

## 4.5.2 EMERGENCY CORE COOLING SYSTEM

### Applicability

Applies to periodic testing requirement for emergency core cooling systems.

### Objective

To verify that the emergency core cooling systems are operable.

### Specification

#### 4.5.2.1 High Pressure Injection

- a. During each refueling interval, system pumps and system high point vents shall be vented, and a system test shall be conducted to demonstrate that the system is operable.

After a satisfactory test of the Emergency loading sequence (4.5.1), the M. U. Pump and its required supporting auxiliaries will be started manually by the operator and a test signal will be applied to the High Pressure injection valves to demonstrate actuation of the high pressure injection system for emergency core cooling operation.

- b. The test will be considered satisfactory if the valves have completed their travel and the M.U. pumps are running as evidenced by the control board component operating lights, and either the station computer or pressure/flow indication.
- c. Testing which requires HPI flow thru MU-V16A/B/C/D shall be conducted only under either of the following conditions:
  - 1) T avg. shall be greater than 320°F.
  - 2) Head of the Reactor Vessel shall be removed.

#### 4.5.2.2 Low Pressure Injection

- a. During each refueling period and following maintenance or modification that affects system flow characteristics, system pumps and high point vents shall be vented, and a system test shall be conducted to demonstrate that the system is operable. The auxiliaries required for low pressure injection are all included in the emergency loading sequence specified in 4.5.1.
- b. The test will be considered satisfactory if the decay heat pumps listed in 4.1.5.1b have been successfully started and the decay heat injection valves and the decay heat supply valves have completed their travel as evidenced by the control board component operating lights.

#### 4.5.2.3 Core Flooding

- a. During each refueling period, a system test shall be conducted to demonstrate proper operation of the system. During depressurization of the Reactor Coolant System, verification shall be made that the check and isolation valves in the core flooding tank discharge lines operate properly.
- b. The test will be considered satisfactory if control board indication of core flood tank level verifies that all valves have opened.

#### 4.5.2.4 Component Tests

- a. At intervals not to exceed 3 months, the components required for emergency core cooling will be tested.
- b. The test will be considered satisfactory if the pumps and fans have been successfully started and the valves have completed their travel as evidenced by the control board component operating lights, and either the station computer or pressure/flow indication.

#### Bases

The emergency core cooling systems are the principal reactor safety features in the event of a loss of coolant accident. The removal of heat from the core provided by these systems is designed to limit core damage.

The low pressure injection pumps are tested singularly for operability by opening the borated water storage tank outlet valves and the bypass valves in the borated water storage tank fill line. This allows water to be pumped from the borated water storage tank through each of the injection lines and back to the tank.

With the reactor shutdown, the valves in each core flooding line are checked for operability by reducing the reactor coolant system pressure until the indicated level in the core flood tanks verify that the check and isolation valves have opened.

#### REFERENCE

- (1) FSAR, Section 6.