

ENCLOSURE 2

TENNESSEE VALLEY AUTHORITY  
BROWNS FERRY NUCLEAR PLANT (BFN)  
UNITS 1, 2, AND 3

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE TS-375  
MARKED PAGES

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I. AFFECTED PAGE LIST

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II. MARKED PAGES

See attached.

TABLE 3.2.8  
INSTRUMENTATION THAT INITATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No.  
Operable Per  
Trip Sys(1)

Function	Trip Level Setting	Action	Remarks
Instrument Channel - Reactor Low Water Level	≥ 470" above vessel zero	A	1. Below trip setting initiates HPCI.
Instrument Channel - Reactor Low Water Level	≥ 470" above vessel zero.	A	1. Multiplier relays initiate RCIC.
Instrument Channel - Reactor Low Water Level (LIS-3-58A-D, SW #1)	≥ 398" above vessel zero.	A	1. Below trip setting initiates CSS.  Multiplier relays initiate LPCI.  2. Multiplier relay from CSS initiates accident signal (15).
Instrument Channel - Reactor Low Water Level (LIS-3-58A-D, SW #2)	≥ 398" above vessel zero.	A	1. Below trip settings, in conjunction with drywell high pressure, low water level permissive, ADS timer timed out and CSS or RHR pump running, initiates ADS.  2. Below trip settings, in conjunction with low reactor water level permissive, ADS timer timed out, ADS high drywell pressure bypass timer timed out, CSS or RHR pump running, initiates ADS.
Instrument Channel - Reactor Low Water Level Permissive (LIS-3-184 & 185, SW #1)	≥ 544" above vessel zero.	A	1. Below trip setting permissive for initiating signals on ADS.
Instrument Channel - Reactor Low Water Level (LIS-3-52 and 62, SW #1)	≥ 312 5/16" above vessel zero. A (2/3 core height)	A	1. Below trip setting prevents inadvertent operation of containment spray during accident condition.

BFN  
Unit 1

3.2/4.2-14

AMENDMENT NO. 222

JUL 17 1995

FEB 07 1991

10. Only one trip system for each cooler fan.
11. In only two of the four 4160-V shutdown boards. See note 13.
12. In only one of the four 4160-V shutdown boards. See note 13.
13. An emergency 4160-V shutdown board is considered a trip system.
14. RHRSW pump would be inoperable. Refer to Section 4.5.C for the requirements of a RHRSW pump being inoperable.
15. The accident signal is the satisfactory completion of a one-out-of-two taken twice logic of the drywell high pressure plus low reactor pressure or the vessel low water level ( $\geq 378$ " above vessel zero) originating in the core spray system trip system.
16. The ADS circuitry is capable of accomplishing its protective action with one OPERABLE trip system. Therefore, one trip system may be taken out of service for functional testing and calibration for a period not to exceed eight hours.
17. Two RPT systems exist, either of which will trip both recirculation pumps. The systems will be individually functionally tested monthly. If the test period for one RPT system exceeds two consecutive hours, the system will be declared inoperable. If both RPT systems are inoperable or if one RPT system is inoperable for more than 72 hours, an orderly power reduction shall be initiated and reactor power shall be less than 30 percent within four hours.
18. Not required to be OPERABLE in the COLD SHUTDOWN CONDITION.

19. See Insert -A

Note 19 (Insert A)

Only one trip system will be required to be OPERABLE during testing of the reactor coolant system instrument line flow check valves in accordance with TS section 4.7.D.1.d, provided the reactor is in COLD SHUTDOWN. Manual and automatic initiating capability of CSS and LPCI will be available but with a reduced number of instrument channels.

TABLE 3.2.B  
INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

BFN Unit	Minimum No. Operable Per Trip Sys(1)	Function	Trip Level Setting	Action	Remarks
2	2	Instrument Channel - Reactor Low Water Level (LIS-3-58A-D)	≥ 470" above vessel zero.	A	1. Below trip setting initiates HPCI.
	2	Instrument Channel - Reactor Low Water Level (LIS-3-58A-D)	≥ 470" above vessel zero.	A	1. Multiplier relays initiate RCIC.
	*2 (19)	Instrument Channel - Reactor Low Water Level (LS-3-58A-D)	≥ 398" above vessel zero.	A	1. Below trip setting initiates CSS.  Multiplier relays initiate LPCI.  2. Multiplier relay from CSS initiates accident signal (15).
3.2/4.2-14	2(16)	Instrument Channel - Reactor Low Water Level (LS-3-58A-D)	≥ 398" above vessel zero.	A	1. Below trip settings, in conjunction with drywell high pressure, low water level permissive, ADS timer timed out and CSS or RHR pump running, initiates ADS.  2. Below trip settings, in conjunction with low reactor water level permissive, ADS timer timed out, ADS high drywell pressure bypass timer timed out, CSS or RHR pump running, initiates ADS.
	1(16)	Instrument Channel - Reactor Low Water Level Permissive (LIS-3-184, 185)	≥ 544" above vessel zero.	A	1. Below trip setting permissive for initiating signals on ADS.
AMENDMENT NO. 219	1	Instrument Channel - Reactor Low Water Level (LIS-3-52 and LIS-3-62A)	≥ 312 5/16" above vessel zero. (2/3 core height)	A	1. Below trip setting prevents inadvertent operation of containment spray during accident condition.

\*Only one trip system will be required to be OPERABLE during the period that the Reactor Vessel water level instrumentation modification requested by NRC Bulletin 93-03 is being performed, provided that the reactor is in the COLD SHUTDOWN CONDITION. Manual and automatic initiating capability of CSS and LPCI will be available, but with a reduced number of instrument channels.

NOV 12 1993

FEB 07 1991

10. Only one trip system for each cooler fan.
11. In only two of the four 4160-V shutdown boards. See note 13.
12. In only one of the four 4160-V shutdown boards. See note 13.
13. An emergency 4160-V shutdown board is considered a trip system.
14. RHRSW pump would be inoperable. Refer to Section 4.5.C for the requirements of a RHRSW pump being inoperable.
15. The accident signal is the satisfactory completion of a one-out-of-two taken twice logic of the drywell high pressure plus low reactor pressure or the vessel low water level ( $\geq 398$ " above vessel zero) originating in the core spray system trip system.
16. The ADS circuitry is capable of accomplishing its protective action with one OPERABLE trip system. Therefore, one trip system may be taken out of service for functional testing and calibration for a period not to exceed eight hours.
17. Two RPT systems exist, either of which will trip both recirculation pumps. The systems will be individually functionally tested monthly. If the test period for one RPT system exceeds two consecutive hours, the system will be declared inoperable. If both RPT systems are inoperable or if one RPT system is inoperable for more than 72 hours, an orderly power reduction shall be initiated and reactor power shall be less than 30 percent within four hours.
18. Not required to be OPERABLE in the COLD SHUTDOWN CONDITION.

19. See Insert A

Note 19 (Insert A)

Only one trip system will be required to be OPERABLE during testing of the reactor coolant system instrument line flow check valves in accordance with TS section 4.7.D.1.d, provided the reactor is in COLD SHUTDOWN. Manual and automatic initiating capability of CSS and LPCI will be available but with a reduced number of instrument channels.

TABLE 3.2.B  
INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. Operable Per Trip Sys(1)	Function	Trip Level Setting	Action	Remarks
2	Instrument Channel - Reactor Low Water Level (LIS-3-58A-D)	≥ 470" above vessel zero.	A	1. Below trip setting initiates HPCI.
2	Instrument Channel - Reactor Low Water Level (LIS-3-58A-D)	≥ 470" above vessel zero.	A	1. Multiplier relays initiate RCIC.
2 (19)	Instrument Channel - Reactor Low Water Level (LS-3-58A-D)	≥ 398" above vessel zero.	A	1. Below trip setting initiates CSS.  Multiplier relays initiate LPCI.  2. Multiplier relay from CSS initiates accident signal (15).
2(16)	Instrument Channel - Reactor Low Water Level (LS-3-58A-D)	≥ 398" above vessel zero.	A	1. Below trip settings, in conjunction with drywell high pressure, low water level permissive, ADS timer timed out and CSS or RHR pump running, initiates ADS.  2. Below trip settings, in conjunction with low reactor water level permissive, ADS timer timed out, ADS high drywell pressure bypass timer timed out, CSS or RHR pump running, initiates ADS.
1(16)	Instrument Channel - Reactor Low Water Level Permissive (LIS-3-184, 185)	≥ 544" above vessel zero.	A	1. Below trip setting permissive for initiating signals on ADS.
1	Instrument Channel - Reactor Low Water Level (LIS-3-52 and LIS-3-62A)	≥ 312 5/16" above vessel zero. A (2/3 core height)	A	1. Below trip setting prevents inadvertent operation of containment spray during accident condition.

BN  
Date 3

3.2/4.2-14

AMENDMENT NO. 198

JUL 17 1985



JUL 17 1995

10. Only one trip system for each cooler fan.
11. In only two of the four 4160-V shutdown boards. See note 13.
12. In only one of the four 4160-V shutdown boards. See note 13.
13. An emergency 4160-V shutdown board is considered a trip system.
14. RHRSW pump would be inoperable. Refer to Section 4.5.C for the requirements of a RHRSW pump being inoperable.
15. The accident signal is the satisfactory completion of a one-out-of-two taken twice logic of the drywell high pressure plus low reactor pressure or the vessel low water level ( $\geq 398$ " above vessel zero) originating in the core spray system trip system.
16. The ADS circuitry is capable of accomplishing its protective action with one OPERABLE trip system. Therefore, one trip system may be taken out of service for functional testing and calibration for a period not to exceed eight hours.
17. Two EPT systems exist, either of which will trip both recirculation pumps. The systems will be individually functionally tested monthly. If the test period for one EPT system exceeds two consecutive hours, the system will be declared inoperable. If both EPT systems are inoperable or if one EPT system is inoperable for more than 72 hours, an orderly power reduction shall be initiated and reactor power shall be less than 30 percent within four hours.
18. Not required to be OPERABLE in the COLD SHUTDOWN CONDITION.

19. See Insert A

Note 19 (Insert A)

Only one trip system will be required to be OPERABLE during testing of the reactor coolant system instrument line flow check valves in accordance with TS section 4.7.D.1.d, provided the reactor is in COLD SHUTDOWN. Manual and automatic initiating capability of CSS and LPCI will be available but with a reduced number of instrument channels.

ENCLOSURE 3

TENNESSEE VALLEY AUTHORITY  
BROWNS FERRY NUCLEAR PLANT (BFN)  
UNITS 1, 2, AND 3

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE TS-375  
REVISED PAGES

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I. AFFECTED PAGE LIST

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II. REVISED PAGES

See attached.

\* - Denotes spillover page

TABLE 3.2.B  
INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. Operable Per Trip Sys(1)	Function	Trip Level Setting	Action	Remarks
2	Instrument Channel - Reactor Low Water Level	≥ 470" above vessel zero	A	1. Below trip setting initiates HPCI.
2	Instrument Channel - Reactor Low Water Level	≥ 470" above vessel zero.	A	1. Multiplier relays initiate RCIC.
2(19)	Instrument Channel - Reactor Low Water Level (LIS-3-58A-D, SW #1)	≥ 398" above vessel zero.	A	1. Below trip setting initiates CSS.  Multiplier relays initiate LPCI.  2. Multiplier relay from CSS initiates accident signal (15).
2(16)	Instrument Channel - Reactor Low Water Level (LIS-3-58A-D, SW #2)	≥ 398" above vessel zero.	A	1. Below trip settings, in conjunction with drywell high pressure, low water level permissive, ADS timer timed out and CSS or RHR pump running, initiates ADS.  2. Below trip settings, in conjunction with low reactor water level permissive, ADS timer timed out, ADS high drywell pressure bypass timer timed out, CSS or RHR pump running, initiates ADS.
1(16)	Instrument Channel - Reactor Low Water Level Permissive (LIS-3-184 & 185, SW #1)	≥ 544" above vessel zero.	A	1. Below trip setting permissive for initiating signals on ADS.

TABLE 3.2.B (Continued)

Minimum No. Operable Per Trip Sys(1)	Function	Trip Level Setting	Action	Remarks
1	Instrument Channel - Reactor Low Water Level (LITS-3-52 and 62, SW #1)	$\geq 312 \frac{5}{16}$ " above vessel zero. (2/3 core height)	A	1. Below trip setting prevents inadvertent operation of containment spray during accident condition.
2(18)	Instrument Channel - Drywell High Pressure (PS-64-58 E-H)	$1 \leq p \leq 2.5$ psig	A	1. Below trip setting prevents inadvertent operation of containment spray during accident conditions.
2(18)	Instrument Channel - Drywell High Pressure (PS-64-58 A-D, SW #2)	$\leq 2.5$ psig	A	1. Above trip setting in conjunction with low reactor pressure initiates CSS. Multiplier relays initiate HPCI.  2. Multiplier relay from CSS initiates accident signal. (15)
2(18)	Instrument Channel - Drywell High Pressure (PS-64-58A-D, SW #1)	$\leq 2.5$ psig	A	1. Above trip setting in conjunction with low reactor pressure initiates LPCI.
2(16)(18)	Instrument Channel - Drywell High Pressure (PS-64-57A-D)	$\leq 2.5$ psig	A	1. Above trip setting, in conjunction with low reactor water level, low reactor water level permissive, ADS timer timed out, and CSS or RHR pump running, initiates ADS.

NOTES FOR TABLE 3.2.B

1. Whenever any CSCS System is required by Section 3.5 to be OPERABLE, there shall be two OPERABLE trip systems except as noted. If a requirement of the first column is reduced by one, the indicated action shall be taken. If the same function is inoperable in more than one trip system or the first column reduced by more than one, action B shall be taken.  
  
Action:
  - A. Repair in 24 hours. If the function is not OPERABLE in 24 hours, take action B.
  - B. Declare the system or component inoperable.
  - C. Immediately take action B until power is verified on the trip system.
  - D. No action required; indicators are considered redundant.
  - E. Within 24 hours restore the inoperable channel(s) to OPERABLE status or place the inoperable channel(s) in the tripped condition.
2. In only one trip system.
3. Not considered in a trip system.
4. Deleted
5. With diesel power, each RHRS pump is scheduled to start immediately and each CSS pump is sequenced to start about 7 sec. later.
6. With normal power, one CSS and one RHRS pump is scheduled to start instantaneously, one CSS and one RHRS pump is sequenced to start after about 7 sec. with similar pumps starting after about 14 sec. and 21 sec., at which time the full complement of CSS and RHRS pumps would be operating.
7. The RCIC and HPCI steam line high flow trip level settings are given in terms of differential pressure. The RCICS setting of 450" of water corresponds to at least 150 percent above maximum steady state steam flow to assure that spurious isolation does not occur while ensuring the initiation of isolation following a postulated steam line break. Similarly, the HPCIS setting of 90 psi corresponds to at least 150 percent above maximum steady state flow while also ensuring the initiation of isolation following a postulated break.
8. Note 1 does not apply to this item.
9. The head tank is designed to assure that the discharge piping from the CS and RHR pumps are full. The pressure shall be maintained at or above the values listed in 3.5.H, which ensures water in the discharge piping and up to the head tank.

NOTES FOR TABLE 3.2.B (Cont'd)

10. Only one trip system for each cooler fan.
11. In only two of the four 4160-V shutdown boards. See note 13.
12. In only one of the four 4160-V shutdown boards. See note 13.
13. An emergency 4160-V shutdown board is considered a trip system.
14. RHRSW pump would be inoperable. Refer to Section 4.5.C for the requirements of a RHRSW pump being inoperable.
15. The accident signal is the satisfactory completion of a one-out-of-two taken twice logic of the drywell high pressure plus low reactor pressure or the vessel low water level ( $\geq 398$ " above vessel zero) originating in the core spray system trip system.
16. The ADS circuitry is capable of accomplishing its protective action with one OPERABLE trip system. Therefore, one trip system may be taken out of service for functional testing and calibration for a period not to exceed eight hours.
17. Two RPT systems exist, either of which will trip both recirculation pumps. The systems will be individually functionally tested monthly. If the test period for one RPT system exceeds two consecutive hours, the system will be declared inoperable. If both RPT systems are inoperable or if one RPT system is inoperable for more than 72 hours, an orderly power reduction shall be initiated and reactor power shall be less than 30 percent within four hours.
18. Not required to be OPERABLE in the COLD SHUTDOWN CONDITION.
19. Only one trip system will be required to be OPERABLE during testing of the reactor coolant system instrument line flow check valves in accordance with TS Section 4.7.D.1.d, provided the reactor is in COLD SHUTDOWN. Manual and automatic initiating capability of CSS and LPCI will be available but with a reduced number of instrument channels.

TABLE 3.2.B  
INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. Operable Per Trip Sys(1)	Function	Trip Level Setting	Action	Remarks
2	Instrument Channel - Reactor Low Water Level (LIS-3-58A-D)	≥ 470" above vessel zero.	A	1. Below trip setting initiates HPCI.
2	Instrument Channel - Reactor Low Water Level (LIS-3-58A-D)	≥ 470" above vessel zero.	A	1. Multiplier relays initiate RCIC.
*2(19)	Instrument Channel - Reactor Low Water Level (LS-3-58A-D)	≥ 398" above vessel zero.	A	1. Below trip setting initiates CSS.  Multiplier relays initiate LPCI.  2. Multiplier relay from CSS initiates accident signal (15).
2(16)	Instrument Channel - Reactor Low Water Level (LS-3-58A-D)	≥ 398" above vessel zero.	A	1. Below trip settings, in conjunction with drywell high pressure, low water level permissive, ADS timer timed out and CSS or RHR pump running, initiates ADS.  2. Below trip settings, in conjunction with low reactor water level permissive, ADS timer timed out, ADS high drywell pressure bypass timer timed out, CSS or RHR pump running, initiates ADS.

\*Only one trip system will be required to be OPERABLE during the period that the Reactor Vessel water level instrumentation modification requested by NRC Bulletin 93-03 is being performed, provided that the reactor is in the COLD SHUTDOWN CONDITION. Manual and automatic initiating capability of CSS and LPCI will be available, but with a reduced number of instrument channels.



TABLE 3.2.B (Continued)

Minimum No. Operable Per Trip Sys(1)	Function	Trip Level Setting	Action	Remarks
1(16)	Instrument Channel - Reactor Low Water Level Permissive (LIS-3-184, 185)	$\geq 544"$ above vessel zero.	A	1. Below trip setting permissive for initiating signals on ADS.
1	Instrument Channel - Reactor Low Water Level (LIS-3-52 and LIS-3-62A)	$\geq 312 \frac{5}{16}"$ above vessel zero. (2/3 core height)	A	1. Below trip setting prevents inadvertent operation of containment spray during accident condition.
2(18)	Instrument Channel - Drywell High Pressure (PIS-64-58 E-H)	$1 \leq p \leq 2.5$ psig	A	1. Below trip setting prevents inadvertent operation of containment spray during accident conditions.
2(18)	Instrument Channel - Drywell High Pressure (PIS-64-58 A-D)	$\leq 2.5$ psig	A	1. Above trip setting in con- junction with low reactor pressure initiates CSS. Multiplier relays initiate HPCI.  2. Multiplier relay from CSS initiates accident signal. (15)
2(18)	Instrument Channel - Drywell High Pressure (PIS-64-58A-D)	$\leq 2.5$ psig	A	1. Above trip setting in conjunction with low reactor pressure initiates LPCI.
2(16)(18)	Instrument Channel - Drywell High Pressure (PIS-64-57A-D)	$\leq 2.5$ psig	A	1. Above trip setting, in conjunction with low reactor water level, low reactor water level permissive, ADS timer timed out, and CSS or RHR pump running, initiates ADS.

NOTES FOR TABLE 3.2.B

1. Whenever any CSCS System is required by Section 3.5 to be OPERABLE, there shall be two OPERABLE trip systems except as noted. If a requirement of the first column is reduced by one, the indicated action shall be taken. If the same function is inoperable in more than one trip system or the first column reduced by more than one, action B shall be taken.

Action:

- A. Repair in 24 hours. If the function is not OPERABLE in 24 hours, take action B.
  - B. Declare the system or component inoperable.
  - C. Immediately take action B until power is verified on the trip system.
  - D. No action required; indicators are considered redundant.
  - E. Within 24 hours restore the inoperable channel(s) to OPERABLE status or place the inoperable channel(s) in the tripped condition.
2. In only one trip system.
  3. Not considered in a trip system.
  4. Deleted.
  5. With diesel power, each RHRS pump is scheduled to start immediately and each CSS pump is sequenced to start about 7 seconds later.
  6. With normal power, one CSS and one RHRS pump is scheduled to start instantaneously, one CSS and one RHRS pump is sequenced to start after about 7 sec. with similar pumps starting after about 14 sec. and 21 sec., at which time the full complement of CSS and RHRS pumps would be operating.
  7. The RCIC and HPCI steam line high flow trip level settings are given in terms of differential pressure. The RCICS setting of 450" of water corresponds to at least 150 percent above maximum steady state steam flow to assure that spurious isolation does not occur while ensuring the initiation of isolation following a postulated steam line break. Similarly, the HPCIS setting of 90 psi corresponds to at least 150 percent above maximum steady state flow while also ensuring the initiation of isolation following a postulated break.
  8. Note 1 does not apply to this item.
  9. The head tank is designed to assure that the discharge piping from the CS and RHR pumps are full. The pressure shall be maintained at or above the values listed in 3.5.H, which ensures water in the discharge piping and up to the head tank.

NOTES FOR TABLE 3.2.B (Cont'd)

10. Only one trip system for each cooler fan.
11. In only two of the four 4160-V shutdown boards. See note 13.
12. In only one of the four 4160-V shutdown boards. See note 13.
13. An emergency 4160-V shutdown board is considered a trip system.
14. RHRSW pump would be inoperable. Refer to Section 4.5.C for the requirements of a RHRSW pump being inoperable.
15. The accident signal is the satisfactory completion of a one-out-of-two taken twice logic of the drywell high pressure plus low reactor pressure or the vessel low water level ( $\geq 398$ " above vessel zero) originating in the core spray system trip system.
16. The ADS circuitry is capable of accomplishing its protective action with one OPERABLE trip system. Therefore, one trip system may be taken out of service for functional testing and calibration for a period not to exceed eight hours.
17. Two RPT systems exist, either of which will trip both recirculation pumps. The systems will be individually functionally tested monthly. If the test period for one RPT system exceeds two consecutive hours, the system will be declared inoperable. If both RPT systems are inoperable or if one RPT system is inoperable for more than 72 hours, an orderly power reduction shall be initiated and reactor power shall be less than 30 percent within four hours.
18. Not required to be OPERABLE in the COLD SHUTDOWN CONDITION.
19. Only one trip system will be required to be OPERABLE during testing of the reactor coolant system instrument line flow check valves in accordance with TS Section 4.7.D.1.d, provided the reactor is in COLD SHUTDOWN. Manual and automatic initiating capability of CSS and LPCI will be available but with a reduced number of instrument channels.

TABLE 3.2.B  
INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. Operable Per Trip Sys(1)	Function	Trip Level Setting	Action	Remarks
2	Instrument Channel - Reactor Low Water Level (LIS-3-58A-D)	≥ 470" above vessel zero.	A	1. Below trip setting initiates HPCI.
2	Instrument Channel - Reactor Low Water Level (LIS-3-58A-D)	≥ 470" above vessel zero.	A	1. Multiplier relays initiate RCIC.
2(19)	Instrument Channel - Reactor Low Water Level (LS-3-58A-D)	≥ 398" above vessel zero.	A	1. Below trip setting initiates CSS.  Multiplier relays initiate LPCI.  2. Multiplier relay from CSS initiates accident signal (15).
2(16)	Instrument Channel - Reactor Low Water Level (LS-3-58A-D)	≥ 398" above vessel zero.	A	1. Below trip settings, in conjunction with drywell high pressure, low water level permissive, ADS timer timed out and CSS or RHR pump running, initiates ADS.  2. Below trip settings, in conjunction with low reactor water level permissive, ADS timer timed out, ADS high drywell pressure bypass timer timed out, CSS or RHR pump running, initiates ADS.
1(16)	Instrument Channel - Reactor Low Water Level Permissive (LIS-3-184, 185)	≥ 544" above vessel zero.	A	1. Below trip setting permissive for initiating signals on ADS.

TABLE 3.2.B (Continued)

Minimum No. Operable Per Trip Sys(1)	Function	Trip Level Setting	Action	Remarks
1	Instrument Channel - Reactor Low Water Level (LIS-3-52 and LIS-3-62A)	$\geq 312 \frac{5}{16}$ " above vessel zero. (2/3 core height)	A	1. Below trip setting prevents inadvertent operation of containment spray during accident condition.
2(18)	Instrument Channel - Drywell High Pressure (PIS-64-58 E-H)	$1 \leq p \leq 2.5$ psig	A	1. Below trip setting prevents inadvertent operation of containment spray during accident conditions.
2(18)	Instrument Channel - Drywell High Pressure (PIS-64-58 A-D)	$\leq 2.5$ psig	A	1. Above trip setting in conjunction with low reactor pressure initiates CSS. Multiplier relays initiate HPCI. 2. Multiplier relay from CSS initiates accident signal. (15)
2(18)	Instrument Channel - Drywell High Pressure (PIS-64-58A-D)	$\leq 2.5$ psig	A	1. Above trip setting in conjunction with low reactor pressure initiates LPCI.
2(16)(18)	Instrument Channel - Drywell High Pressure (PIS-64-57A-D)	$\leq 2.5$ psig	A	1. Above trip setting, in conjunction with low reactor water level, low reactor water level permissive, ADS timer timed out, and CSS or RHR pump running, initiates ADS.

NOTES FOR TABLE 3.2.B

1. Whenever any CSCS System is required by Section 3.5 to be OPERABLE, there shall be two OPERABLE trip systems except as noted. If a requirement of the first column is reduced by one, the indicated action shall be taken. If the same function is inoperable in more than one trip system or the first column reduced by more than one, action B shall be taken.

Action:

- A. Repair in 24 hours. If the function is not OPERABLE in 24 hours, take action B.
  - B. Declare the system or component inoperable.
  - C. Immediately take action B until power is verified on the trip system.
  - D. No action required; indicators are considered redundant.
  - E. Within 24 hours restore the inoperable channel(s) to OPERABLE status or place the inoperable channel(s) in the tripped condition.
2. In only one trip system.
  3. Not considered in a trip system.
  4. Deleted.
  5. With diesel power, each RHRS pump is scheduled to start immediately and each CSS pump is sequenced to start about 7 seconds later.
  6. With normal power, one CSS and one RHRS pump is scheduled to start instantaneously, one CSS and one RHRS pump is sequenced to start after about 7 seconds with similar pumps starting after about 14 seconds and 21 seconds, at which time the full complement of CSS and RHRS pumps would be operating.
  7. The RCIC and HPCI steam line high flow trip level settings are given in terms of differential pressure. The RCICS setting of 450" of water corresponds to at least 150 percent above maximum steady state steam flow to assure that spurious isolation does not occur while ensuring the initiation of isolation following a postulated steam line break. Similarly, the HPCIS setting of 90 psi corresponds to at least 150 percent above maximum steady state flow while also ensuring the initiation of isolation following a postulated break.
  8. Note 1 does not apply to this item.
  9. The head tank is designed to assure that the discharge piping from the CS and RHR pumps are full. The pressure shall be maintained at or above the values listed in 3.5.H, which ensures water in the discharge piping and up to the head tank.

NOTES FOR TABLE 3.2.B (Continued)

10. Only one trip system for each cooler fan.
11. In only two of the four 4160-V shutdown boards. See note 13.
12. In only one of the four 4160-V shutdown boards. See note 13.
13. An emergency 4160-V shutdown board is considered a trip system.
14. RHRSW pump would be inoperable. Refer to Section 4.5.C for the requirements of a RHRSW pump being inoperable.
15. The accident signal is the satisfactory completion of a one-out-of-two taken twice logic of the drywell high pressure plus low reactor pressure or the vessel low water level ( $\geq 398$ " above vessel zero) originating in the core spray system trip system.
16. The ADS circuitry is capable of accomplishing its protective action with one OPERABLE trip system. Therefore, one trip system may be taken out of service for functional testing and calibration for a period not to exceed eight hours.
17. Two RPT systems exist, either of which will trip both recirculation pumps. The systems will be individually functionally tested monthly. If the test period for one RPT system exceeds two consecutive hours, the system will be declared inoperable. If both RPT systems are inoperable or if one RPT system is inoperable for more than 72 hours, an orderly power reduction shall be initiated and reactor power shall be less than 30 percent within four hours.
18. Not required to be OPERABLE in the COLD SHUTDOWN CONDITION.
19. Only one trip system will be required to be OPERABLE during testing of the reactor coolant system instrument line flow check valves in accordance with TS Section 4.7.D.1.d, provided the reactor is in COLD SHUTDOWN. Manual and automatic initiating capability of CSS and LPCI will be available but with a reduced number of instrument channels.