ENCLOSURE 1

PROPOSED TECHNICAL SPECIFICATION REVISIONS ,
TVA BFNP TS 181 SUPPLEMENT 1
BROWNS FERRY NUCLEAR PLANT

UNIT 1 PROPOSED TECHNICAL SPECIFICATIONS

3.4 STANDBY LIQUID CONTROL SYSTEM

Applicability

Applies to the operating status of the Standby Liquid Control System.

Objective

To assure the availability of a system with the capability to shut down the reactor and maintain the shutdown condition without the use of control rods.

Specification

A. Normal System Availability

1. The standby liquid control system shall be operable at all times when there is fuel in the reactor vessel and the reactor is not in a shutdown condition with all operable control rods fully inserted except as specified in 3.4.B.1.

4.4 STANDBY LIQUID CONTROL SYSTEM

Applicability

Applies to the surveillance requirements of the Standby Liquid Control System.

Objective

To verify the operability of the Standby Liquid Control System.

Specification

A. Normal System Availability

The operability of the Standby Liquid Control System shall be verified by the performance of the following tests:

- 1. Verify that, when tested pursuant to Specification 4.12.A, each pump develops a flow of at least 39 gpm against a system head of 1275 psig.
- 2. At least once per month each pump loop shall be functionally tested.
- 3. At least once during each operating cycle:
 - a. Check that the setting of the system relief valves is
 1425 + 75 psig.

/ • . b. • • . · · •

3.4-STANDBY LIQUID CONTROL SYSTEM

STANDBY LIQUID CONTROL SYSTEM

Normal System Availability

Manually initiate the system, except explosive valves. Pump boron solution through the recirculation, path and back to the Standby Liquid Control Solution Tank. Minimum pump flow rate of 39 gpm

Applicability

Applies to the operational status of the core and containment cooling systems.

Objective

To assure the operability of the core and containment cooling systems under all conditions for which this cooling capability is an essential response to the plant abnormalities.

Specification

A. Core Spray System (CSS)

- 1. The CSS shall be operable:
 - (1) prior to reactor startup from a cold condition, or

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(2) when there is irradiated fuel in the vessel and when the reactor vessel pressure is greater than atmospheric pressure, except as specified in Specification 3.5.A.2.

4.5 CORE AND CONTAINMENT COOLING SYSTEMS

<u>Applicability</u>

Applies to the surveillance requirements of the core and containment cooling systems when the corresponding limiting condition for operation is in effect.

Objective

To verify the operability of the core and containment cooling systems under all conditions for which this cooling capability is an essential response to plant abnormalities.

Specification

A. Core Spray System (CSS)

1. Core Spray System Testing.

	<u> Item</u>	Frequency
a.	Simulated Automatic Actuation test	Once/ Operating Cycle
b.	Pump Opera- bility	Once/month

(Deleted)

Contraction of the State Contraction

d. Verify that, when tested pursuant to Specification 4.12.A each loop delivers at least 6,250 gpm against a system head corresponding to a

3.5.B Residual Heat Removal System (RHRS) (LPCI and Containment Cooling)

- 1. The RHRS shall be operable:
 - (1) prior to a reactor startup from a Cold Condition; or
 - (2) when there is irradiated fuel in the reactor vessel and when the reactor vessel pressure is greater than atmospheric, except as specified in Specification 3.5.B.2 through 3.5.B.7.
- 2. With the reactor vessel pressure less than 105 psig, the RHRS may be removed from service (except that two RHR pumps-containment cooling mode and associated heat exchangers must remain operable) for a period not to exceed 24 hours while being drained of suppression chamber quality water and filled with primary coolant quality water provided that during cooldown two loops with one pump per loop or one loop with two pumps; and associated diesel generators, in the core spray system are operable.
- 3. If one RHR pump (LPCI mode) is inoperable, the reactor may remain in operation for a period not to exceed 7 days provided the remaining RHR pumps (LPCI mode) and both access paths of the RHRS (LPCI mode) and the CSS and the diesel generators remain operable.

4.5.B. Residual Heat Removal System (RHRS) (LPCI and Containment Cooling)

1. a. Simulated
Automatic,
Actuation,
Test

Once/ Operating Cycle

b. Pump Operability

Once/month

- c. (Deleted)
- d. When tested in accordance with Specification 4.12.A, each LPCI pump shall deliver at least 9,000 gpm against an indicated system pressure of 125 psig. Two LPCI pumps in the same loop shall deliver 12,000 gpm against an indicated system pressure of 250 psig.
- e. Valves shall be tested in accordance with Specification 4.12.A.
- 2. An air test on the drywell and torus headers and nozzles shall be conducted once/5 years. I water test may be performed on the torus header in lieu of the air test.
- 3. No additional surveillance required.



3.5.D Equipment Area Coolers

- 1. The equipment area cooler associated with each RHR pump and the equipment area cooler associated with each set of core spray pumps (A and C or B and D) must be operable at all times when the pump or pumps served by that specific cooler is considered to be operable.
- 2. When an equipment area cooler is not operable, the pump(s) served by that cooler must be considered inoperable for Technical Specification purposes.

E. <u>High Pressure Coolant Injection</u> System (HPCIS)

- 1. The HPCI system shall be operable:
 - (1) prior to startup from a Cold Shutdown; or
 - (2) whenever there is irradiated fuel in the reactor vessel and the reactor vessel pressure is greater than 122 psig, except as specified in Specification 3.5.E.2.

4.5.D Equipment Area Coolers

1. Each equipment area cooler is operated in conjunction with the equipment served by that particular cooler; therefore, the equipment area coolers are tested at the same frequency as the pumps which they serve.

E. <u>High Pressure Coolant Injection</u> System (HPCIS)

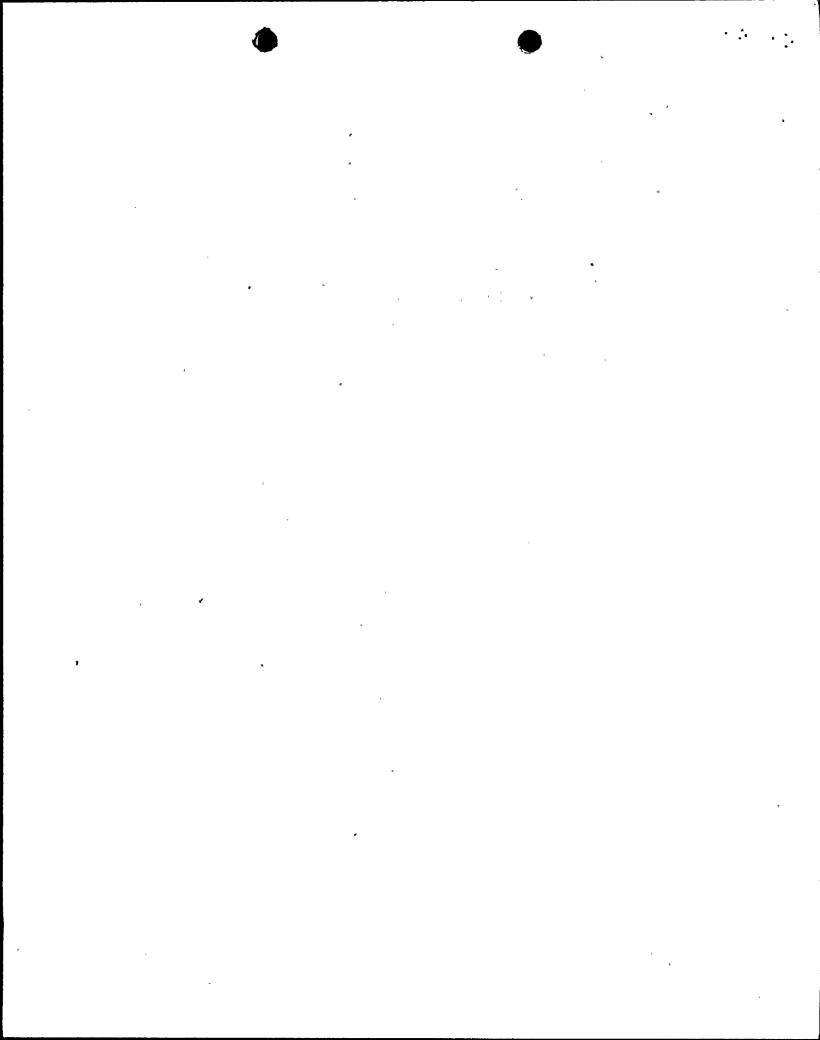
1. HPCI Subsystem testing shall be performed as follows:

a. Simulated Once/
Automatic operating
Actuation cycle
Test

b. Pump Opera- Once/ bility month

c. (Deleted)

- d. When tested in accordance with Specification 4.12.A the HPCI pump shall deliver at least 5000 gpm at normal reactor vessel operating pressure.
- e. Valves shall be tested in accordance with Specification 4.12.A.



- E. <u>High Pressure Coolant Injection</u>
 <u>System (HPCIS)</u>
- E. <u>High Pressure Coolant Injection</u>
 System (HPCIS)
 - f. When flow rate tested at equal to or greater than 150 psig steam pressure to the turbine, the HPCI pump shall deliver at least 5000 gpm. This test shall be performed once per operating cycle.

3.5.E <u>High Pressure Coolant Injection</u> <u>System (HPCIS)</u>

- 2. If the HPCI system is inoperable, the reactor may remain in operation for a period not to exceed 7 days, provided the ADS, CSS, RHRS (LPCI), and RCICS are operable.
- 3. If Specification 3.5.E.1 or 3.5.E.2 are not met, an orderly shutdown shall be initiated and the reactor vessel pressure shall be reduced to 122 psig or less within 24 hours.

F. Reactor Core Isolation Cooling System (RCICS)

- 1. The RCICS shall be operable:
 - (1) prior to startup from a Cold Condition; or
 - (2) whenever there is irra-"
 diated fuel in the reactor vessel and the reactor vessel pressure is
 above 122 psig, except
 as specified in 3.5.F.2.

4.5.E <u>High Pressure Coolant Injection</u> System (HPCIS)

2. No additional surveillance required.

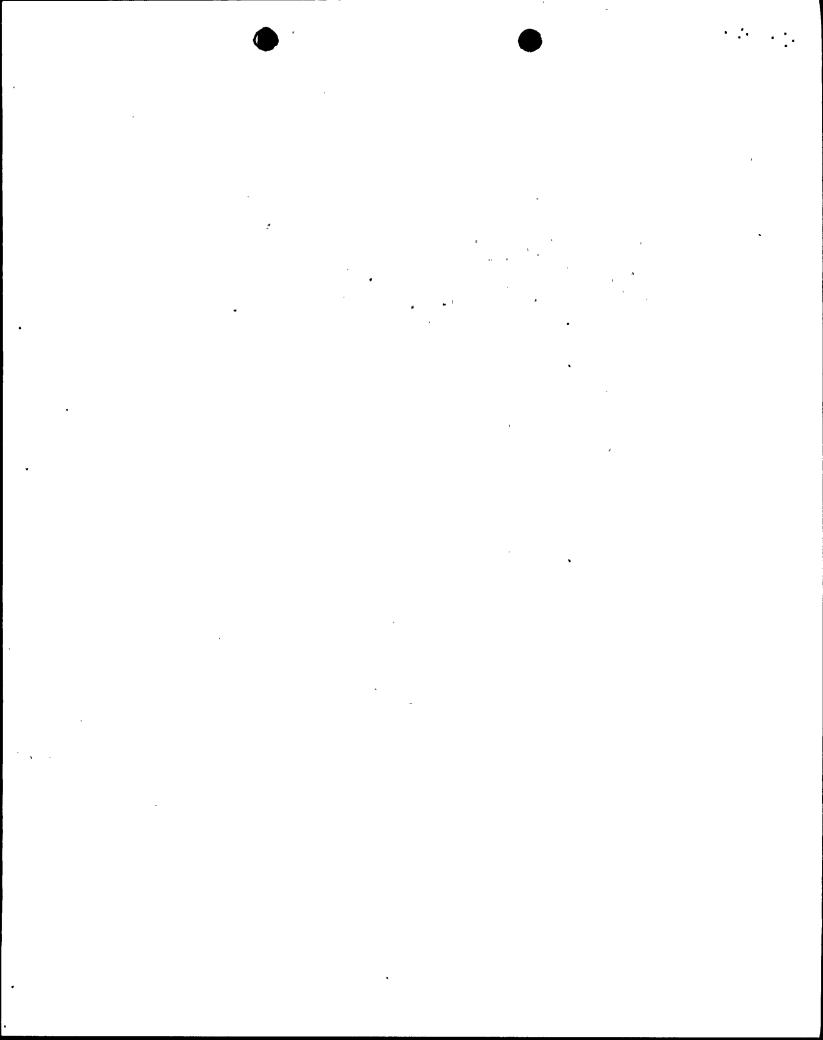
F. Reactor Core Isolation Cooling System (RCICS)

1. RCIC Subsystem testing shall be performed as follows:

a. Simulated Once/
Automatic operating
Actuation cycle
Test

b. Pump Opera- Once/ bility month

- c. (Deleted)
- d. When tested in accordance with Specification 4.12.A the RCIC pump shall deliver at least 600 gpm at normal reactor operating pressure.
- e. Valves shall be tested in accordance with Specification 4.12.A.



3.5.F Reactor Core Isolation Cooling. System (RCICS)

- 2. If the RCICS is inoperable, the reactor may remain in operation for a period not to exceed 7 days if the HPCIS is operable during such time.
- 3. If specifications 3.5.F.1 or 3.5.F.2 are not met, an orderly shutdown shall be initiated and the reactor shall be depressurized to less than 122 psig within 24 hours.

4.5.F Reactor Core Isolation Cooling System (RCICS)

- f. When flow rate tested at equal to or greater than 150 psig steam pressure to the turbine, the RCIC pump shall deliver at least 600 gpm. This test shall be performed once per operating cycle.
- 2. No additional surveillance required.

3.5.G <u>Automatic Depressurization</u> <u>System (ADS)</u>

- Four of the six valves of the Automatic Depressurization System shall be operable:
 - (1) prior to a startup from a Cold Condition, or.
 - (2) whenever there is irradiated fuel in the reactor vessel and the reactor vessel pressure is greater than 105 psig, except as specified in 3.5.G.2 and 3.5.G.3 below.
- 2. If three of the six ADS valves are known to be incapable of automatic operation, the reactor may remain in operation for a period not to exceed 7 days, provided the HPCI system is operable. (Note that the pressure relief function of these valves is assured by section 3.6.D of these specifications and that this specification only applies to the ADS function.) If more than three of the six ADS valves are known to be incapable of automatic operation, an immediate orderly shutdown shall be initiated, with the reactor in a hot shutdown condition in 6 hours and in a cold shutdown condition in the following 18 hours.

4.5.G Automatic Depressurization System (ADS)

- 1. During each operating cycle the following tests shall be performed on the ADS:
 - a. A simulated automatic actuation test shall be performed prior to startup after each refueling outage. Manual surveillance of the relief valves is covered, in 4.6.D.2.
- 2. No additional surveillance required.

4.5 Core and Containment Cooling Systems Surveillance Frequencies

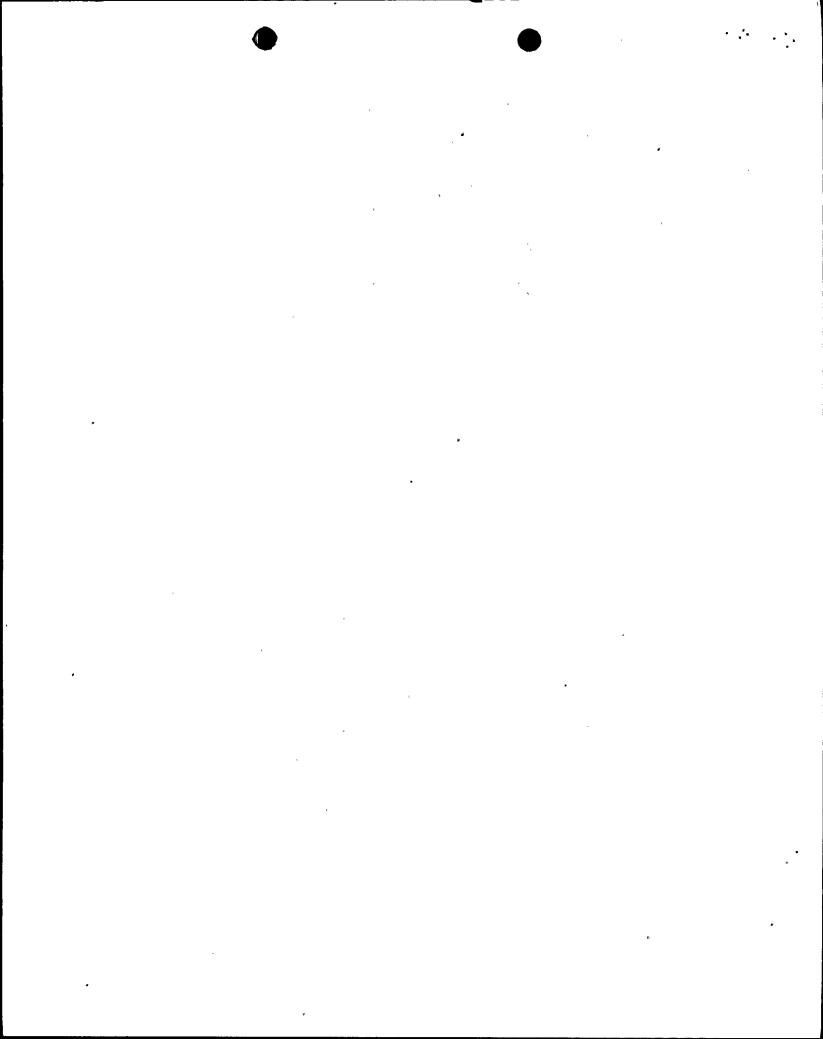
The testing interval for the core and containment cooling systems is based on industry practice, quantitative reliability analysis, judgement, and practicality. The core cooling systems have not been designed to be fully testable during operation. For example, in the case of the HPCI, automatic initiation during power operation would result in pumping cold water into the reactor vessel which is not desirable. Complete ADS testing during power operation causes an undesirable loss-of-coolant inventory. To increase the availability of the core and containment cooling system, the components which make up the system; i.e., instrumentation, pumps, valves, etc., are tested frequently. The pumps are also tested each month to assure their operability. A simulated automatic actuation test once each cycle combined with monthly tests of the pumps is deemed

When components and subsystems are out-of-service, overall core and containment cooling reliability is maintained by redundant operable equipment. Out-of-service time is selected as a small fraction of normal surveillance frequency to add further conservatism.

Maximum Average Planar LHGR, LHGR, and MCPR

to be adequate testing of these systems.

The MAPLHGR, LHGR, and MCPR shall be checked daily to determine if fuel burnup, or control rod movement has caused changes in power distribution. Since changes due to burnup are slow, and only a few control rods are moved daily, a daily check of power distribution is adequate.



UNIT 2 PROPOSED TECHNICAL SPECIFICATIONS

3.4 STANDBY LIQUID CONTROL SYSTEM

<u>Applicability</u>

Applies to the operating status of the Standby Liquid Control System.

Objective

To assure the availability of a system with the capability to shut down the reactor and maintain the shutdown condition without the use of control rods.

Specification

A. Normal System Availability

1. The standby liquid control system shall be operable at all times when there is fuel in the reactor vessel and the reactor is not in a shutdown condition with all operable control rods fully inserted except as specified in 3.4.B.1.

4.4 STANDBY LIQUID CONTROL SYSTEM

Applicability

Applies to the surveillance requirements of the Standby Liquid Control System.

Objective

To verify the operability of the Standby Liquid Control System.

Specification

A. Normal System Availability

The operability of the Standby Liquid Control System shall be verified by the performance of the following tests:

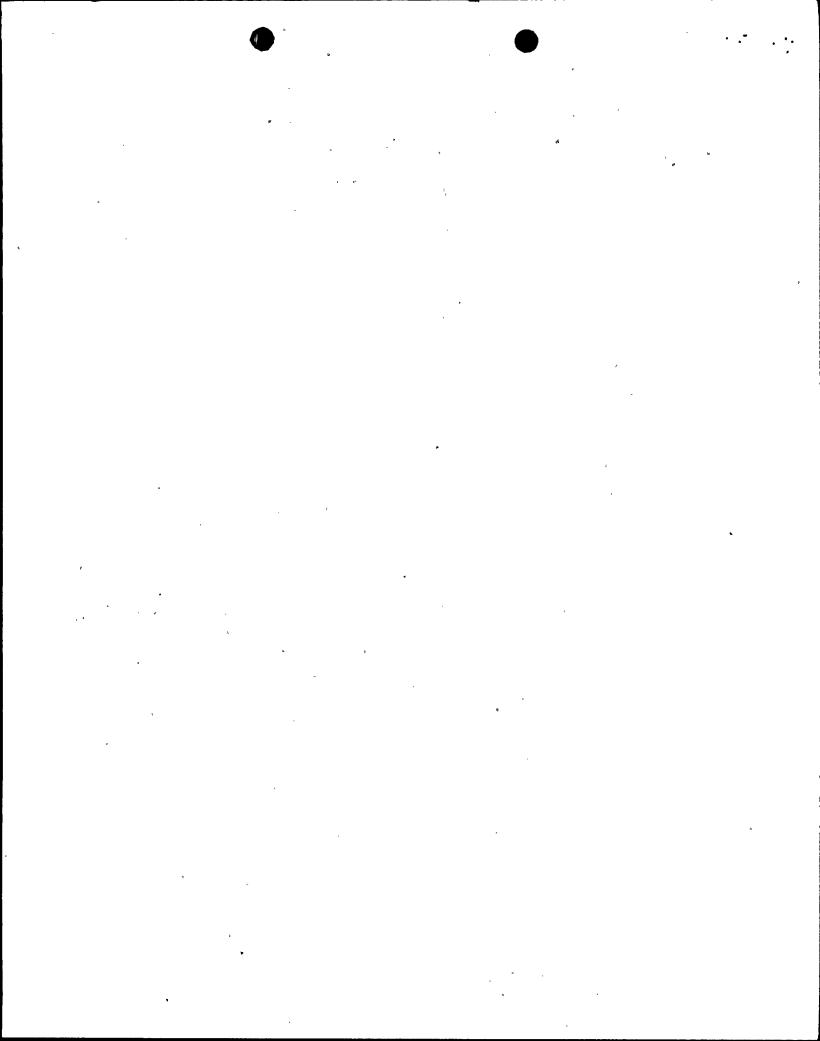
- Verify that, when tested pursuant to Specification 4.12.A, each pump develops a flow of at least 39 gpm against a system head of 1275 psig.
- 2. At least once per month each pump loop shall be functionally tested.
- 3. At least once during each operating cycle:
 - a. Check that the setting of the system relief valves is 1425 + 75 psig.

3.4 STANDBY LIQUID CONTROL SYSTEM

4.4 STANDBY LIQUID CONTROL SYSTEM

A. Normal System Availability

b. Manually initiate the system, except explosive valves. Pump boron solution through the recirculation path and back to the Standby Liquid Control Solution Tank. Minimum pump flow rate of 39 gpm



<u>Applicability</u>

Applies to the operational status of the core and containment cooling systems.

Objective

To assure the operability of the core and containment cooling systems under all conditions for which this cooling capability is an essential response to the plant abnormalities.

Specification

A. Core Spray System (CSS)

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- 1. The CSS shall be operable:
 - (1) prior to reactor startup from a cold condition, or
 - (2) when there is irradiated fuel in the
 vessel and when the
 reactor vessel pressure
 is greater than atmospheric pressure, except
 as specified in Specification 3.5.A.2.

4.5 CORE AND CONTAINMENT COOLING SYSTEMS

Applicability

Applies to the surveillance requirements of the core and containment cooling systems when the corresponding limiting condition for operation is in effect.

Objective

To verify the operability of the core and containment cooling systems under all conditions for which this cooling capability is an essential response to plant abnormalities.

Specification

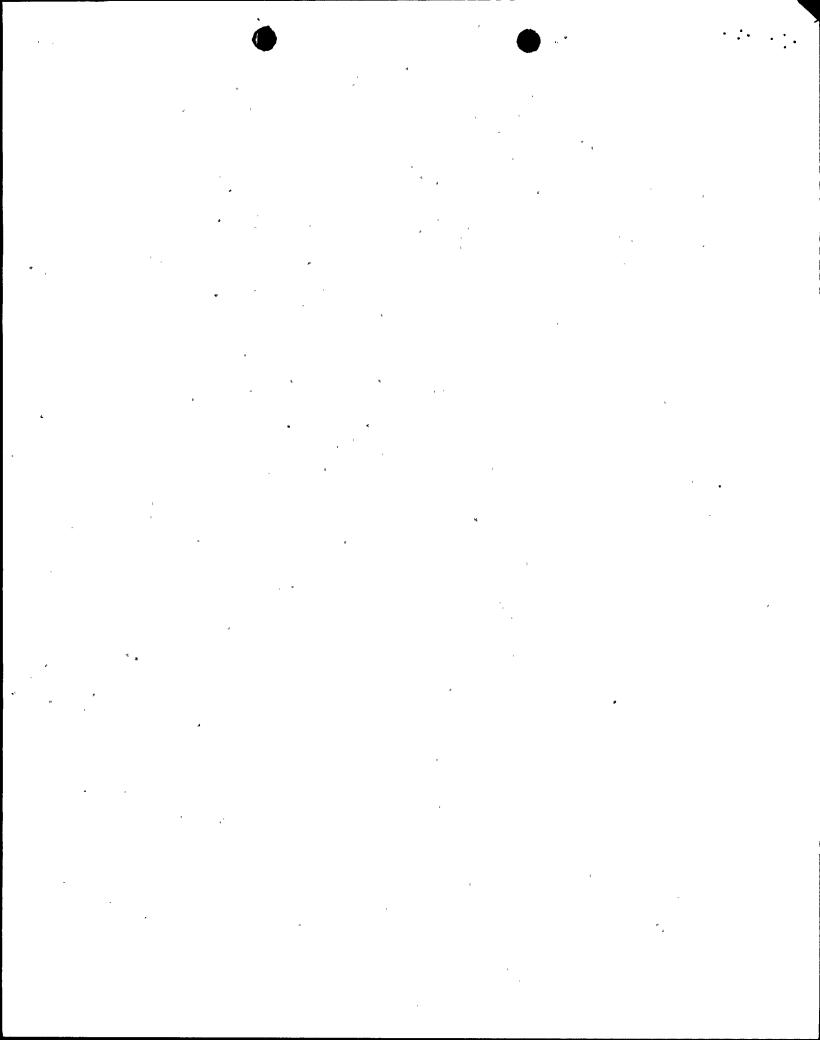
A. Core Spray System (CSS)

1. Core Spray System Testing.

<u> Item</u>	Frequency
a. Simulated Automatic Actuation test	Once/ Operating Cycle
b. Pump Opera- bility	Once/ month
c. (Deleted)	

d. Verify that, when tested pursuant to Specification 4.12.A each loop delivers at least 6,250 gpm against a system head corresponding to:a

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- 3.5.B Residual Heat Removal System (RHRS)
 (LPCI and Containment Cooling)
 - 1. The RHRS shall be operable:
 - (1) prior to a reactor startup from a Cold Condition; or
 - (2) when there is irradiated fuel in the reactor vessel and when the reactor vessel pressure is greater than atmospheric, except as specified in Specification 3.5.B.2 through 3.5.B.7.
 - 2. With the reactor vessel pressure less than 105 psig, the RHRS may be removed from service (except that two RHR pumps-containment cooling mode and associated heat exchangers must remain operable) for a period not to exceed 24 hours while being drained of suppression chamber quality water and filled with primary coolant quality water provided that during cooldown two loops with one pump per loop or one loop with two pumps, and associated diesel generators, in the core spray system are operable.
 - 3. If one RHR pump (LPCI mode) is inoperable, the reactor may remain in operation for a period not to exceed 7 days provided the remaining RHR pumps (LPCI mode) and both access paths of the RHRS (LPCI modé) and the CSS and the diesel generators remain operable.

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4.5.B. Residual Heat Removal System (RHRS)
(LPCI and Containment Cooling)

<u>.</u>

- 1. a. Simulated Once/
 Automatic Operating
 Actuation Cycle
 Test
 - b. Pump Opera- Once/ bility month
 - c. (Deleted)
 - d. When tested in accordance with Specification 4.12.A, each LPCI pump shall deliver at least 9,000 gpm against an indicated system pressure of 125 psig. Two LPCI pumps in the same loop shall deliver 12,000 gpm against an indicated system pressure of 250 psig.
 - e. Valves shall be tested in accordance with Specification 4.12.A.
- 2. An air test on the drywell and torus headers and nozzles shall be conducted once/5 years. A water test may be performed on the torus header in lieu of the air test.
- 3. No additional surveillance required.

3.5.D Equipment Area Coolers

- associated with each RHR pump and the equipment area cooler associated with each set of core spray pumps (A and C or B and D) must be operable at all times when the pump or pumps served by that specific cooler is considered to be operable.
 - 2. When an equipment area cooler is not operable, the pump(s) served by that cooler must be considered inoperable for Technical Specification purposes.

E. <u>High Pressure Coolant Injection</u> System (HPCIS)

- 1. The HPCI system shall be operable:
 - (1) prior to startup from a Cold Shutdown; or
 - (2) whenever there is irradiated fuel in the reactor tor vessel and the reactor vessel pressure is greater than 122 psig, except as specified in Specification 3.5.E.2.

4.5.D Equipment Area Coolers

1. Each equipment area cooler is operated in conjunction with the equipment served by that particular cooler; therefore, the equipment area coolers are tested at the same frequency as the pumps which they serve.

E. <u>High Pressure Coolant Injection</u> System (HPCIS)

1. HPCI Subsystem testing shall be performed as follows:

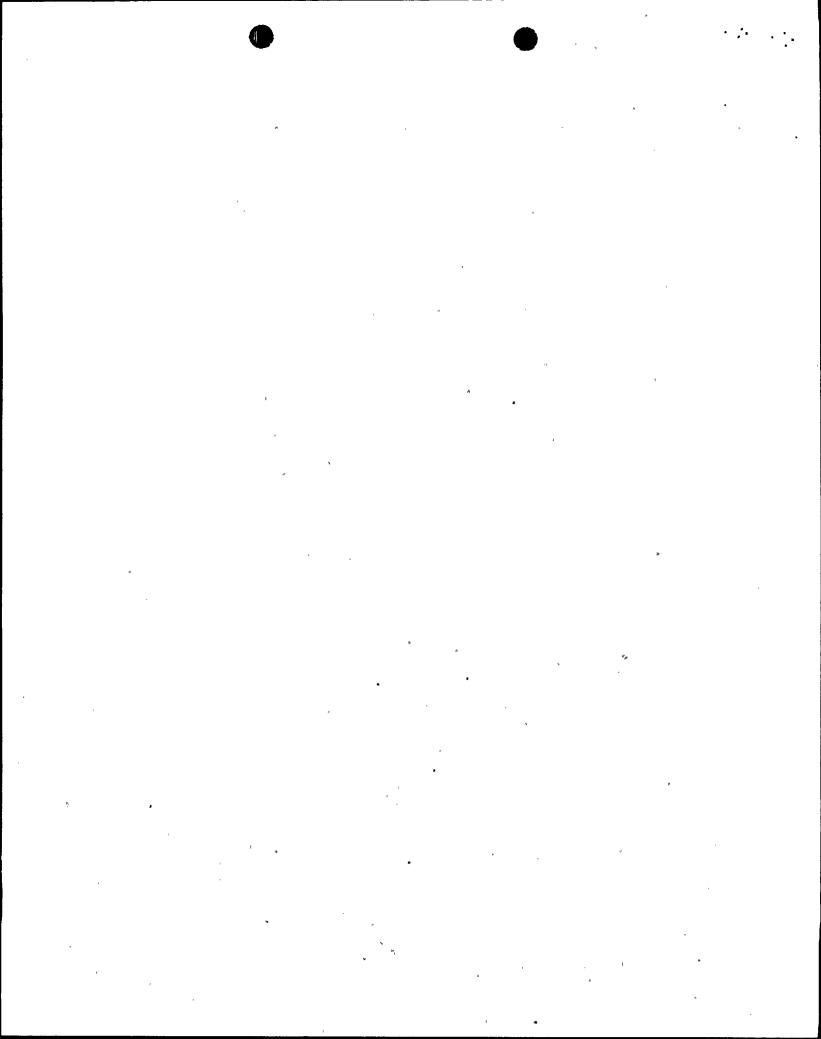
a. Simulated Once/
Automatic operating
Actuation cycle
Test

b. Pump Opera- Once/ bility month

c. (Deleted)

d. When tested in accordance with Specification 4.12.A the HPCI pump shall deliver at least 5000 gpm at normal reactor vessel operating pressure.

e. Valves shall be tested in accordance with Specification 4.12.A.



- E. <u>High Pressure Coolant Injection</u>
 <u>System (HPCIS)</u>
- E. <u>High Pressure Coolant Injection</u>
 System (HPCIS)
 - f. When flow rate tested at equal to or greater than 150 psig steam pressure to the turbine, the HPCI pump shall deliver at least 5000 gpm. This test shall be performed once per operating cycle.



LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENT

3.5.E <u>High Pressure Coolant Injection</u> System (HPCIS)

- 2. If the HPCI system is inoperable, the reactor may remain in operation for a period not to exceed 7 days, provided the ADS, CSS, RHRS (LPCI), and RCICS are operable.
- 3. If Specification 3.5.E.1 or 3.5.E.2 are not met, an orderly shutdown shall be initiated and the reactor vessel pressure shall be reduced to 122 psig or less within 24 hours.

F. Reactor Core Isolation Cooling System (RCICS)

- 1. The RCICS shall be operable:
 - (1) prior to startup from a Cold Condition; or
 - (2) whenever there is irra-diated fuel in the reactor vessel and the reactor vessel pressure is above 122 psig, except as specified in 3.5.F.2.

4.5.E <u>High Pressure Coolant Injection</u> System (HPCIS)

2. No additional surveillance required.

F. Reactor Core Isolation Cooling System (RCICS)

1. RCIC Subsystem testing shall be performed as follows:

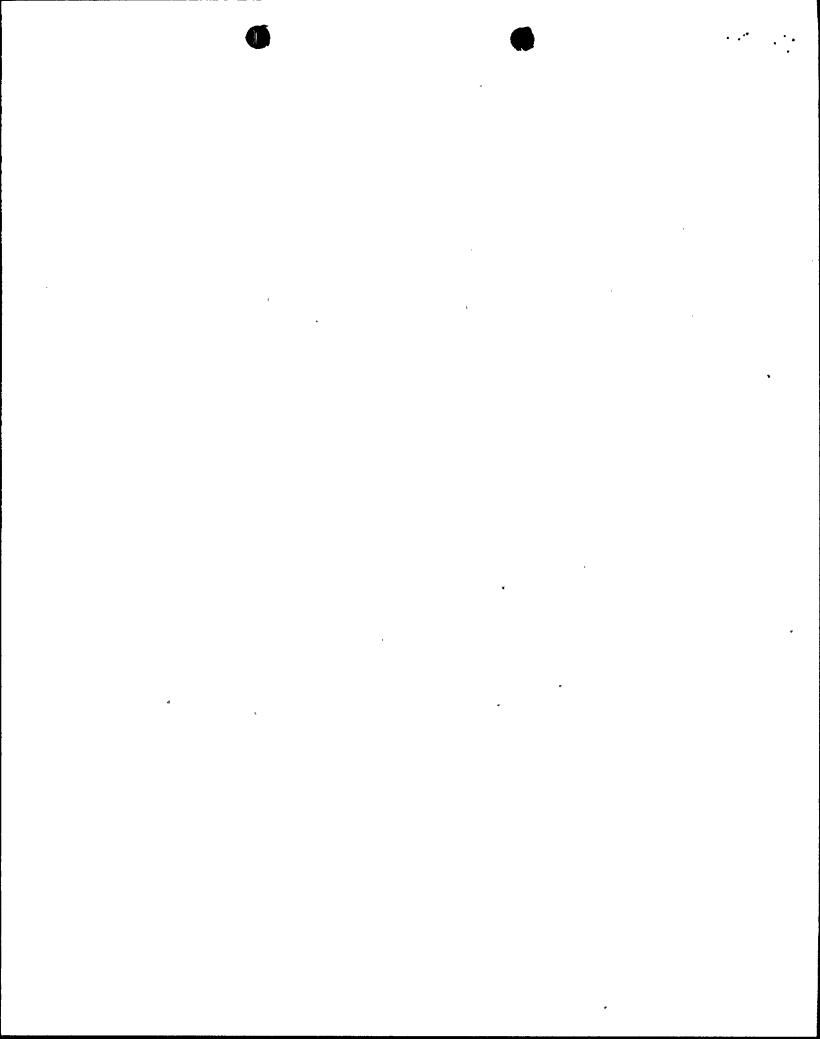
a. Simulated Once/
Automatic operating
Actuation cycle.
Test

b. Pump Opera- Once/ bility month

c. (Deleted)

- d. When tested in accordance with Specification 4.12.A the RCIC pump shall deliver at least 600 gpm at normal reactor operating pressure.
- e. Valves shall be tested in accordance with Specification 4.12.A.

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3.5.F Reactor Core Isolation Cooling System (RCICS)

- 2. If the RCICS is inoperable, the reactor may remain in operation for a period not to exceed 7 days if the HPCIS is operable during such time.
- 3. If specifications 3.5.F.1 or 3.5.F.2 are not met, an orderly shutdown shall be initiated and the reactor shall be depressurized to less than 122 psig within 24 hours.

4.5.F Reactor Core Isolation Cooling System (RCICS)

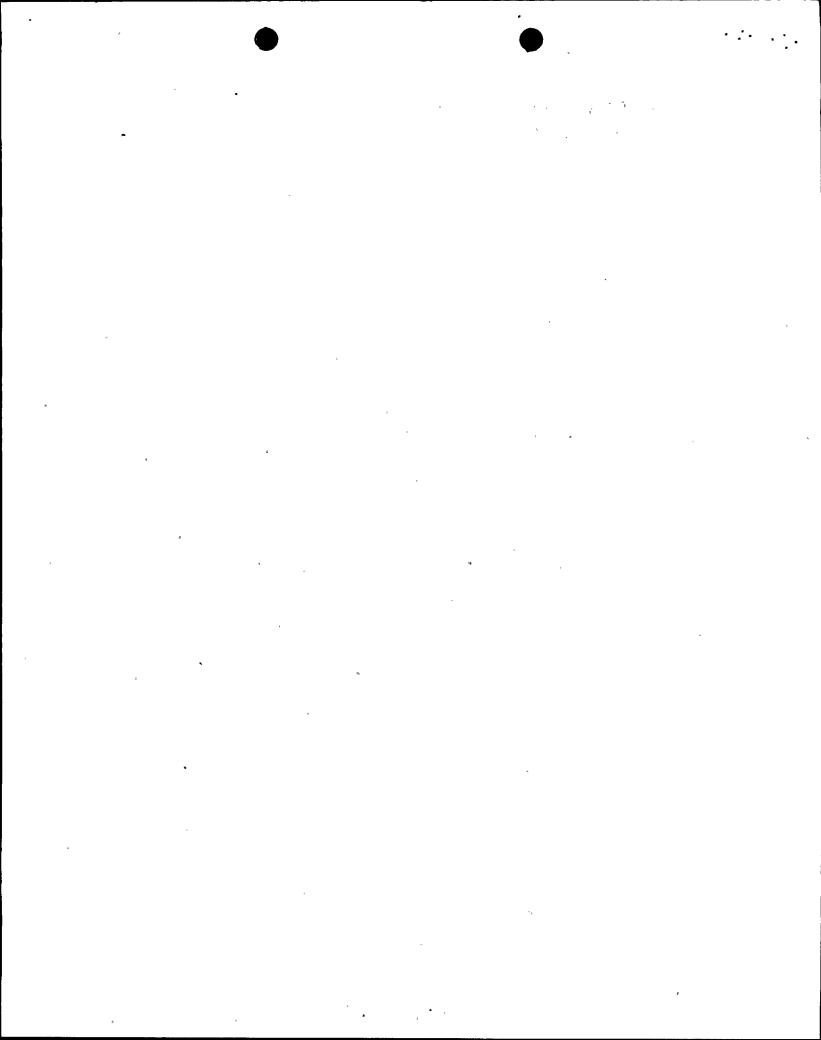
- f. When flow rate tested at equal to or greater than 150 psig steam pressure to the turbine, the RCIC pump shall deliver at least 600 gpm. This test shall be performed once per operating cycle.
- 2. No additional surveillance required.

3.5.G Automatic Depressurization System (ADS)

- 1. Four of the six valves of the Automatic Depressurization System shall be operable:
 - (1) prior to a startup from a Cold Condition, or,
 - (2) whenever there is irradiated fuel in the reactor vessel and the reactor vessel pressure is greater than 105 psig, except as specified in 3.5.G.2 and 3.5.G.3 below.
- 2. If three of the six ADS valves are known to be incapable of automatic operation, the reactor may remain in operation for a period not to exceed 7 days, provided the HPCI system is operable. (Note that the pressure relief function of these valves is assured by section 3.6.D of these specifications and that this specification only applies to the ADS function.) If more than three of the six ADS valves are known to be incapable of automatic operation, an immediate orderly shutdown shall be initiated, with the reactor in a hot shutdown condition in 6 hours and in a cold shutdown condition in the following 18 hours.

4.5.G Automatic Depressurization System (ADS)

- 1. During each operating cycle the following tests shall be performed on the ADS:
 - a. A simulated automatic actuation test shall be performed prior to startup after each refueling outage. Manual surveillance of the relief valves is covered, in 4.6.D.2.
- 2. No additional surveillance required.



4.5 Core and Containment Cooling Systems Surveillance Frequencies

The testing interval for the core and containment cooling systems is based on industry practice, quantitative reliability anaylsis; judgement, and practicality. The core cooling systems have not been designed to be fully testable during operation. For example, in the case of the HPCI, automatic initiation during power operation would result in pumping cold water into the reactor vessel which is not desirable. Complete ADS testing during power operation causes an undesirable loss-of-coolant inventory. To increase the availability of the core and containment cooling system, the components which make up the system; i.e., instrumentation, pumps, valves, etc., are tested frequently. The pumps are also tested each month to assure their operability. A simulated automatic actuation test once each cycle combined with monthly tests of the pumps is deemed to be adequate testing of these systems.

When components and subsystems are out-of-service, overall core and containment cooling reliability is maintained by redundant operable equipment. Out-of-service time is selected as a small fraction of normal surveillance frequency to add further conservatism.

Maximum Average Planar LHGR, LHGR, and MCPR

The MAPLHGR, LHGR, and MCPR shall be checked daily to determine if fuel burnup, or control rod movement has caused changes in power distribution. Since changes due to burnup are slow, and only a few control rods are moved daily, a daily check of power distribution is adequate.

UNIT 3 PROPOSED TECHNICAL SPECIFICATIONS

3.4 STANDBY LIQUID CONTROL SYSTEM

Applicability

Applies to the operating status of the Standby Liquid Control System.

Objective

To assure the availability of a system with the capability to shut down the reactor and maintain the shutdown condition without the use of control rods.

Specification

A. Normal System Availability

1. The standby liquid control system shall be operable at all times when there is fuel in the reactor vessel and the reactor is not in a shutdown condition with all operable control rods fully inserted except as specified in 3.4.B.1.

4.4 STANDBY LIQUID CONTROL SYSTEM

Applicability

Applies to the surveillance requirements of the Standby Liquid Control System.

Objective

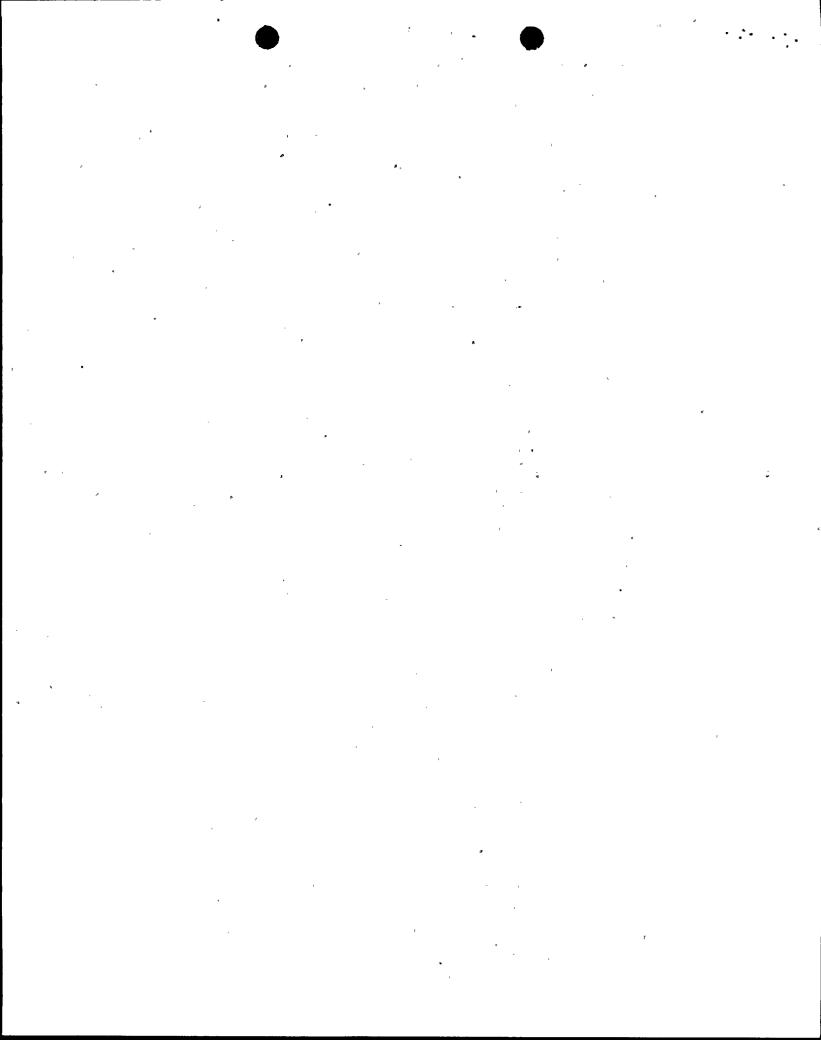
To verify the operability of the Standby Liquid Control System.

Specification

A. Normal System Availability

The operability of the Standby Liquid Control System shall be verified by the performance of the following tests:

- 1. Verify that, when tested pursuant to Specification 4.12.A, each pump develops a flow of at least 39 gpm against a system head of 1275 psig.
- 2. At least once per month each pump loop shall be functionally tested.
- 3. At least once during each operating cycle:
 - a. Check that the setting of the system relief valves is 1425 + 75 psig.
 - b. Manually initiate the system, except explosive valves. Pump boron solution through the



Applicability

Applies to the operational status of the core and containment cooling systems.

Objective

To assure the operability of the core and containment cooling systems under all conditions for which this cooling capability is an essential response to the plant abnormalities.

Specification

A. Core Spray System (CSS)

- 1. The CSS shall be operable:
 - (1) prior to reactor startup from a cold condition, or
 - (2) when there is irradiated fuel in the
 vessel and when the
 reactor vessel pressure
 is greater than atmospheric pressure, except
 as specified in Specification 3.5.A.2.

4.5 CORE AND CONTAINMENT COOLING SYSTEMS

Applicability

Applies to the surveillance requirements of the core and containment cooling systems when the corresponding limiting condition for operation is in effect.

Objective

To verify the operability of the core and containment cooling systems under all conditions for which this cooling capability is an essential response to plant abnormalities.

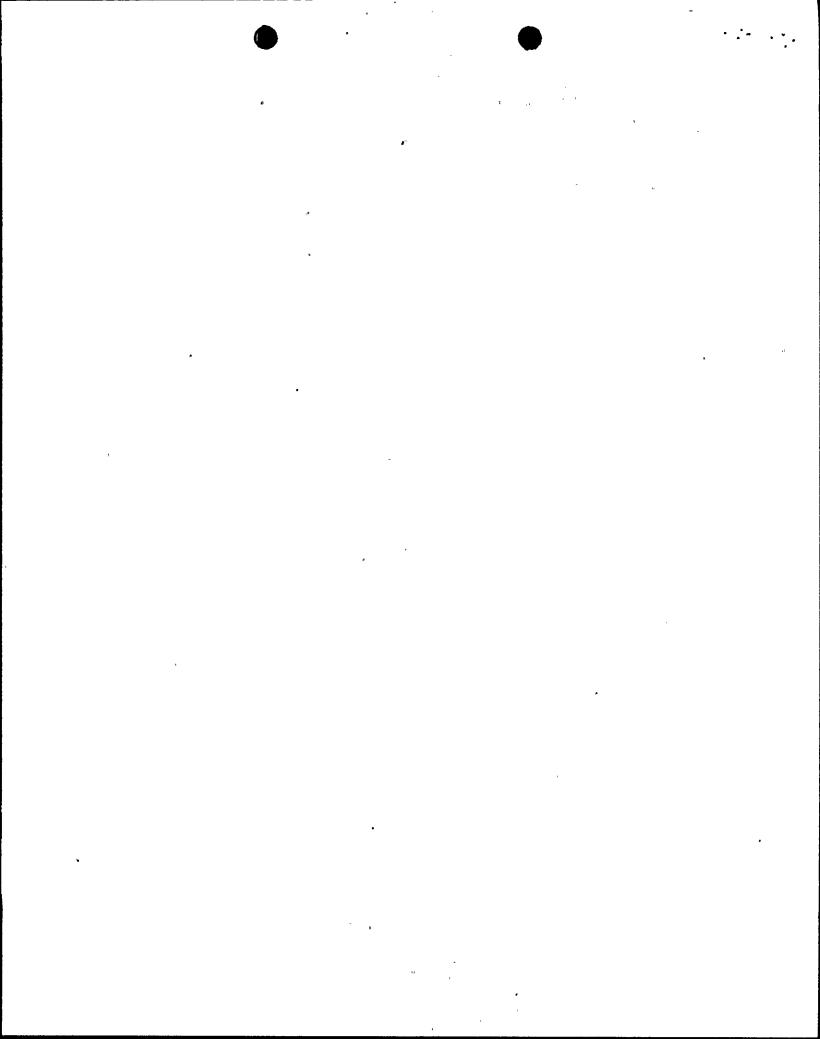
Specification

A. Core Spray System (CSS)

1. Core Spray System Testing.

	<u> Item</u>	Frequency
a.	Simulated Automatic Actuation test	Once/ Operating Cycle
b.	Pump Opera- bility	Once/month
^	(Deleted)	

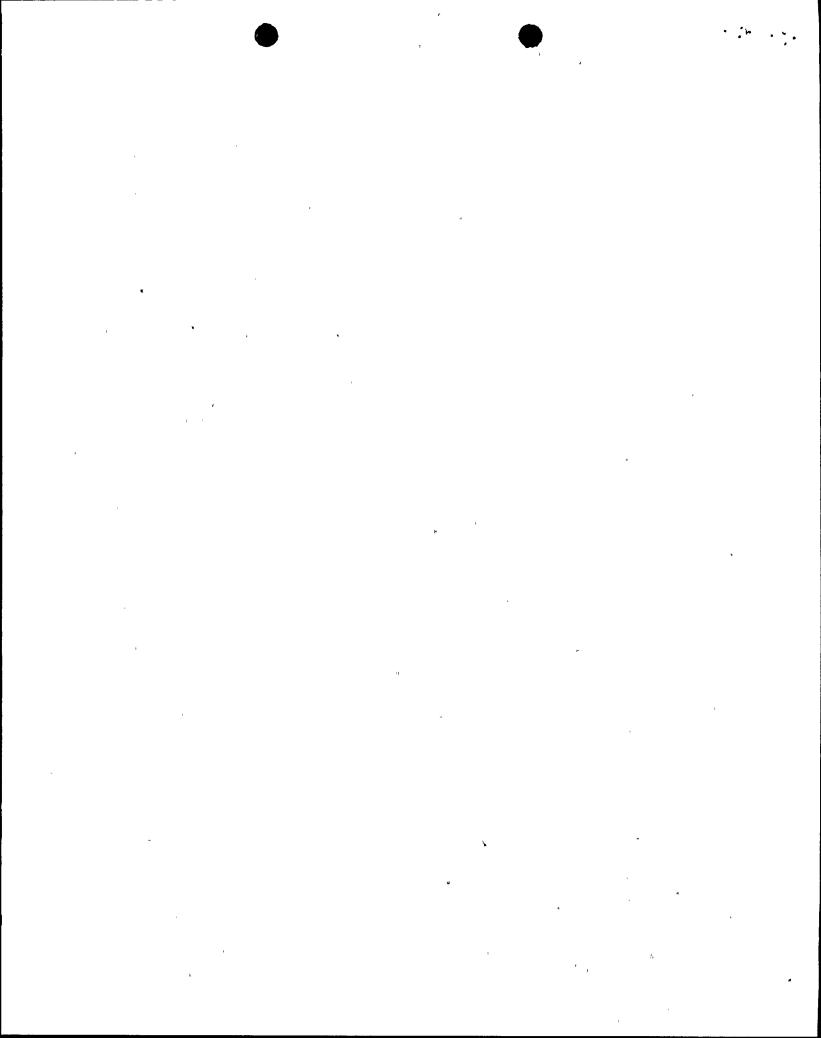
d. Verify that, when tested pursuant to Specification 4.12.A each loop delivers at least 6,250 gpm against a system head corresponding to a



- Residual Heal Removal
 System (RHRS) (LPCI and
 Containment Cooling)
 - The RHRS, shall be operable:
 - (1) prior to a
 reactor startup
 from a Cold
 Condition; or
 - (2) when there is irradiated fuel in the reactor vessel and when the reactor vessel pressure is greater than atmospheric, except as specified in specifications 3.5.8.2, through 3.5.8.7
 - 2. With the reactor vessel pressure less than 105 psiq, the RHR may be removed from service (except that two RHR pumps-containment cooling mode and associated heat exchangers must remain operable) for a period not to exceed 24 hours while being drained of

4.5 CORE AND CONTAINMENT COOLING SYSTEMS

- B. Residual Heat Removal
 System (RHRS) (LPCI and
 Containment Cooling)
 - 1. a. Simulated Once/
 Automatic Operating
 Actuation Cycle
 Test
 - b. Pump Opera- Once/ bility month
 - c. (Deleted)
 - d. When tested in accordance with Specification 4.12.A, each LPCI pump shall deliver at least 9,000 gpm against an indicated system pressure of 125 psig. Two LPCI pumps in the same loop shall deliver 15.000 gpm against an indicated system pressure of 200 psig.
 - e. Valves shall be tested in accordance with Specification 4.12.A.
 - 2. An air test on the drywell and torus headers and nozzles shall be conducted once/5 years. A water test may be performed on the torus header in lieu of the air test.



E. <u>High Pressure Coolant</u> <u>Injection System (HPCIS)</u>

- The HPCI system shall be operable:
 - (1) prior to startup
 from a Cold
 Condition; or
 - (2) whenever there is irradiated fuel in the reactor vessel and the reactor vessel pressure is greater than 122 psiq, except as specified in specification 3.5.E.2.
- 2. If the HPCI system in inoperable, the reactor may remain in operation for a period not to exceed 7 days, provided the ADS, CSS, RHRS (LPCI), and RCICS are operable.
- 3. If specifications
 3.5.E.1 or 3.5.E.2
 are not met, an
 orderly shutdown
 shall be initiated
 and the reactor
 vessle pressure shall
 be reduced to 122
 psig or less within
 24 hours.

4.5 CORE AND CONTAINMENT COOLING SYSTEMS

E. <u>High Pressure Coolant</u> Injection System (HPCIS)

- 1. HPCI Subsystem
 testing shall be
 performed as follows:
 - a. Simulated Once/
 Automatic operating
 Actuation cycle
 Test
 - b. Pump Opera- Once/ bility month
 - c. (Deleted)
 - d. When tested in accordance with Specification 4.12.A the HPCI pump shall deliver at least 5000 gpm at normal reactor vessel operating pressure.
 - e. Valves shall be tested in accordance with Specification 4.12.A.
 - f. When flow rate tested at equal to or greater than 150 psig steam pressure to the turbine, the HPCI pump shall deliver at least 5000 gpm. This test shall be performed once per operating cycle.
- 2. No additional surveillance required.

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F. Reactor Core Isolation Cooling System (RCICS)

- The RCICS shall be operable:
 - (1) Prior to startup
 from a Cold
 Condition; or
 - (2) whenever there is irradiated fuel in the reactor vessel and the reactor vessel pressure is above 122 psiq, except as specified in 3.5.F.2.
- 2. If the RCICS is inoperable, the reactor may remain in operation for a period not to exceed 7 days if the HPCIS is operable during such time.
- 3. If specifications
 3.5.F.1 or 3.5.F.2
 are not met, an
 orderly shutdown
 shall be initiated
 and the reactor shall
 be depressurized to
 less than 105 psig
 within 24 hours.

4.5 CORE AND CONTAINMENT COOLING SYSTEMS:

- F. Reactor Core Isolation Cooling
 System (RCICS)
 - 1. RCIC Subsystem testing shall be performed as follows:
 - a. Simulated Once/
 Automatic operating
 Actuation cycle
 Test
 - b. Pump Opera- Once/ bility month
 - c. (Deleted)
 - d. When tested in accordance with Specification 4.12.A the RCIC pump shall deliver at least 600 gpm at normal reactor operating pressure.
 - e. Valves shall be tested in accordance with Specification 4.12.A.
 - f. When flow rate tested at equal to or greater than 150 psig steam pressure to the turbine, the RCIC pump shall deliver at least 600 gpm. This test shall be performed once per operating cycle.
 - 2. No additional surveillance required.

4.5 Core and Containment Cooling Systems Surveillance Frequencies

The testing interval for the core and containment cooling systems is based on industry practice, quantitative reliability analysis, judgement, and practicality. The core cooling systems have not been designed to be fully testable during operation. For example, in the case of the HPCI, automatic initiation during power operation would result in pumping cold water into the reactor vessel which is not desirable. Complete ADS testing during power operation causes an undesirable loss-of-coolant inventory. To increase the availability of the core and containment cooling system, the components which make up the system; i.e., instrumentation, pumps, valves, etc., are tested frequently. The pumps are also tested each month to assure their operability. A simulated automatic actuation test once each cycle combined with monthly tests of the pumps is deemed

When components and subsystems are out-of-service, overall core and containment cooling reliability is maintained by redundant operable equipment. Out-of-service time is selected as a small fraction of normal surveillance frequency to add further conservatism.

Maximum Average Planar LHGR, LHGR, and MCPR

to be adequate testing of these systems.

The MAPLHGR, LHGR, and MCPR shall be checked daily to determine if fuel burnup, or control rod movement has caused changes in power distribution. Since changes due to burnup are slow, and only a few control rods are moved daily, a daily check of power distribution is adequate.

ENCLOSURE 2

DESCRIPTION AND JUSTIFICATION TVA BFNP TS 181 SUPPLEMENT 1

Reference: TVA letter from L. M. Mills to H. R. Denton dated November 12, 1982 (TVA BFNP TS 181)

The referenced letter submitted proposed technical specification revisions for implementing the ASME Section XI inservice pump and valve testing program at Browns Ferry. Part of that submittal proposed deletion of the requirement to conduct monthly operability testing of pumps and valves. We were informed by the NRC staff (Browns Ferry Project Manager) that the proposed change would have to be prenoticed as a possible significant hazards consideration. We decided to avoid that situation by submitting additional revisions to reinstate the monthly testing requirement. The specifications submitted do that.

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