LIMITING CONDITION FOR OPERATION

3.5 CORE AND CONTAINMENT COOLING SYSTEMS (Cont)

F. Minimum Low Pressure Cooling and Diesel Generator Availability

1. During any period when one emergency diesel generator (EDG) is inoperable, continued reactor operation is permissible only during the succeeding 14 days unless such EDG is sooner made operable, provided that:

   a) all of the low pressure core and containment cooling systems are operable and the remaining EDG is operable in accordance with 4.5.F.1. If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be placed in the Cold Shutdown Condition within 24 hours.

   AND

   b) the Station Black Out Diesel Generator is verified operable in accordance with 4.5.F.2. If this requirement cannot be met, the reactor shall be placed in the Cold Shutdown Condition within 72 hours.

2. Any combination of inoperable components in the core and containment cooling systems shall not defeat the capability of the remaining operable components to fulfill the cooling functions.

3. When irradiated fuel is in the reactor vessel and the reactor is in the Cold Shutdown condition, both core spray systems, the LPCI and containment cooling systems may be inoperable, provided no work is being done which has the potential for draining the reactor vessel.

4. During a refueling outage, for a period of 30 days, refueling operation may continue provided that one core spray system or the LPCI system is operable or Specification 3.5.F.5 is met.

SURVEILLANCE REQUIREMENT

4.5 CORE AND CONTAINMENT COOLING SYSTEMS (Cont)

F. Minimum Low Pressure Cooling and Diesel Generator Availability

1. When it is determined that one EDG is inoperable, within 24 hours, determine that the operable EDG is not inoperable due to a common cause failure,

   OR

   perform surveillance 4.9.A.1.a for the operable EDG,

   AND

   within 1 hour and once every 8 hours thereafter, verify correct breaker alignment and indicated power availability for each offsite circuit.

2. When it is determined that one EDG is inoperable, immediately determine that the SBO-DG is not inoperable due to a common cause failure,

   OR

   perform a surveillance to demonstrate that the SBO-DG is operable,

   AND

   once every 8 hours, verify normal breaker configuration.

3.5 CORE AND CONTAINMENT COOLING SYSTEMS (Cont)

occur. A potential draining of the reactor vessel (via control rod blade leakage) would allow this water to enter into the torus and after approximately 140,000 gallons have accumulated (needed to meet minimum NPSH requirements for the LPCI and/or core spray pumps), the torus would be able to serve as a common suction header. This would allow a closed loop operation of the LPCI system and the core spray system (once re-aligned) to the torus. In addition, the other core spray system is lined up to the condensate storage tanks which can supplement the refuel cavity and dryer/separator pool water to provide core flooding, if required.

The maximum allowed out-of-service (OOS) time for one EDG is 14 days, provided that the SBO-DG is operable. If the SBO-DG is determined to be inoperable, the maximum allowed OOS time for one EDG is 72 hours. If the 72 hour EDG OOS time is entered during the last three days of the 14 day EDG OOS time, the 14 day OOS time will control (i.e., the 14 day OOS time cannot be extended by entering the 72 hour OOS time).

The SBO-DG shall be determined to be operable, as defined below, before entering into a planned 14 day LCO for an EDG. The SBO-DG is operable if it is capable of energizing the safety bus associated with the inoperable EDG. Verifying the SBO-DG starts from standby conditions and achieves a steady state voltage $\geq$ 3740 V and $\leq$ 4580 V and a frequency $\geq$ 58.8 Hz and $\leq$ 61.2 Hz suffices to provide assurance of continued operability of the SBO-DG.

Specification 3.9 must also be consulted to determine other requirements for the diesel generators.

G. Deleted

H. Maintenance of Filled Discharge Pipe

If the discharge piping of the core spray, LPCI system, HPCI, and RCIC are not filled, a water hammer can develop in this piping when the pump and/or pumps are started. An analysis has been done which shows that if a water hammer were to occur at the time at which the system were required, the system would still perform its design function. However, to minimize damage to the discharge piping and to ensure added margin in the operation of these systems, this Technical Specification requires the discharge lines to be filled whenever the system is in an operable condition.

An acceptable method of ensuring that the lines are full is to vent at the high points. The monthly frequency is based on the gradual nature of void buildup in the ECCS piping, the procedural controls, and operating experience.

BASES:

4.5 CORE AND CONTAINMENT COOLING SYSTEMS SURVEILLANCE FREQUENCIES

The testing interval for the core and containment cooling system is based on industry practice, quantitative reliability analysis, judgment and practicality. The core cooling systems have not been designed to be fully testable during operation. For example, in the case of the HPCI, automatic initiation during power operation would result in pumping cold water into the reactor vessel which is not desirable. Complete ADS testing during power operation causes an undesirable loss-of-coolant inventory. To increase the availability of the core and containment cooling systems, the components which make up the system; i.e., instrumentation, pumps, valves, etc., are tested frequently. The pumps and motor operated valves are tested in accordance with ASME B&PV Code, Section XI (IWP and IWV, except where specified relief is granted) to assure their operability. The frequency and methods of testing are described in the PNPS IST program. The PNPS IST Program is used to assess the operational readiness of pumps and valves that are safety-related or important to safety. When components are tested and found inoperable the impact on system operability is determined, and corrective action or Limiting Conditions of Operation are initiated. A simulated automatic actuation test once each cycle combined with code inservice testing of the pumps and valves is deemed to be adequate testing of these systems.

The surveillance requirements provide adequate assurance that the core and containment cooling systems will be operable when required.