

**PVNGS Unit 1 Operating License Page 4**  
**Retyped with Proposed Power Uprate Changes**

(6)(a) Pursuant to an Order of the Nuclear Regulatory Commission dated December 12, 1985, the Public Service Company of New Mexico (PNM) was authorized to transfer a portion of its ownership share in Palo Verde, Unit 1 to certain institutional investors on December 31, 1985, and at the same time has leased back from such purchasers the same interest in the Palo Verde, Unit 1 facility. The term of the lease is to January 15, 2015, subject to a right of renewal. Additional sale and leaseback transactions (for a term expiring on January 15, 2015) of all or a portion of PNM's remaining ownership share in Palo Verde Unit 1 are hereby authorized until June 30, 1987. Any such sale and leaseback transaction is subject to the representations and conditions set forth in the aforementioned applications of October 19, 1985, February 5, 1986, October 16, 1986 and November 26, 1986, and the Commission's Order of December 12, 1985, consenting to such transactions. Specifically, the lessor and anyone else who may acquire an interest under this transaction are prohibited from exercising directly or indirectly any control over the licensees of the Palo Verde Nuclear Generating Station, Unit 1. For purposes of this condition, the limitations in 10 CFR 50.81, "Creditor Regulations," as now in effect and as they may be subsequently amended, are fully applicable to the lessor and any successor in interest to that lessor as long as the license for Palo Verde, Unit 1 remains in effect; this financial transaction shall have no effect on the license for the Palo Verde nuclear facility throughout the term of the license.

(b) Further, the licensees are also required to notify the NRC in writing prior to any change in: (i) the terms or conditions of any lease agreements executed as part of this transaction; (ii) the ANPP Participation Agreement, (iii) the existing property insurance coverage for the Palo Verde nuclear facility, Unit 1 as specified in license counsel's letter of November 26, 1985, and (iv) any action by the lessor or others that may have an adverse effect on the safe operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

Arizona Public Service Company (APS) is authorized to operate the facility at reactor core power levels not in excess of 3876 megawatts thermal (100% power) through operating cycle 12, and 3990 megawatts thermal (100% power) after operating cycle 12, in accordance with the conditions specified herein.

**PVNGS Unit 3 Operating License Page 4**  
**Retyped with Proposed Power Uprate Changes**

(1) Maximum Power Level

Arizona Public Service Company (APS) is authorized to operate the facility at reactor core power levels not in excess of 3876 megawatts thermal (100% power) through operating cycle 13, and 3990 megawatts thermal (100% power) after operating cycle 13, in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 157, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. APS shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan, except where otherwise stated in specific license conditions.

(3) Antitrust Conditions

This license is subject to the antitrust conditions delineated in Appendix C to this license.

(4) Initial Test Program (Section 14, SER and SSER 2)

Deleted

(5) Additional Conditions

Deleted

- D. APS has previously been granted an exemption from Paragraph III.D.2(b)(ii) of Appendix J to 10 CFR Part 50. This exemption was previously granted in Facility Operating License NPF-65 pursuant to 10 CFR 50.12.

With the granting of this exemption, the facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission.

- E. The licensees shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Safeguard Contingency Plan is incorporated into the Physical Security Plan. The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Palo

## 1.1 Definitions (continued)

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RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 3876 Mwt for Unit 1 through operating cycle 12 and Unit 3 through operating cycle 13, and 3990 Mwt for Unit 1 after operating cycle 12, Unit 2, and Unit 3 after operating cycle 13.
REACTOR PROTECTIVE SYSTEM (RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until electrical power to the CEAs drive mechanism is interrupted. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.
SHUTDOWN MARGIN (SDM)	<p>SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming:</p> <ul style="list-style-type: none"><li>a. All full strength CEAs (shutdown and regulating) are fully inserted except for the single CEA of highest reactivity worth, which is assumed to be fully withdrawn. With any full strength CEAs not capable of being fully inserted, the withdrawn reactivity worth of these CEAs must be accounted for in the determination of SDM and</li><li>b. There is no change in part length or part strength CEA position.</li></ul>

RPS Instrumentation – Operating (Before CPC Upgrade)  
3.3.1

Table 3.3.1-1 (page 1 of 3)  
Reactor Protective System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Variable Over Power	1.2	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.6 SR 3.3.1.7 SR 3.3.1.8 SR 3.3.1.9 SR 3.3.1.13	Ceiling $\leq$ 111.0% RTP Band $\leq$ 9.9% RTP Incr. Rate $\leq$ 11.0%/min RTP Decr. Rate $>$ 5%/sec RTP
2. Logarithmic Power Level – High(a)	2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.12 SR 3.3.1.13	$\leq$ 0.011% NRTP
3. Pressurizer Pressure – High	1.2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	$\leq$ 2388 psia
4. Pressurizer Pressure – Low	1.2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.12 SR 3.3.1.13	$\geq$ 1821 psia
5. Containment Pressure – High	1.2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	$\leq$ 3.2 psig
6. Steam Generator #1 Pressure – Low	1.2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	3876 MwT RTP: $\geq$ 890 psia 3990 MwT RTP: $\geq$ 955 psia <sup>(aa)</sup>
7. Steam Generator #2 Pressure – Low	1.2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	3876 MwT RTP: $\geq$ 890 psia 3990 MwT RTP: $\geq$ 955 psia <sup>(aa)</sup>

(continued)

- (a) Trip may be bypassed when logarithmic power is  $>$  1E-4% NRTP. Bypass shall be automatically removed when logarithmic power is  $\leq$  1E-4% NRTP.
- (aa) 1. If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predetermined as-found acceptance criteria band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service. If the as-found instrument channel setpoint is not conservative with respect to the Allowable Value, the channel shall be declared inoperable.
2. The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the UFSAR Trip Setpoint, or within the as left tolerance of a setpoint that is more conservative than the UFSAR Trip Set Point; otherwise the channel shall be declared inoperable. The UFSAR Trip Setpoint and the methodology used to determine 1) the UFSAR Trip Setpoint, 2) the predetermined as found acceptance criteria band, and 3) the as-left setpoint tolerance band are specified in the UFSAR.

# RPS Instrumentation - Operating (After CPC Upgrade)

## 3.3.1

Table 3.3.1-1 (page 1 of 3)  
Reactor Protective System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Variable Over Power	1.2	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.6 SR 3.3.1.7 SR 3.3.1.8 SR 3.3.1.9 SR 3.3.1.13	Ceiling $\leq$ 111.0% RTP Band $\leq$ 9.9% RTP Incr. Rate $\leq$ 11.0%/min RTP Decr. Rate $>$ 5%/sec RTP
2. Logarithmic Power Level - High(a)	2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.12 SR 3.3.1.13	$\leq$ 0.011% N RTP
3. Pressurizer Pressure - High	1.2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	$\leq$ 2388 psia
4. Pressurizer Pressure - Low	1.2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.12 SR 3.3.1.13	$\geq$ 1821 psia
5. Containment Pressure - High	1.2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	$\leq$ 3.2 psig
6. Steam Generator #1 Pressure - Low	1.2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	3876 Mwt RTP: $\geq$ 890 psia 3990 Mwt RTP: $\geq$ 955 psia <sup>(aa)</sup>
7. Steam Generator #2 Pressure - Low	1.2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	3876 Mwt RTP: $\geq$ 890 psia 3990 Mwt RTP: $\geq$ 955 psia <sup>(aa)</sup>

(continued)

- (a) Trip may be bypassed when logarithmic power is  $>$  1E-4% N RTP. Bypass shall be automatically removed when logarithmic power is  $\leq$  1E-4% N RTP.
- (aa) 1. If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predetermined as-found acceptance criteria band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service. If the as-found instrument channel setpoint is not conservative with respect to the Allowable Value, the channel shall be declared inoperable.
2. The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the UFSAR Trip Setpoint, or within the as left tolerance of a setpoint that is more conservative than the UFSAR Trip Set Point; otherwise the channel shall be declared inoperable. The UFSAR Trip Setpoint and the methodology used to determine 1) the UFSAR Trip Setpoint, 2) the predetermined as found acceptance criteria band, and 3) the as-left setpoint tolerance band are specified in the UFSAR.

Table 3.3.2-1  
Reactor Protective System Instrumentation - Shutdown

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALVE
1. Logarithmic Power Level-High <sup>(d)</sup>	3 <sup>(a)</sup> , 4 <sup>(a)</sup> , 5 <sup>(a)</sup>	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.4 SR 3.3.2.5	≤ 0.01% NRTP <sup>(c)</sup>
2. Steam Generator #1 Pressure-Low <sup>(b)</sup>	3 <sup>(a)</sup>	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.5	3876 Mwt RTP: ≥ 890 psia 3990 Mwt RTP: ≥ 955 psia <sup>(e)</sup>
3. Steam Generator #2 Pressure-Low <sup>(b)</sup>	3 <sup>(a)</sup>	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.5	3876 Mwt RTP: ≥ 890 psia 3990 Mwt RTP: ≥ 955 psia <sup>(e)</sup>

- (a) With any Reactor Trip Circuit Breakers (RTCBs) closed and any control element assembly capable of being withdrawn.
- (b) The setpoint may be decreased as steam pressure is reduced, provided the margin between steam pressure and the setpoint is maintained ≤ 200 psig. The setpoint shall be automatically increased to the normal setpoint as steam pressure is increased.
- (c) The setpoint must be reduced to ≤ 1E-4% NRTP when less than 4 RCPs are running.
- (d) Trip may be bypassed when logarithmic power is > 1E-4% NRTP. Bypass shall be automatically removed when logarithmic power is ≤ 1E-4% NRTP.
- (e) 1. If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predetermined as-found acceptance criteria band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service. If the as-found instrument channel setpoint is not conservative with respect to the Allowable Value, the channel shall be declared inoperable.
2. The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the UFSAR Trip Setpoint, or within the as left tolerance of a setpoint that is more conservative than the UFSAR Trip Set Point; otherwise the channel shall be declared inoperable. The UFSAR Trip Setpoint and the methodology used to determine 1) the UFSAR Trip Setpoint, 2) the predetermined as found acceptance criteria band, and 3) the as-left setpoint tolerance band are specified in the UFSAR.



Table 3.3.5-1 (page 1 of 1)  
Engineered Safety Features Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	ALLOWABLE VALUE
1. Safety Injection Actuation Signal		
a. Containment Pressure - High	1.2.3	$\leq 3.2$ psig
b. Pressurizer Pressure - Low(a)		$\geq 1821$ psia
2. Containment Spray Actuation Signal		
a. Containment Pressure - High High	1.2.3	$\leq 8.9$ psig
3. Containment Isolation Actuation Signal		
a. Containment Pressure - High	1.2.3	$\leq 3.2$ psig
b. Pressurizer Pressure - Low(a)		$\geq 1821$ psia
4. Main Steam Isolation Signal(c)		
a. Steam Generator #1 Pressure-Low(b)	1.2.3	3876 Mwt RTP: $\geq 890$ psia 3990 Mwt RTP: $\geq 955$ psia <sup>(d)</sup>
b. Steam Generator #2 Pressure-Low(b)		3876 Mwt RTP: $\geq 890$ psia 3990 Mwt RTP: $\geq 955$ psia <sup>(m)</sup>
c. Steam Generator #1 Level-High		$\leq 91.5\%$
d. Steam Generator #2 Level-High		$\leq 91.5\%$
e. Containment Pressure-High		$\leq 3.2$ psig
5. Recirculation Actuation Signal		
a. Refueling Water Storage Tank Level-Low	1.2.3	$\geq 6.9$ and $\leq 7.9\%$
6. Auxiliary Feedwater Actuation Signal SG #1 (AFAS-1)		
a. Steam Generator #1 Level-Low	1.2.3	$\geq 25.3\%$
b. SG Pressure Difference-High		$\leq 192$ psid
7. Auxiliary Feedwater Actuation Signal SG #2 (AFAS-2)		
a. Steam Generator #2 Level-Low	1.2.3	$\geq 25.3\%$
b. SG Pressure Difference-High		$\leq 192$ psid
<p>(a) The setpoint may be decreased to a minimum value of 100 psia, as pressurizer pressure is reduced, provided the margin between pressurizer pressure and the setpoint is maintained <math>\leq 400</math> psia or <math>\geq 140</math> psia greater than the saturation pressure of the RCS cold leg when the RCS cold leg temperature is <math>\geq 485^\circ\text{F}</math>. Trips may be bypassed when pressurizer pressure is <math>&lt; 400</math> psia. Bypass shall be automatically removed when pressurizer pressure is <math>\geq 500</math> psia. The setpoint shall be automatically increased to the normal setpoint as pressurizer pressure is increased.</p> <p>(b) The setpoint may be decreased as steam pressure is reduced, provided the margin between steam pressure and the setpoint is maintained <math>\leq 200</math> psig. The setpoint shall be automatically increased to the normal setpoint as steam pressure is increased.</p> <p>(c) The Main Steam Isolation Signal (MSIS) Function (Steam Generator Pressure - Low, Steam Generator Level-High and Containment Pressure - High signals) is not required to be OPERABLE when all associated valves isolated by the MSIS Function are closed.</p> <p>(d) 1. If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predetermined as-found acceptance criteria band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service. If the as-found instrument channel setpoint is not conservative with respect to the Allowable Value, the channel shall be declared inoperable.</p> <p>2. The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the UFSAR Trip Setpoint, or within the as left tolerance of a setpoint that is more conservative than the UFSAR Trip Set Point; otherwise the channel shall be declared inoperable. The UFSAR Trip Setpoint and the methodology used to determine 1) the UFSAR Trip Setpoint, 2) the predetermined as found acceptance criteria band, and 3) the as-left setpoint tolerance band are specified in the UFSAR.</p>		

Figure 3.4.1-1, (Page 1 of 2)  
Reactor Coolant Cold Leg Temperature vs. Core Power Level

3876 MWt RTP

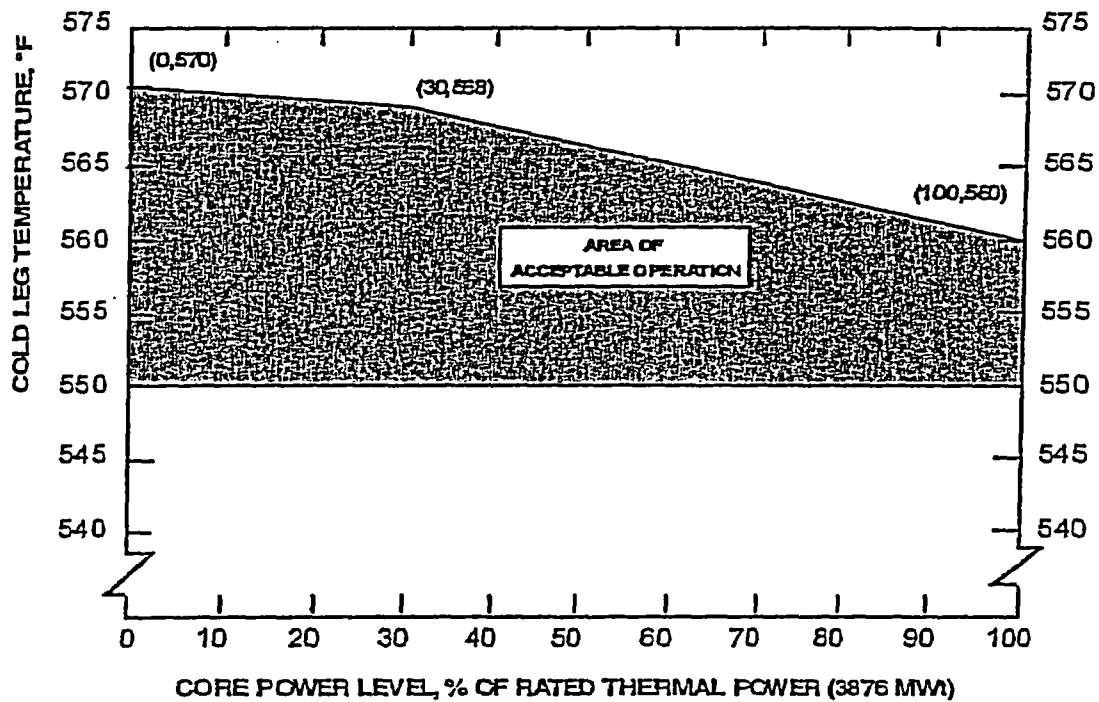


Figure 3.4.1-1, (Page 2 of 2)  
Reactor Coolant Cold Leg Temperature vs. Core Power Level

3990 MWt RTP

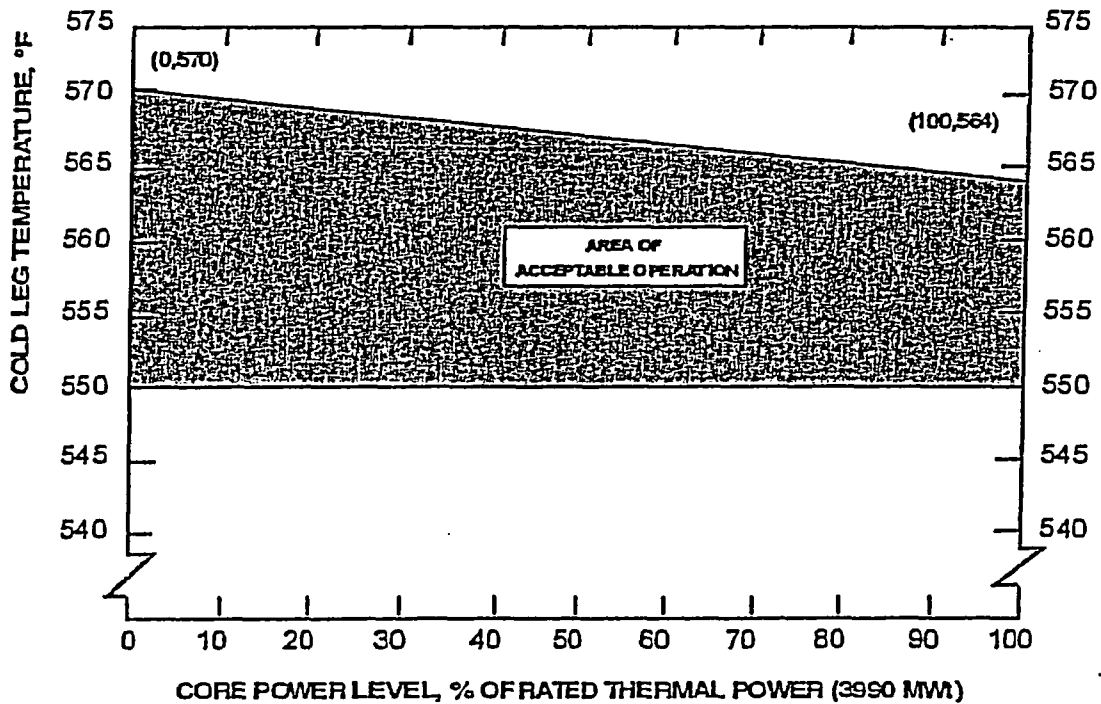


Table 3.7.1-1 (page 1 of 1)  
Variable Overpower Trip Setpoint versus  
OPERABLE Main Steam Safety Valves

MINIMUM NUMBER OF MSSVs PER STEAM GENERATOR REQUIRED OPERABLE	NUMBER OF INOPERABLE MSSVs PER STEAM GENERATOR	MAXIMUM POWER (% RTP) or HIGHEST MODE		MAXIMUM ALLOWABLE VARIABLE OVERPOWER TRIP SETPOINT <sup>(a)</sup> (% RTP)	
		3876 Mwt RTP	3990 Mwt RTP	3876 Mwt RTP	3990 Mwt RTP
10	0	100.0	100.0	111.0	111.0
9	1	98.2	90.0	108.0	99.7
8	2	87.3	80.0	97.1	89.7
7	3	76.4	68.0	86.2	77.7
6	4	65.5	56.0	75.3	65.7
5	5	MODE 3	MODE 3	NA	NA
4	6	MODE 3	MODE 3	NA	NA
3	7	MODE 3	MODE 3	NA	NA
2	8	MODE 3	MODE 3	NA	NA

(a) The VOPT setpoint is not required to be reset in MODE 3.

## 5.5 Programs and Manuals (continued)

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### 5.5.16 Containment Leakage Rate Testing Program (continued)

- b. The peak calculated containment internal pressure for the design basis loss of coolant accident,  $P_a$ , is 52.0 psig for Unit 1 through operating cycle 12 and Unit 3 through operating cycle 13, and 58.0 psig for Unit 1 after operating cycle 12, Unit 2, and Unit 3 after operating cycle 13. The containment design pressure is 60 psig.
  - c. The maximum allowable containment leakage rate,  $L_a$ , at  $P_a$ , shall be 0.1 % of containment air weight per day.
  - d. Leakage Rate acceptance criteria are:
    - 1. Containment leakage rate acceptance criterion is  $\leq 1.0 L_a$ . During the first unit startup following testing in accordance with this program, the leakage rate acceptance are  $< 0.60 L_a$  for the Type B and C tests and  $\leq 0.75 L_a$  for Type A tests.
    - 2. Air lock testing acceptance criteria are:
      - a) Overall air lock leakage rate is  $\leq 0.05 L_a$  when tested at  $\geq P_a$ .
      - b) For each door, leakage rate is  $\leq 0.01 L_a$  when pressurized to  $\geq 14.5$  psig.
  - e. The provisions of SR 3.0.2 do not apply to the test frequencies in the Containment Leakage Rate Testing Program.
  - f. The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.
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