

ATTACHMENT A

Marked-Up Revised Technical Specification Pages

DPR-29

3.4/4.4-1

3.4/4.4-2

QUAD-CITIES
DPR-29

3.4/4.4 STANDBY LIQUID CONTROL SYSTEM

LIMITING CONDITIONS FOR OPERATION

Applicability:

Applies to the operating status of the standby liquid control system.

Objective:

To assure the availability of an independent reactivity control mechanism.

SURVEILLANCE REQUIREMENTS

Applicability:

Applies to the periodic testing requirements for the standby liquid control system.

Objective:

To verify the operability of the standby liquid control system.

SPECIFICATIONS

A. Normal Operation

During periods when fuel is in the reactor and prior to startup from a cold condition, the standby liquid control system shall be operable except as specified in Specification 3.4.B. This system need not be operable when the reactor is in the cold shutdown condition, all control rods are fully inserted, and Specification 3.3.A is met.

A. Normal Operation

The operability of the standby liquid control system shall be verified by performance of the following tests:

1. At least once per month

Demineralized water shall be recycled to the test tank. Pump minimum flow rate of 40 gpm shall be verified against a system head of 1275 psig.

2. At least once during each operating cycle

per 18 months

Insert I

Manually initiate the system, except the explosion valves and pump solution in the recirculation path, to demonstrate that the pump suction line from the storage tank is not plugged.

Insert I

- a. Initiate one of the standby liquid control subsystems, including an explosive valve, and verify that a flow path from the pumps to the reactor pressure vessel is available by pumping demineralized water into the reactor vessel. The replacement charge for the explosive valve shall be from the same manufactured batch as the one fired or from another batch which has been certified by having one of that batch successfully fired. Both injection loops shall be tested in 36 months.

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Insert II

Explode two of six charges or two of four charges manufactured in the same batch using the permanent system wiring to verify proper function. Then install the untested charges in the explosion valves.

Demineralized water shall be injected via a test connection into the reactor vessel to test that valves (except explosion valves) not checked by the recirculation test are not clogged.

Test that the setting of the system pressure relief valves is between 1455 and 1545 psig.

Deleted

3. ~~Disassemble and inspect one explosion valve so that it can be established that the valve is not clogged. Both valves shall be inspected in the course of two operating cycles.~~

B. Operation with Inoperable Components

From and after the date that a redundant component is made or found to be inoperable, Specification 3.4.A shall be considered fulfilled and continued operation permitted provided that the component is returned to an operable condition within 7 days.

B. Operation with Inoperable Components

When a component becomes inoperable, its redundant component shall be demonstrated to be operable immediately and daily thereafter.

C. Liquid Poison Tank-Boron Concentration

The liquid poison tank shall contain a boron bearing solution of at least 14 weight percent, but not more than 16.5 weight percent sodium pentaborate decahydrate at all times when the standby liquid control system is required to be operable. The available volume and temperature of the sodium pentaborate solution shall be greater than or equal to the limits specified by Figures 3.4-1 and 3.4-2.

C. Liquid Poison Tank-Boron Concentration

The availability of the proper boron-bearing solution shall be verified by performance of the following tests:

Insert II

- b. Demonstrate that the pump relief valve setpoint is between 1455 and 1545 psig and verify that the relief valve does not actuate during recirculation to the test tank at normal system pressures.
- c. Demonstrate that the pump suction line from the storage tank is not plugged by manually initiating the system, except the explosive valves, and pumping solution in the recirculation path.

ATTACHMENT B

Revised Technical Specification Pages

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3.4/4.4 STANDBY LIQUID CONTROL SYSTEM

LIMITING CONDITIONS FOR OPERATION

Applicability:

Applies to the operating status of the standby liquid control system.

Objective:

To assure the availability of an independent reactivity control mechanism.

SURVEILLANCE REQUIREMENTS

Applicability:

Applies to the periodic testing requirements for the standby liquid control system.

Objective:

To verify the operability of the standby liquid control system.

SPECIFICATIONS

A. Normal Operation

During periods when fuel is in the reactor and prior to startup from a cold condition, the standby liquid control system shall be operable except as specified in Specification 3.4.B. This system need not be operable when the reactor is in the cold shutdown condition, all control rods are fully inserted, and Specification 3.3.A is met.

A. Normal Operation

The operability of the standby liquid control system shall be verified by performance of the following tests:

1. At least once per month

Demineralized water shall be recycled to the test tank. Pump minimum flow rate of 40 gpm shall be verified against a system head of 1275 psig

2. At least once per 18 months

- a. Initiate one of the standby liquid control subsystems, including an explosive valve, and verify that a flow path from the pumps to the reactor pressure vessel is available by pumping demineralized water into the reactor vessel. The replacement charge for the explosive valve shall be from the same manufactured batch as the one fired or from another batch which has been certified by having one of that batch successfully fired. Both injection loops shall be tested in 36 months.

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- b. Demonstrate that the pump relief valve setpoint is between 1455 and 1545 psig and verify that the relief valve does not actuate during recirculation to the test tank at normal system pressures.
- c. Demonstrate that the pump suction line from the storage tank is not plugged by manually initiating the system, except the explosive valves, and pumping solution in the recirculation path.

3. Deleted

B. Operation with Inoperable Components

From and after the date that a redundant component is made or found to be inoperable, Specification 3.4.A shall be considered fulfilled and continued operation permitted provided that the component is returned to an operable condition within 7 days.

C. Liquid Poison Tank-Boron Concentration

The liquid poison tank shall contain a boron bearing solution of at least 14 weight percent, but not more than 15.5 weight percent sodium pentaborate decahydrate at all times when the standby liquid control system is required to be operable. The available volume and temperature of the sodium pentaborate solution shall be greater than or equal to the limits specified by Figures 3.4-1 and 3.4-2.

B. Operation with Inoperable Components

When a component becomes inoperable, its redundant component shall be demonstrated to be operable immediately and daily thereafter.

C. Liquid Poison Tank-Boron Concentration

The availability of the proper boron-bearing solution shall be verified by performance of the following tests: