

3/4.9 REFUELING OPERATIONS

3/4.9.1 BORON CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.9.1 The boron concentration of all filled portions of the Reactor Coolant System and the refueling canal shall be maintained uniform and sufficient to ensure that the more restrictive of the following reactivity conditions is met; either:

- a. A K_{eff} of 0.95 or less, or
- b. A boron concentration of greater than or equal to 2800 ppm, and
- c. Each valve or mechanical joint used to isolate unborated water sources shall be secured in the closed position.

APPLICABILITY: MODE 6.*

ACTION:

- a. With the requirements of LCO a. or b. not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes and initiate and continue boration until K_{eff} is reduced to less than or equal to 0.95 or the boron concentration is restored to greater than or equal to 2800 ppm, whichever is the more restrictive.
- b. With a valve or mechanical joint used to isolate an unborated water source not secured in the closed position, immediately suspend CORE ALTERATIONS and initiate action to secure the valve(s) or mechanical joint(s) in the closed position and within 4 hours verify boron concentration is within limit. The required action to verify the boron concentration within limits must be completed whenever ACTION b. is entered. A separate ACTION entry is allowed for each unsecured valve or mechanical joint.

SURVEILLANCE REQUIREMENTS

4.9.1.1 The more restrictive of the above two reactivity conditions shall be determined prior to:

- a. Removing or unbolting the reactor vessel head, and
- b. Withdrawal of any full-length control rod in excess of 3 feet from its fully inserted position within the reactor vessel.

4.9.1.2 The boron concentration of the Reactor Coolant System and the refueling canal shall be determined by chemical analysis at least once per 72 hours.

4.9.1.3 Each valve or mechanical joint used to isolate unborated water sources shall be verified closed and secured in position at least once per 31 days.

*The reactor shall be maintained in MODE 6 whenever fuel is in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.