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## REFUELING OPERATIONS

### 3/4.9.5 COMMUNICATIONS

#### LIMITING CONDITION FOR OPERATION

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3.9.5 Direct communications shall be maintained between the control room and personnel at the refueling station.

APPLICABILITY: During CORE ALTERATIONS.

#### ACTION:

When direct communications between the control room and personnel at the refueling station cannot be maintained, suspend all CORE ALTERATIONS.

#### SURVEILLANCE REQUIREMENTS

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4.9.5 Direct communications between the control room and personnel at the refueling station shall be demonstrated within 1 hour prior to the start of and at least once per 12 hours during CORE ALTERATIONS.

REFUELING OPERATIONS

3/4.9.6 (This specification number is not used)

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### 3/4.9 REFUELING OPERATIONS

#### BASES

#### 3/4.9.1 BORON CONCENTRATION

The limitations on reactivity conditions during REFUELING ensure that: (1) the reactor will remain subcritical during CORE ALTERATIONS, and (2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. These limitations are consistent with the initial conditions assumed for the boron dilution incident in the safety analyses. The value of 0.95 or less for  $K_{eff}$  includes a 1%  $\Delta k/k$  conservative allowance for uncertainties. Similarly, the boron concentration value of 2800 ppm or greater includes a conservative uncertainty allowance of 50 ppm boron. The locking closed of the required valves during refueling operations precludes the possibility of uncontrolled boron dilution or the filled portion of the RCS. This action prevents flow to the RCS of unborated water by closing flow paths from sources of unborated water.

#### 3/4.9.2 INSTRUMENTATION

The OPERABILITY of the Source Range and/or Extended Range Neutron Flux Monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core.

#### 3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel assemblies in the reactor vessel ensures that sufficient time has elapsed to allow the radioactive decay of the short-lived fission products. This decay time is consistent with the assumptions used in the safety analyses for the rapid refueling design.

#### 3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

The requirements on containment building penetration closure and OPERABILITY ensure that a release of radioactive material within containment will be restricted from leakage to the environment. The containment personnel airlock, which is part of the containment pressure boundary, provides a means for personnel access during MODES 1, 2, 3, and 4 operation. During periods of shutdown, when containment closure is not required, the door interlock mechanism may be disabled, allowing both doors of the containment personnel airlock to remain open for extended periods when frequent containment entry is necessary. Both containment personnel airlock doors may be open during CORE ALTERATIONS provided one airlock door is OPERABLE, there is 23 feet of water above the reactor vessel flange, and an individual is available outside the containment personnel airlock to close a door following a fuel handling accident inside containment.

## REFUELING OPERATIONS

### BASES

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#### 3/4.9.4 CONTAINMENT BUILDING PENETRATIONS (Continued)

Operability of a containment personnel airlock door requires that the door is capable of being closed, i.e., that the door is unblocked and no cables or hoses run through the personnel airlock. Containment personnel airlock door closure is required to take place within 30 minutes of initiation of a fuel handling accident inside containment if the reactor has been subcritical for less than 165 hours. Fuel movement is not permitted with personnel airlock doors open, if the reactor has not been subcritical for  $\geq 95$  hours. If the reactor has been subcritical for 165 hours or more, containment personnel airlock door closure is to occur as soon as practicable, but is assumed to occur within 2 hours to be consistent with the accident analysis. These requirements assure that the associated doses are limited to within acceptable levels. The requirement to have 23 feet of water above the reactor vessel flange is consistent with the fuel handling accident analysis assumptions, Regulatory Guide 1.25, and Technical Specification 3.9.10, Water Level - Refueling Cavity.

#### 3/4.9.5 COMMUNICATIONS

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity conditions during CORE ALTERATIONS.

#### 3/4.9.6 (NOT USED)

#### 3/4.9.7 CRANE TRAVEL - FUEL HANDLING BUILDING

The restriction on movement of loads in excess of the nominal weight of a fuel and control rod assembly and associated handling tool over other fuel assemblies in the storage pool, unless handled by the single-failure-proof main hoist of the FHB 15-ton crane, ensures that in the event this load is dropped: (1) the activity release will be limited to that contained in a single fuel assembly, and (2) any possible distortion of fuel in the storage racks will not result in a critical array. This assumption is consistent with the activity release assumed in the safety analyses.