSEL BELTLINE DOWNCOMER WATER TEMPERATURE (°F)
0	100
298	100
298	102
298	107
298	112
298	117
298	122
298	127
298	132
300	137
304	142
311	147
319	152
329	157
340	162
354	167
369	172
387	177
406	182
406	182
429	187
454	192
483	197
515	202
547	207
582	212
622	217
665	222
713	227
767	232
840	238
840	238
895	242
969	247
1050	252
1140	257

(reactor vessel beltline downcomer water temperature is measured at recirculation loop suction)
(instrument uncertainties have been included in this table)

TABLE 3.2.2.a

**MINIMUM TEMPERATURE FOR PRESSURIZATION DURING
HEAT-UP (CORE NOT CRITICAL) (HEATING RATE ≤ 100°F/HR)
FOR UP TO 28 EFFECTIVE FULL POWER YEARS
OF CORE OPERATION**

COOLDOWN - CORE NOT CRITICAL



(reactor vessel beltline downcomer water temperature is measured at recirculation loop suction)
(instrument uncertainties have been included in this figure)

FIGURE 3.2.2.b

MINIMUM BELTLINE DOWNCOMER WATER TEMPERATURE FOR
PRESSURIZATION DURING COOLDOWN AND LOW-POWER PHYSICS
TESTS (CORE NOT CRITICAL) (COOLING RATE $\leq 100^{\circ}\text{F}/\text{HR}$)
FOR UP TO 28 EFFECTIVE FULL POWER YEARS OF OPERATION

**LIMIT FOR NON-CRITICAL OPERATION
COOLDOWN AT UP TO 100°F/HR**

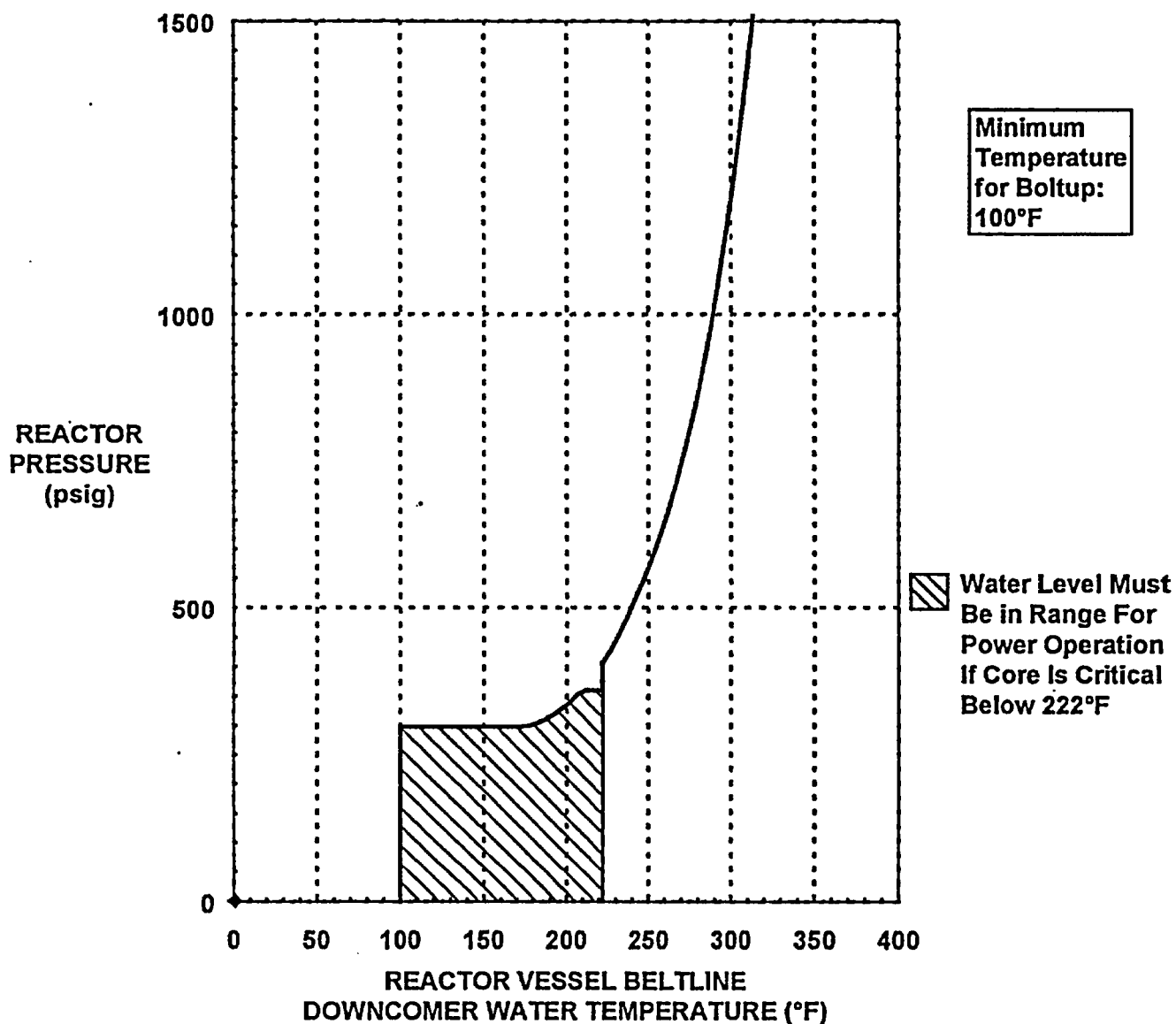
REACTOR PRESSURE (psig) IN TOP DOME	REACTOR VESSEL BELTLINE DOWNCOMER WATER TEMPERATURE (°F)
0	100
205	100
209	100
213	100
218	100
223	100
229	100
235	100
242	100
250	100
254	100
258	102
268	107
278	112
290	117
302	122
316	127
332	132
349	137
360	140
360	160
455	160
471	163
471	163
498	167
532	172
570	177
613	182
659	187
701	192
737	197
777	202
820	207
869	212
922	217
982	222
1047	227
1119	232

(reactor vessel beltline downcomer water temperature is measured at recirculation loop suction)
(instrument uncertainties have been included in this table)

TABLE 3.2.2.b

**MINIMUM TEMPERATURE FOR PRESSURIZATION DURING
COOLDOWN (CORE NOT CRITICAL) (COOLING RATE ≤ 100°F/HR)
FOR UP TO 28 EFFECTIVE FULL POWER YEARS
OF CORE OPERATION**

HEATUP - CORE CRITICAL



(reactor vessel beltline downcomer water temperature is measured at recirculation loop suction)
(instrument uncertainties have been included in this figure)

FIGURE 3.2.2.c

MINIMUM BELTLINE DOWNCOMER WATER TEMPERATURE FOR
PRESSURIZATION DURING CORE OPERATION
(CORE CRITICAL) (HEATING RATE $\leq 100^\circ\text{F}/\text{HR}$) FOR UP TO
28 EFFECTIVE FULL POWER YEARS OF OPERATION

**LIMIT FOR POWER OPERATION (CORE CRITICAL)
HEATUP AT UP TO 100°F/HR**

REACTOR PRESSURE (psig) IN TOP DOME	REACTOR VESSEL BELTLINE DOWNCOMER WATER TEMPERATURE (°F)
0	100
298	100
298	172
300	177
304	182
311	187
319	192
329	197
340	202
354	207
360	212
360	217
360	222 ^a
406	222 ^a
429	227
454	232
483	237
515	242
547	247
582	252
622	257
665	262
713	267
767	272
840	278
840	278
895	282
969	287
1050	292
1140	297

(reactor vessel beltlane downcomer water temperature is measured at recirculation loop suction)

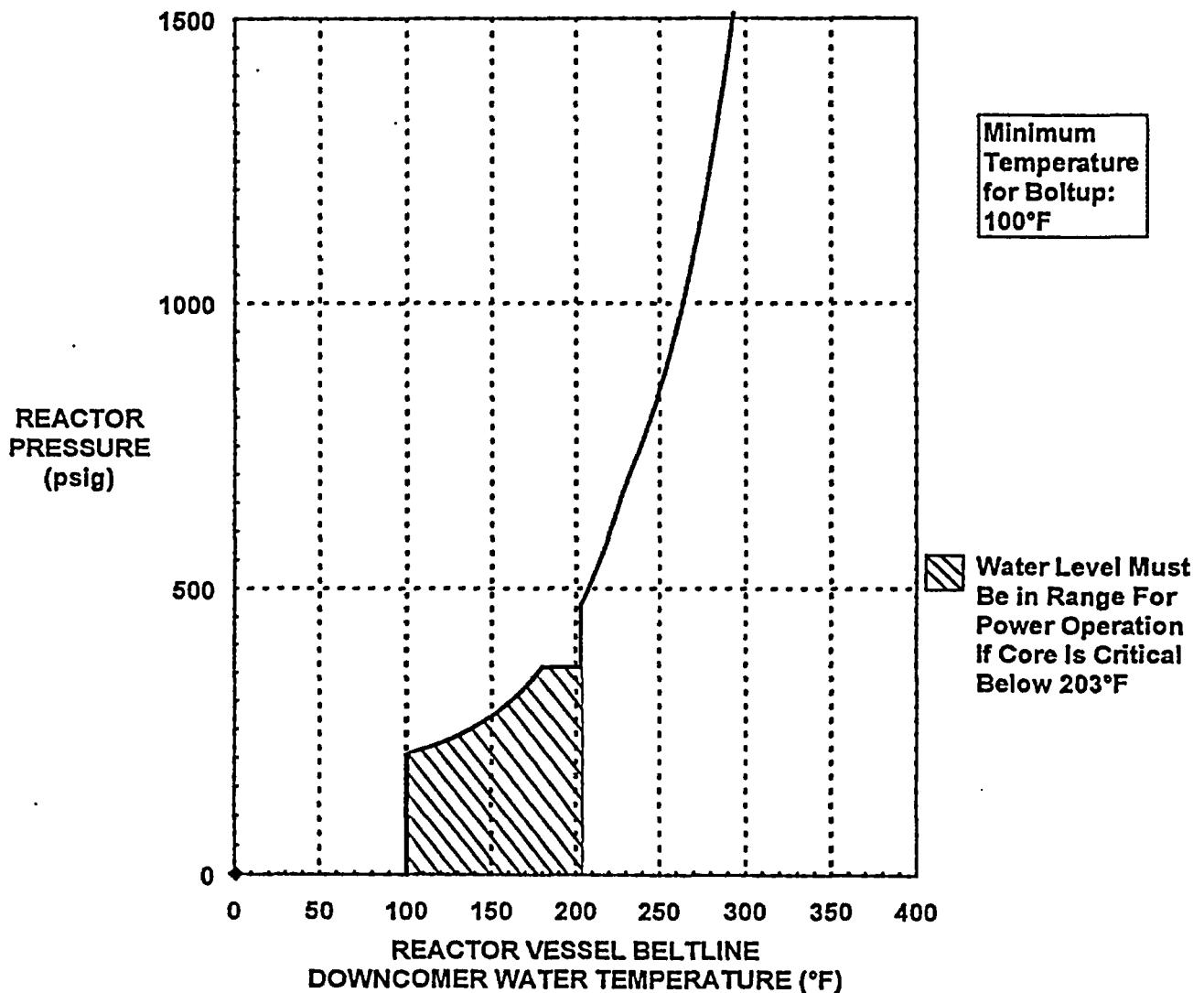
(^awater level must be in range for power operation if core is critical below 222°F)

(instrument uncertainties have been included in this table)

TABLE 3.2.2.c

**MINIMUM TEMPERATURE FOR PRESSURIZATION DURING
HEATUP (CORE CRITICAL) (HEATING RATE ≤ 100°F/HR)
FOR UP TO 28 EFFECTIVE FULL POWER YEARS
OF CORE OPERATION**

COOLDOWN - CORE CRITICAL



(reactor vessel beltline downcomer water temperature is measured at recirculation loop suction)
(instrument uncertainties have been included in this figure)

FIGURE 3.2.2.d

MINIMUM BELTLINE DOWNCOMER WATER TEMPERATURE FOR
PRESSURIZATION DURING CORE OPERATION
(CORE CRITICAL) (COOLING RATE $\leq 100^\circ\text{F}/\text{HR}$) FOR UP TO
28 EFFECTIVE FULL POWER YEARS OF OPERATION

**LIMIT FOR POWER OPERATION (CORE CRITICAL)
COOLING AT UP TO 100°F/HR**

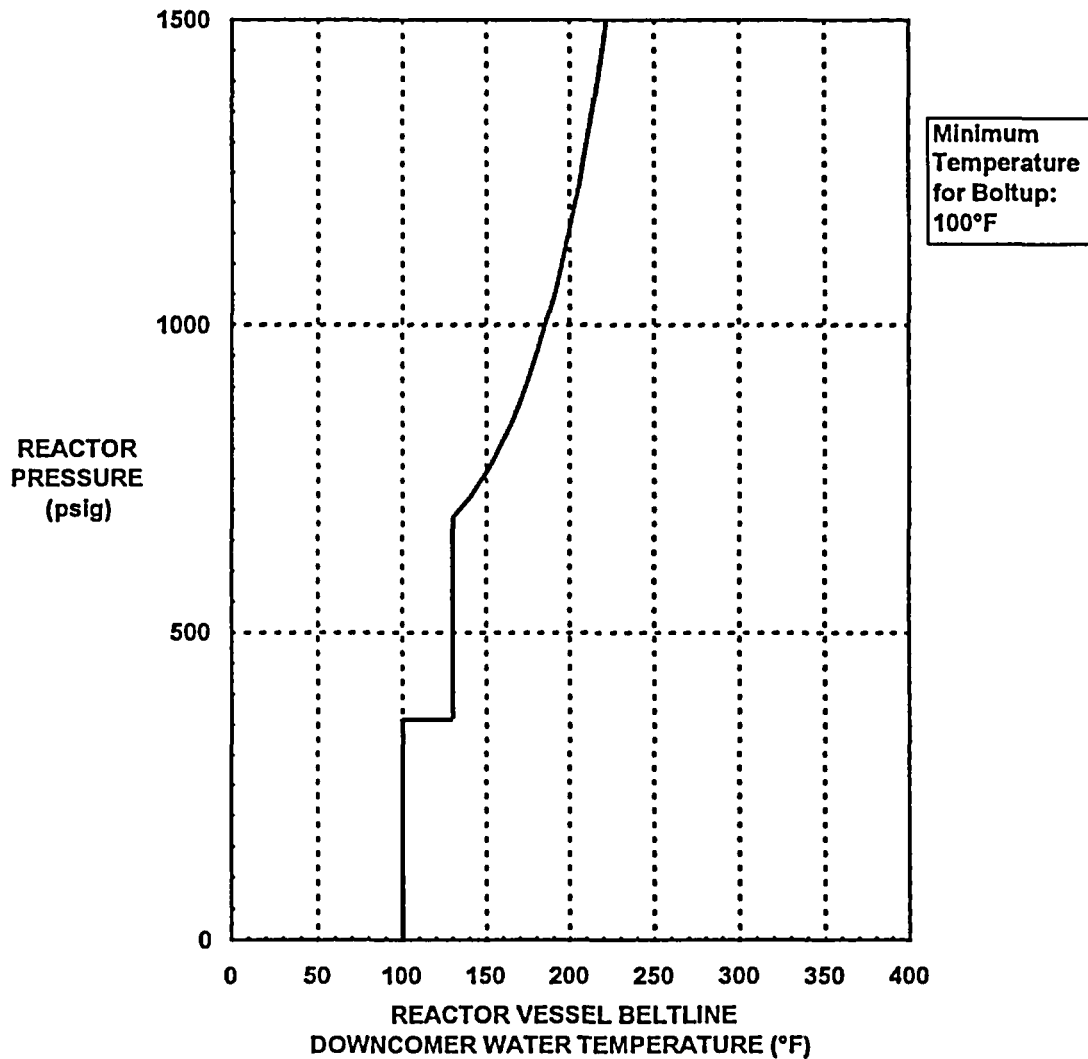
REACTOR PRESSURE (psig) IN TOP DOME	REACTOR VESSEL BELTLINE DOWNCOMER WATER TEMPERATURE (°F)
0	100
205	100
209	102
213	107
218	112
223	117
229	122
235	127
242	132
250	137
254	140
258	142
268	147
278	152
290	157
302	162
316	167
332	172
349	177
360	180
360	200
360	203 ^a
471	203 ^a
498	207
532	212
570	217
613	222
659	227
701	232
737	237
777	242
820	247
869	252
922	257
982	262
1047	267
1119	272
1199	277

(reactor vessel beltline downcomer water temperature is measured at recirculation loop suction)
^awater level must be in range for power operation if core is critical below 203°F)
(instrument uncertainties have been included in this table)

TABLE 3.2.2.d

**MINIMUM TEMPERATURE FOR PRESSURIZATION DURING
COOLDOWN (CORE CRITICAL) (COOLING RATE ≤ 100°F/HR)
FOR UP TO 28 EFFECTIVE FULL POWER YEARS
OF CORE OPERATION**

LEAK/HYDRO TEST - CORE NOT CRITICAL



(reactor vessel beltline downcomer water temperature is measured at recirculation loop suction)
(instrument uncertainties have been included in this figure)

FIGURE 3.2.2.e

MINIMUM BELTLINE DOWNCOMER WATER TEMPERATURE FOR
PRESSURIZATION DURING IN-SERVICE HYDROSTATIC TESTING
AND LEAK TESTING (CORE NOT CRITICAL) FOR UP TO
28 EFFECTIVE FULL POWER YEARS OF OPERATION

**LIMIT FOR IN-SERVICE TEST
(CORE NOT CRITICAL, FUEL IN VESSEL)**

REACTOR PRESSURE (psig) IN TOP DOME	REACTOR VESSEL BELTLINE DOWNCOMER WATER TEMPERATURE (°F)
0	100
360	100
360	130
688	130
704	135
722	140
742	145
764	150
788	155
815	160
844	165
877	170
913	175
953	180
997	185
1046	190
1100	195
1160	200

(reactor vessel beltline downcomer water temperature is measured at recirculation loop suction)
(instrument uncertainties have been included in this table)

TABLE 3.2.2.e

**MINIMUM TEMPERATURE FOR PRESSURIZATION DURING
LEAK/HYDROSTATIC TESTING (CORE NOT CRITICAL)
FOR UP TO 28 EFFECTIVE FULL POWER YEARS
OF CORE OPERATION**

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