LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5.B Residual Heat Removal System (RHRS) (LPCI and Containment Cooling)	4.5.B Residual Heat Removal System (RHRS) (LPCI and Containment Cooling)
11. DELETED	11. DELETED
12. DELETED	12. DELETED

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
13. DELETED	13. DELETED
14. All recirculation pump discharge valves shall be operable prior to reactor startup (or closed if permitted elsewhere in these specifications).	14. All recirculation pump discharge valves shall be tested for operability during any period of reactor cold shutdown exceeding 48 hours, if operability tests have not been performed during the preceding 31 days.

Should one RHR pump (containment cooling mode) become inoperable, a complement of three full capacity containment heat removal systems is still available. Any two of the remaining pumps/heat exchanger combinations would provide more than adequate containment cooling for any abnormal or post accident situation. Because of the availability of equipment in access of normal redundancy requirements, which is demonstrated to be operable immediately and with specified subsequent performance, a 30-day repair period is justified.

Should two RHR pumps (containment cooling mode) become inoperable, a full heat removal system is still available. The remaining pump/heat exchanger combinations would provide adequate containment cooling for any abnormal post accident situation. Because of the availability of a full complement of heat removal equipment, which is demonstrated to be operable immediately and with specified performance, a 7-day repair period is justified.

Observation of the stated requirements for the containment cooling mode assures that the suppression pool and the drywell will be sufficiently cooled, following a loss-of-coolant accident, to prevent primary containment overpressurization. The containment cooling function of the RHRS is permitted only after the core has reflooded to the two-thirds core height level. This prevents inadvertently diverting water needed for core flooding to the less urgent task of containment cooling. The two-thirds core height level interlock may be manually bypassed by a keylock switch.

Since the RHRS is filled with low quality water during power operation, it is planned that the system be filled with demineralized (condensate) water before using the shutdown cooling function of the RHR system. Since it is desirable to have the RHRS in service if a "pipe-break" type of accident should occur, it is permitted to be out of operation for only a restricted amount of time and when the system pressure is low. At least one-half of the containment cooling function must remain operable during this time period. Requiring two operable CSS pumps during cooldown allows for flushing the RHRS even if the shutdown were caused by inability to meet the CSS specifications (3.5.A) on a number of operable pumps.

When the reactor vessel pressure is atmospheric, the limiting conditions for operation are less restrictive. At atmospheric pressure, the minimum requirement is for one supply of makeup water to the core. Requiring two operable RHR pumps and one CSS pump provides redundancy to ensure makeup water availability.

REFERENCES

1. Residual Heat Removal System (BFNP FSAR subsection 4.8)

2. Core Standby Cooling Systems (BFNP FSAR Section 6)

3.5.C RHR Service Water System and Emergency Equipment Cooling Water System (EECWS)

There are two EECW headers (north and south) with four automatic starting RHRSW pumps on each header. All components requiring emergency cooling water are fed from both headers thus assuring continuity of operation if either header is operable. Each header alone can handle the flows to all components. Two RHRSW pumps can supply the full flow requirements of all essential EECW loads for any abnormal or postaccident situation.

There are four RHR heat exchanger headers (A, B, C, & D) with one RHR heat exchanger from each unit on each header. There are two RHRSW pumps on each header; one normally assigned to each header (A2, B2, C2, or D2) and one on alternate assignment (A1, B1, C1, or D1). One RHR heat exchanger header can adequately deliver the flow supplied by both RHRSW pumps to any two of the three RHRSW heat exchangers on the header. One RHRSW pump can supply the full flow requirement of one RHR heat exchanger. Two RHR heat exchangers can more than adequately handle the cooling requirements of one unit in any abnormal or postaccident situation.

The RHR Service Water Systems was designed as a shared system for three units. The specification, as written, is conservative when consideration is given to particular pumps being out of service and to possible valving arrangements. If unusual operating conditions arise such that more pumps are out of service than allowed by this specification, a special case request may be made to the NRC to allow continued operation if the actual system cooling requirements can be assured.

Should one of the two RHRSW pumps normally or alternately assigned to the RHR heat exchanger header supplying the standby coolant supply connection become inoperable, an equal capability for long-term fluid makeup to the unit reactor and for cooling of the unit containment remains operable. Because of the availability of an equal makeup and cooling capability which is demonstrated to be operable immediately and with specified subsequent surveillance, a 30-day repair period is justified. Should the capability to provide standby coolant supply be lost, a 10-day repair time is justified based on the low probability for ever needing the standby coolant supply.

UNIT 2 PROPOSED SPECIFICATIONS

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5.B Residual Heat Removal System (RHRS) (LPCI and Containment Cooling)	4.5.B Residual Heat Removal System (RHRS) (LPCI and Containment Cooling)
11.	11.
12.	12.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
13.	13.
14. All recirculation pump discharge valves shall be operable prior to reactor startup (or closed if permitted elsewhere in these specifications).	14. All recirculation pump discharge valves shall be tested for operability during any period of reactor cold shutdown exceeding 48 hours, if operability tests have not been performed during the preceding 31 days.

Should one RHR pump (containment cooling mode) become inoperable, a complement of three full capacity containment heat removal systems is still available. Any two of the remaining pumps/heat exchanger combinations would provide more than adequate containment cooling for any abnormal or post accident situation. Because of the availability of equipment in access of normal redundancy requirements, which is demonstrated to be operable immediately and with specified subsequent performance, a 30-day repair period is justified.

Should two RHR pumps (containment cooling mode) become inoperable, a full heat removal system is still available. The remaining pump/heat exchanger combinations would provide adequate containment cooling for any abnormal post accident situation. Because of the availability of a full complement of heat removal equipment, which is demonstrated to be operable immediately and with specified performance, a 7-day repair period is justified.

Observation of the stated requirements for the containment cooling mode assures that the suppression pool and the drywell will be sufficiently cooled, following a loss-of-coolant accident, to prevent primary containment overpressurization. The containment cooling function of the RHRS is permitted only after the core has reflooded to the two-thirds core height level. This prevents inadvertently diverting water needed for core flooding to the less urgent task of containment cooling. The two-thirds core height level interlock may be manually bypassed by a keylock switch.

Since the RHRS is filled with low quality water during power operation, it is planned that the system be filled with demineralized (condensate) water before using the shutdown cooling function of the RHR system. Since it is desirable to have the RHRS in service if a "pipe-break" type of accident should occur, it is permitted to be out of operation for only a restricted amount of time and when the system pressure is low. At least one-half of the containment cooling function must remain operable during this time period. Requiring two operable CSS pumps during cooldown allows for flushing the RHRS even if the shutdown were caused by inability to meet the CSS specifications (3.5.A) on a number of operable pumps.

When the reactor vessel pressure is atmospheric, the limiting conditions for operation are less restrictive. At atmospheric pressure, the minimum requirement is for one supply of makeup water to the core. Requiring two operable RHR pumps and one CSS pump provides redundancy to ensure makeup water availability.

REFERENCES

1. Residual Heat Removal System (BFHP FSAR subsection 4.8)

2. Core Standby Cooling Systems (BFHP FSAR Section 6)

3.5.C RHR Service Water System and Emergency Equipment Cooling Water System (EECWS)

There are two EECW headers (north and south) with four automatic starting RHRSW pumps on each header. All components requiring emergency cooling water are fed from both headers thus assuring continuity of operation if either header is operable. Each header alone can handle the flows to all components. Two RHRSW pumps can supply the full flow requirements of all essential EECW loads for any abnormal or postaccident situation.

There are four RHR heat exchanger headers (A, B, C, & D) with one RHR heat exchanger from each unit on each header. There are two RHRSW pumps on each header; one normally assigned to each header (A2, B2, C2, or D2) and one on alternate assignment (A1, B1, C1, or D1). One RHR heat exchanger header can adequately deliver the flow supplied by both RHRSW pumps to any two of the three RHRSW heat exchangers on the header. One RHRSW pump can supply the full flow requirement of one RHR heat exchanger. Two RHR heat exchangers can more than adequately handle the cooling requirements of one unit in any abnormal or postaccident situation.

The RHR Service Water Systems was designed as a shared system for three units. The specification, as written, is conservative when consideration is given to particular pumps being out of service and to possible valving arrangements. If unusual operating conditions arise such that more pumps are out of service than allowed by this specification, a special case request may be made to the NRC to allow continued operation if the actual system cooling requirements can be assured.

Should three of the four RHRSW pumps normally or alternately assigned to the RHR heat exchanger headers supplying the standby coolant supply connection become inoperable, capability for long-term fluid makeup to the unit reactor and for cooling of the unit containment remains operable. Because of the availability of makeup and cooling capability which is demonstrated to be operable immediately and with specified subsequent surveillance, a 30-day repair period is justified. Unit 2 may be supplied standby coolant from either of four pumps--B1, B2, D1, or D2. Should the capability to provide standby coolant supply be lost, a 10-day repair time is justified based on the low probability for ever needing the standby coolant supply.

UNIT 3 PROPOSED SPECIFICATIONS

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5 CORE AND CONTAINMENT COOLING SYSTEMS	4.5 CORE AND CONTAINMENT COOLING SYSTEMS
8. If specifications 3.5.B.1 through 3.5.B.7 are not met, an orderly shutdown shall be initiated and the reactor shall be shutdown and placed in the cold condition within 24 hours.	second operable access path for the same phase of the mode (drywell sprays, suppression chamber sprays and suppression pool cooling) shall be demonstrated to be operable daily thereafter until the second path is returned to normal service.
9. When the reactor vessel pressure is atmospheric and irradiated fuel is in the reactor vessel at least one RHR loop with two pumps or two loops with one pump per loop shall be operable. The pumps' associated diesel generators must also be operable.	8. No additional surveillance required.
	9. When the reactor vessel pressure is atmospheric, the RHR pumps and valves that are required to be operable shall be demonstrated to be operable monthly.
10. If the conditions of specification 3.5.A.5 are met, LPCI and containment cooling are not required.	10. No additional surveillance required.
11.	11.
	12.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
1.5 CORE AND CONTAINMENT COOLING SYSTEMS	4.5 CORE AND CONTAINMENT COOLING SYSTEMS
12.	
13.	13.
14. All recirculation pump discharge valves shall be operable prior to reactor startup (or closed if permitted elsewhere in these Specifications).	14. All recirculation pump discharge valves shall be tested for operability during any period of reactor cold shutdown exceeding 48 hours, if operability tests have not been performed during the preceeding 31 days.

have the RHRS in service if a "pipe-break" type of accident should occur, it is permitted to be out of operation for only a restricted amount of time and when the system pressure is low. At least one-half of the containment cooling function must remain operable during this time period. Requiring two operable CSS pumps during cooldown allows for flushing the RHRS even if the shutdown were caused by inability to meet the CSS specifications (3.5.A) on a number of operable pumps.

When the reactor vessel pressure is atmospheric, the limiting conditions for operation are less restrictive. At atmospheric pressure, the minimum requirement is for one supply of makeup water to the core. Requiring two operable RHR pumps and one CSS pump provides redundancy to ensure makeup water availability.

The suppression chamber can be drained when the reactor vessel pressure is atmospheric, irradiated fuel is in the reactor vessel, and work is not in progress which has the potential to drain the vessel. By requiring the fuel pool gate to be open with the vessel head removed, the combined water inventory in the fuel pool, the reactor cavity, and the separator/dryer pool, between the fuel pool low level alarm and the reactor vessel flange, is about 65,800 cubic feet (492,000 gallons). This will provide adequate low-pressure cooling in lieu of CSS and RHR (LPCI and containment cooling mode) as currently required in specifications 3.5.A.4 and 3.5.B.9. The additional requirements for provididng standby coolant supply available will ensure a redundant supply of coolant supply. Control rod drive maintenance may continue during this period provided no more than one drive is removed at a time unless blind flanges are installed during the period of time CRD's are not in place.

ENCLOSURE 2

DESCRIPTION AND JUSTIFICATION AND SAFETY ANALYSIS
(TVA BFNP TS 207)

Description

Pages 149, 150, 161, and 164 for units 1 and 2 and pages 153, 154, and 170 for unit 3 are being changed to delete sections 3.5.B.11, 4.5.B.11, 3.5.B.12, 4.5.B.12, 3.5.B.13, 4.5.B.13, and the associated bases. These sections specify operability and surveillance requirements for the RHR interunit crosstie capability.

Justification

The RHR crosstie capability at Browns Ferry allows each unit access to one RHR loop (2 pumps and 2 heat exchangers) belonging to its physically adjacent unit by providing both suction and discharge piping between units. Current limiting conditions for operation associated with this feature prohibit major outage modification and maintenance work on RHR loops in some cases without requiring operating two units to be placed in cold shutdown. The existence of technical specifictaion limiting conditions for operation covering this type of plant feature is overly restrictive and not typical of other BWRs.

Safety Analysis

The RHR crosstie and standby coolant supply features, as described in FSAR section 4.8.6.4, provide added long-term redundancy to other emergency core and containment cooling systems and are designed to accommodate certain unlikely situations which could jeopardize these systems. The RHR unit crosstie is not part of the safety design basis for the RHR system stated in section 4.8.3 of the FSAR. The RHR service water crosstie (standby coolant supply) is included in the safety design basis and is not affected by this proposed amendment.

No credit is taken for the RHR crosstie feature in design basis accident analyses; and therefore, its elimination as a technical specification requirement does not reduce any analyzed safety margin. It should be noted that the RHR crosstie feature is not being eliminated from the plant design. It will continue to be maintained in the same manner as other design features which are described in the FSAR and provide additional plant safety but are not part of the safety design basis or technical specifications.

ENCLOSURE 3

PROPOSED NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION
(TVA BFNP TS 207)

The Commission has provided guidance concerning the application of the standards in 10 CFR 50.92 by providing certain examples (48 FR 14870, April 6, 1983). One of the examples (vi) of actions not likely to involve a significant hazards consideration relates to change which either may result in some increase in the probability or consequences of a previously analyzed accident or may reduce in some way a safety margin, but where the results of the change are clearly within all acceptable criteria with respect to the system or component specified in the Standard Review Plan. The proposed changes remove limiting conditions for operation for the RHR crosstie capability. This capability is not required by Standard Technical Specifications (NUREG-0123) or the Standard Review Plan. The feature itself is not being removed from the plant design.

Therefore, since the changes are within the Standard Review Plan, TVA propose to determine that the proposed changes would not involve a significant hazard consideration determination in that they: (1) do not involve a significant increase in the probability or consequences of a previously evaluated accident; (2) do not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) do not involve a significant reduction in a margin of safety.