

APPENDIX A

LIMITING CONDITIONS FOR OPERATIONSURVEILLANCE
REQUIREMENTS

3.5	CORE AND CONTAINMENT COOLING SYSTEMS	4.5	114 - 131
	A. Core Spray and LPCI Systems	A	114
	B. RHR Service Water System	B	116
	C. HPCI System	C	117
	D. RCIC System	D	118
	E. Automatic Depressurization System	E	119
	F. Minimum Low Pressure Cooling System Diesel Generator Availability	F	120
	G. Maintenance of Filled Discharge Pipe	G	122
	H. Engineered Safeguards Compartments Cooling	H	123
3.6	PRIMARY SYSTEM BOUNDARY	4.6	132 - 158
	A. Thermal and Pressurization Limitations	A	132
	B. Coolant Chemistry	B	133a
	C. Coolant Leakage	C	35
	D. Safety and Relief Valves	D	136
	E. Jet Pumps	E	137
	F. Recirculation Pump Flow Mismatch	F	137
	G. Inservice Inspection	G	137
	H. Shock Suppressors (Snubbers)	H	137a
3.7	CONTAINMENT SYSTEMS	4.7	159 - 192
	A. Primary Containment	A	159
	B. Standby Gas Treatment System	B	165
	C. Secondary Containment	C	165a
	D. Primary Containment Isolation Valves	D	166
3.8	MISCELLANEOUS RADIOACTIVE MATERIAL SOURCES	4.8	185 - 186
3.9	AUXILIARY ELECTRICAL SYSTEMS	4.9	193 - 202
	A. Auxiliary Electrical Equipment	A	193
	B. Operation with Inoperable Equipment	B	195
3.10	CORE ALTERATIONS	4.10	203 - 209
	A. Refueling Interlocks	A	203
	B. Core Monitoring	B	205
	C. Spent Fuel Pool Water Level	C	205
	D. Time Limitation	D	206
	E. Spent Fuel Cask Handling	E	206
3.11	FUEL RODS	4.11	210 - 214e
	A. Average Planar Linear Heat Generation Rate (APLHGR)	A	210
	B. Linear Heat Generation Rate (LHGR)	B	210
	C. Minimum Critical Power Ratio (MCPR)	C	212

"DELETE
SECTION
"H"

LIMITING CONDITIONS FOR OPERATION

3.5.H. Engineered Safeguards Compartments Cooling

If the unit coolers serving the Reactor Core Isolation Cooling (RCIC), High Pressure Coolant Injection (HPCI), Core Spray or Residual Heat Removal (RHR) pump are out of service, the associated pump shall be considered inoperable for purposes of Specifications 3.5.A, 3.5.C, or 3.5.D as applicable.

SURVEILLANCE REQUIREMENT

4.5.H. Engineered Safeguards Compartments Cooling

The unit coolers for the RCIC, HPCI, Core Spray, and RHR pumps shall be checked for operability during surveillance testing of the associated pumps.

COMPLETELY "DELETE"
BOTH 3.5.H ; 4.5.H

"INTENTIONALLY LEFT BLANK"

THIS IS AN ADDITION

3.5 BASES (cont'd)

is available at all times. It is during refueling outages that major maintenance is performed and during such time that all low pressure core cooling systems may be out of service. Specification 3.5.F.4 provides that should this occur, no work will be performed on the primary system which could lead to draining the vessel. This work would include work on certain control rod drive components and recirculation system. Thus, the specification precludes the events which could require core cooling. Specification 3.5.F.5 recognizes that, concurrent with control rod drive maintenance during the refueling outage, it may be necessary to drain the suppression chamber for maintenance or for the inspection required by Specification 4.7.A.2.h. In this case, if excessive control rod housing leakage occurred, three levels of protection against loss of core cooling would exist. First, a special flange would be used to stop the leak. Second, sufficient inventory of water is maintained to provide, under worst case leak conditions, approximately 60 minutes of core cooling while attempts to secure the leak are made. This inventory includes water in the reactor well, spent fuel pool, and condensate storage tank. If a leak should occur, manually operated valves in the condensate transfer system can be opened to supply either the Core Spray System or the spent fuel pool. Third, sufficient inventory of water is maintained to permit the water which has drained from the vessel to fill the torus to a level above the Core Spray and LPCI suction strainers. These systems could then recycle the water to the vessel. Since the system cannot be pressurized during refueling, the potential need for core flooding only exists and the specified combination of the Core Spray or the LPCI subsystems can provide this. This specification also provides for the highly unlikely case that both diesel generators are found to be inoperable. The reduction of rated power to 25% will provide a very stable operating condition. The allowable repair time of 24 hours will provide an opportunity to repair the diesel and thereby prevent the necessity of taking the plant down through the less stable shutdown condition. If the necessary repairs cannot be made in the allowed 24 hours, the plant will be shutdown in an orderly fashion. This will be accomplished while the two off-site sources of power required by Specification 3.9.A.1 are available.

G. Maintenance of Filled Discharge Pipe

If the discharge piping of the Core Spray, LPCI, HPCI, and RCIC systems are not filled, a water hammer can develop in this piping when the pump and/or pumps are started. If a water hammer were to occur at the time at which the system were required, the system would still perform its design functions. However, to minimize damage to the discharge piping and to ensure added margin in the operation of these systems, this Technical Specification requires the discharge lines to be filled whenever the system is in an operable condition.

H. Engineered Safeguards Compartments Cooling

The unit cooler in each pump compartment is capable of providing adequate ventilation flow and cooling. Engineering analyses indicate that the temperature rise in safeguards compartments without adequate ventilation flow or cooling is such that continued operation of the safeguards equipment or associated auxiliary equipment cannot be assured.

COMPLETELY "DELETE" THIS BASES.

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.12 (cont'd)

B. Reactor Equipment Cooling (REC) System

1. Both Reactor Equipment Cooling subsystems and their associated pumps shall be operable whenever irradiated fuel is in the vessel or the spent fuel pool, except as specified in 3.12.B.2 and 3.12.B.3 below.

2. From and after the date that any active component that affects operability of one REC subsystem becomes inoperable, continued reactor operation is permissible during the succeeding thirty days provided that during such thirty days all active components that affect operability of the operable REC subsystem, the active components that affect operability of the engineered safeguards compartment cooling systems and the diesel generator associated with the operable subsystem are operable.

The allowable repair time does not apply when the reactor is in the shutdown mode and reactor pressure is less than 75 psig.

3. Both REC subsystems, with one pump per subsystem, shall be operable as stated in 3.12.B.1 and 3.12.B.2 above during reactor head-off operations requiring LPCI or Core Spray system availability or Service Water cooling shall be available.

4. If the requirements of 3.12.B.1 through 3.12.B.3 cannot be met, the reactor shall be shutdown in an orderly manner and in the Cold Shutdown condition within 24 hours or operations requiring LPCI or Core Spray system availability shall be halted.

4.12 (cont'd)

B. Reactor Equipment Cooling (REC) System

1. REC System Testing Item	Frequency
a. Pump Operability	Once/Month
b. Motor operated Valve Operability	Once/Month
c. Pump flow rate	Once/3 months
Each pump shall deliver 1175 gpm at 65 psid.	and after pump maintenance
d. System head tank level shall be monitored.	Daily

2. When it is determined that any active component that affects operability of an REC subsystem is inoperable, all active components that affect operability of the operable REC subsystem shall be verified operable immediately and weekly thereafter.

"DELETED"

Core Standby Cooling Systems
"INSERTED"

APPENDIX B

TABLE F CONTENTS (cont'd)

		<u>Page No.</u>
<u>LIMITING CONDITIONS FOR OPERATION</u>	<u>SURVEILLANCE REQUIREMENTS</u>	
3.5 CORE AND CONTAINMENT COOLING SYSTEMS	4.5	114 - 131
A. Core Spray and LPCI Systems	A	114
B. RHR Service Water System	B	116
C. HPCI System	C	117
D. RCIC System	D	118
E. Automatic Depressurization System	E	119
F. Minimum Low Pressure Cooling System Diesel Generator Availability	F	120
G. Maintenance of Filled Discharge Pipe	G	122
3.6 PRIMARY SYSTEM BOUNDARY	4.6	132 - 158
A. Thermal and Pressurization Limitations	A	132
B. Coolant Chemistry	B	133a
C. Coolant Leakage	C	135
D. Safety and Relief Valves	D	136
E. Jet Pumps	E	137
F. Recirculation Pump Flow Mismatch	F	137
G. Inservice Inspection	G	137
H. Shock Suppressors (Snubbers)	H	137a
3.7 CONTAINMENT SYSTEMS	4.7	159 - 192
A. Primary Containment	A	159
B. Standby Gas Treatment System	B	165
C. Secondary Containment	C	165a
D. Primary Containment Isolation Valves	D	166
3.8 MISCELLANEOUS RADIOACTIVE MATERIAL SOURCES	4.8	185 - 186
3.9 AUXILIARY ELECTRICAL SYSTEMS	4.9	193 - 202
A. Auxiliary Electrical Equipment	A	193
B. Operation with Inoperable Equipment	B	195
3.10 CORE ALTERATIONS	4.10	203 - 209
A. Refueling Interlocks	A	203
B. Core Monitoring	B	205
C. Spent Fuel Pool Water Level	C	205
D. Time Limitation	D	206
E. Spent Fuel Cask Handling	E	206
3.11 FUEL RODS	4.11	210 - 214e
A. Average Planar Linear Heat Generation Rate (APLHGR)	A	210
B. Linear Heat Generation Rate (LHGR)	B	210
C. Minimum Critical Power Ratio (MCPR)	C	212

"INTENTIONALLY LEFT BLANK"

3.5 BASES (cont'd)

is available at all times. It is during refueling outages that major maintenance is performed and during such time that all low pressure core cooling systems may be out of service. Specification 3.5.F.4 provides that should this occur, no work will be performed on the primary system which could lead to draining the vessel. This work would include work on certain control rod drive components and recirculation system. Thus, the specification precludes the events which could require core cooling. Specification 3.5.F.5 recognizes that, concurrent with control rod drive maintenance during the refueling outage, it may be necessary to drain the suppression chamber for maintenance or for the inspection required by Specification 4.7.A.2.h. In this case, if excessive control rod housing leakage occurred, three levels of protection against loss of core cooling would exist. First, a special flange would be used to stop the leak. Second, sufficient inventory of water is maintained to provide, under worst case leak conditions, approximately 60 minutes of core cooling while attempts to secure the leak are made. This inventory includes water in the reactor well, spent fuel pool, and condensate storage tank. If a leak should occur, manually operated valves in the condensate transfer system can be opened to supply either the Core Spray System or the spent fuel pool. Third, sufficient inventory of water is maintained to permit the water which has drained from the vessel to fill the torus to a level above the Core Spray and LPCI suction strainers. These systems could then recycle the water to the vessel. Since the system cannot be pressurized during refueling, the potential need for core flooding only exists and the specified combination of the Core Spray or the LPCI subsystems can provide this. This specification also provides for the highly unlikely case that both diesel generators are found to be inoperable. The reduction of rated power to 25% will provide a very stable operating condition. The allowable repair time of 24 hours will provide an opportunity to repair the diesel and thereby prevent the necessity of taking the plant down through the less stable shutdown condition. If the necessary repairs cannot be made in the allowed 24 hours, the plant will be shutdown in an orderly fashion. This will be accomplished while the two off-site sources of power required by Specification 3.9.A.1 are available.

G. Maintenance of Filled Discharge Pipe

If the discharge piping of the Core Spray, LPCI, HPCI, and RCIC systems are not filled, a water hammer can develop in this piping when the pump and/or pumps are started. If a water hammer were to occur at the time at which the system were required, the system would still perform its design functions. However, to minimize damage to the discharge piping and to ensure added margin in the operation of these systems, this Technical Specification requires the discharge lines to be filled whenever the system is in an operable condition.

LIMITING CONDITIONS FOR OPERATION

3.12 (cont'd)

B. Reactor Equipment Cooling (REC) System

1. Both Reactor Equipment Cooling subsystems and their associated pumps shall be operable whenever irradiated fuel is in the vessel or the spent fuel pool, except as specified in 3.12.B.2 and 3.12.B.3 below.

2. From and after the date that any active component that affects operability of one REC subsystem becomes inoperable, continued reactor operation is permissible during the succeeding thirty days provided that during such thirty days all active components that affect operability of the operable REC subsystem, the active components that affect operability of the Core Standby Cooling Systems, and the diesel generator associated with the operable subsystem are operable.

The allowable repair time does not apply when the reactor is in the shutdown mode and reactor pressure is less than 75 psig.

3. Both REC subsystems, with one pump per subsystem, shall be operable as stated in 3.12.B.1 and 3.12.B.2 above during reactor head-off operations requiring LPCI or Core Spray system availability or Service Water cooling shall be available.
4. If the requirements of 3.12.B.1 through 3.12.B.3 cannot be met, the reactor shall be shutdown in an orderly manner and in the Cold Shutdown condition within 24 hours or operations requiring LPCI or Core Spray system availability shall be halted.

SURVEILLANCE REQUIREMENTS

4.12 (cont'd)

B. Reactor Equipment Cooling (REC) System

1. REC System Testing

<u>Item</u>	<u>Frequency</u>
a. Pump Operability	Once/Month
b. Motor operated Valve Operability	Once/Month
c. Pump flow rate	Once/3 months
Each pump shall deliver 1175 gpm at 65 psid.	and after pump maintenance
d. System head tank level shall be monitored.	Daily
2. When it is determined that any active component that affects operability of an REC subsystem is inoperable, all active components that affect operability of the operable REC subsystem shall be verified operable immediately and weekly thereafter.