e. Core flood tank (CFT) vent valves CF-V3A and CF-V3B shall be closed and the breakers to the CFT vent valve motor operators shall be tagged open, except when adjusting core flood tank level and/or pressure. Specification 3.0.1 applies.

3.3.1.3 Reactor Building Spray System and Reactor Building Emergency Cooling System

The following components must be OPERABLE:

a. Two reactor building spray pumps and their associated spray nozzles headers and two reactor building emergency cooling fans and associated cooling units (one in each train). Specification 3.0.1 applies.

b. The sodium hydroxide (NaOH) tank shall be maintained at 8 ft. ± 6 inches lower than the BWST level as measured by the BWST/NaOH tank differential pressure indicator. The NaOH tank concentration shall be 10.0 ± .5 weight percent (%).

c. All manual valves in the discharge lines of the sodium hydroxide tank shall be locked open.

3.3.1.4 Cooling Water Systems - Specification 3.0.1 applies.

a. Two nuclear service closed cycle cooling water pumps must be OPERABLE.

b. Two nuclear service river water pumps must be OPERABLE.

c. Two decay heat closed cycle cooling water pumps must be OPERABLE.

d. Two decay heat river water pumps must be OPERABLE.

e. Two reactor building emergency cooling river water pumps must be OPERABLE.

3.3.1.5 Engineered Safeguards Valves and Interlocks Associated with the Systems in Specifications 3.3.1.1, 3.3.1.2, 3.3.1.3, 3.3.1.4 are OPERABLE. Specification 3.0.1 applies.

3.3.2 Maintenance or testing shall be allowed during reactor operation on any component(s) in the makeup and purification, decay heat, RB emergency cooling water, RB spray, CFT pressure instrumentation, CFT level instrumentation, BWST level instrumentation, or cooling water systems which will not remove more than one train of each system from service. Components shall not be removed from service so that the affected system train is inoperable for more than 72 consecutive hours. If the system is not restored to meet the requirements of Specification 3.3.1 within 72 hours, the reactor shall be placed in a HOT SHUTDOWN condition within six hours.

Amendment No. 33, 80, 98, 137, 174

3.4 DECAY HEAT REMOVAL CAPABILITY

Applicability

Applies to the operating status of systems and components that function to remove decay heat when one or more fuel bundles are located in the reactor vessel.

Objective

To define the conditions necessary to assure continuous capability of decay heat removal.*

Specification

3.4.1 Reactor Coolant System temperature greater than 250°F.

3.4.1.1 With the Reactor Coolant temperature greater than 250°F, three independent EFW pumps and associated flow paths shall be OPERABLE ** with:

a. Two EFW pumps, each capable of being powered from an OPERABLE emergency bus, and one EFW pump capable of being powered from an OPERABLE steam supply system.

(1) With one pump or flow path inoperable, restore the inoperable pump or flow path to OPERABLE status within 72 hours or be in COLD SHUTDOWN within the next 12 hours.

(2) With more than one EFW pump or flow path inoperable, restore the inoperable pumps or flow paths to OPERABLE status or be subcritical within 1 hour, in at least HOT SHUTDOWN within the next 6 hours, and in COLD SHUTDOWN within the following 6 hours.

NOTE: When EF-P-1 and EF-P-2A or EF-P-2B become inoperable due to T.S. surveillance performance, entry into this LCO may be delayed for up to 8 hours.

b. Four of the six turbine bypass valves OPERABLE. With more than two turbine bypass valves inoperable, restore operability of at least four turbine bypass valves within 72 hours.

c. The condensate storage tanks (CSTS) OPERABLE with a minimum of 150,000 gallons of condensate available in each CST.

(1) With a CST inoperable, restore the CST to operability within 72 hours or be in at least HOT SHUTDOWN within the next 6 hours, and COLD SHUTDOWN within the next 30 hours.

(2) With more than one CST inoperable, restore the inoperable CST to OPERABLE status or be subcritical within 1 hour, in at least HOT SHUTDOWN within the next 6 hours, and in COLD SHUTDOWN within the following 6 hours.

* These requirements supplement the requirements of Sections 3.1.1.1.c, 3.1.1.2, 3.3.1, and 3.8.3.
**HSPS operability is specified in Section 3.5.1.

Bases

A reactor shutdown following power operation requires removal of core decay heat. Normal decay heat removal is by the steam generators with the steam dump to the condenser when RCS temperature is above 250°F and by the decay heat removal system below 250°F. Core decay heat can be continuously dissipated up to 15 percent of full power via the steam bypass to the condenser as feedwater in the steam generator is converted to steam by heat absorption. Normally, the capability to return feedwater flow to the steam generators is provided by the main feedwater system.

The main steam safety valves will be able to relieve to atmosphere the total steam flow if necessary. Below 5% power, only a minimum number of Main Steam Safety Valves need to be operable as stated in Technical Specification 3.4.1.2.1 and 3.4.1.2.2. This is to provide Steam Generator overpressure protection during hot functional testing and low power physics testing. Additionally, when the Reactor is between hot shutdown and 5% full power operation, the over power trip setpoint in the RPS shall be set to less than 5% as is specified in Technical Specification 3.4.1.2.2. The minimum number of valves required to be operable allows margin for testing without jeopardizing plant safety. Plant specific analysis shows that one Main Steam Safety Valve is sufficient to relieve reactor coolant pump heat and stored energy when the reactor is subcritical by 1% delta K/K for at least one hour. Other plant analyses show that two (2) Main Steam Safety Valves on either OTSG are more than sufficient to relieve reactor coolant pump heat and stored energy when the reactor is below 5% full power operation but had been subcritical by 1% delta K/K for at least one hour since power operation above 5% full power. According to Technical Specification 3.1.1.2a, both steam generators shall be operable whenever the reactor coolant average temperature is above 250°F. This assures that all four (4) Main Steam Safety Valves are available for redundancy. During power operations at 5% full power or above, if Main Steam Safety Valves are inoperable, the power level must be reduced, as stated in Technical Specification 3.4.1.2.3 such that the remaining safety valves can prevent overpressure on a turbine trip.

In the unlikely event of complete loss of off-site electrical power to the station, decay heat removal is by either the steam-driven emergency feedwater pump, or two half-sized motor-driven pumps. Steam discharge is to the atmosphere via the Main Steam Safety Valves and controlled atmospheric relief valves, and in the case of the turbine driven pump, from the turbine exhaust.

Both motor-driven pumps, or the steam-driven EFW pump are required initially to remove decay heat with one EFW pump eventually sufficing. If emergency feedwater is required during surveillance testing, acceptably minor operator action may be required to ensure both motor-driven pumps are available. The minimum amount of water in the condensate storage tanks, contained in Technical Specification 3.4.1.1., will allow cooldown to 250°F with steam being discharged to the atmosphere. After cooling to 250°F, the decay heat removal system is used to achieve further cooling.

c. T.S. Table 4.1-1, Section 51.d requires quarterly Heat Sink Protection System (HSPS) Train Actuation Logic testing.

Note: (b) and (c) includes verifying pump starts, valve control, indications, and alarms.

The above Table 4.1-1 surveillances involve both trains of HSPS actuation logic and the three EFW pumps. One HSPS train is tested at a time. An HSPS train involves one EFW flow path and one motor-driven EFW pump (EF-P-2A or EF-P-2B) and the turbine-driven EFW pump (EF-P-1), which is common to both trains. During a test of an HSPS train, one flow path is made inoperable and both EFW pumps associated with that HSPS train are made inoperable. The flow path is made inoperable to ensure no water is introduced into the OTSGs during the part of the test when EF-P-2A or EF-P-2B is started. Complying with T.S. 4.9.1.2 provides adequate assurance that the flow path can be made OPERABLE expeditiously if required. The pumps are made inoperable to avoid potential damage due to excessive pump starts during the testing. EF-P-1 requires local operator action to return it to service; however, EF-P-2A or EF-P-2B can be returned to service very quickly, if needed, by the control room operator since they are disabled only by placing the control switch in the Pull-To-Lock (PTL) position. If emergency feedwater is needed during surveillance testing, the flow path is restored promptly by a dedicated operator upon instruction from the Control Room. The Control Room Operator then removes the EF-P-2A or EF-P-2B control switch from PTL and makes this motor-driven EFW pump OPERABLE to provide emergency feedwater to the steam generators. Thus, the NOTE that allows EF-P-1 and EF-P-2A or EF-P-2B to be inoperable for up to 8 hours when performing T.S. surveillance testing is reasonable based on the time required to perform this testing and because EF-P-2A or EF-P-2B can be made fully OPERABLE in a short time by the control room operator who is involved in performing the testing.

3. Page 3-26 b

The last paragraph of the bases for T.S. 3.4 on this page was changed identically to this proposed change with Amendment 124. Due to an administrative error during the processing of Amendment 133, this paragraph was inadvertently changed to pre-Amendment 124 wording. Additionally, a clarifying statement was added to explain that operator action may be required if emergency feedwater is needed during surveillance testing. The scope of this operator action is minor, as explained above (for page 3-25 changes), thus it is judged acceptable for this short time duration.

4. Page 3-41

T.S. 3.6.6 requires, if a reactor building isolation valve (other than a purge valve) is determined to be inoperable in a position other than the required position, the other reactor building isolation valve in the line shall be tested to ensure OPERABILITY. This requirement is unnecessary in that all applicable reactor building isolation valves are tested periodically to assure their operability. In addition, in some instances, testing the other reactor building isolation valve could disrupt required process flow paths that could lead to system instability, equipment damage, or render the remaining OPERABLE valve

3.6 REACTOR BUILDING

Applicability

Applies to the containment integrity of the reactor building as specified below.

Objective

To assure containment integrity.

Specification

3.6.1 Containment integrity as defined in Section 1.7, shall be maintained whenever all three of the following conditions exist:

a. Reactor coolant pressure is 300 psig or greater.

b. Reactor coolant temperature is 200°F or greater.

c. Nuclear fuel is in the core.

3.6.2 Containment integrity shall be maintained when both the reactor coolant system is open to the containment atmosphere and a shutdown margin exists that is less than that for a refueling shutdown.

3.6.3 Positive reactivity insertions which would result in a reduction in shutdown margin to less than 1% Δ k/k shall not be made by control rod motion or boron dilution unless containment integrity is being maintained.

3.6.4 The reactor shall not be critical when the reactor building internal pressure exceeds 2.0 psig or 1.0 psi vacuum.

3.6.5 Prior to criticality following refueling shutdown, a check shall be made to confirm that all manual containment isolation valves which should be closed are closed and are conspicuously marked.

3.6.6 While the reactor is critical, if a reactor building isolation valve (other than a purge valve) is determined to be inoperable in a position other than the required position, the other reactor building isolation valve in the line shall be verified to be OPERABLE. If the inoperable valve is not restored within 48 hours, the OPERABLE valve will be closed or the reactor shall be brought to HOT SHUTDOWN within the next 6 hours and to the COLD SHUTDOWN condition within an additional 30 hours.

3.6.7 The hydrogen recombiner shall be operable during REACTOR CRITICAL, HOT STANDBY and POWER OPERATION. With the hydrogen recombiner inoperable, restore the recombiner to operable status or bring the reactor to HOT SHUTDOWN within seven (7) days.

3.6.8 While containment integrity is required (see T.S. 3.6.1), if a 48" reactor building purge valve is found to be inoperable perform either 3.6.8.1 or 3.6.8.2 below.

3.15 AIR TREATMENT SYSTEMS

3.15.1 EMERGENCY CONTROL ROOM AIR TREATMENT SYSTEM

Applicability

Applies to the emergency control room air treatment system and its associated filters.

Objective

To specify minimum availability and efficiency for the emergency control room air treatment system and its associated filters.

Specifications

3.15.1.1 Except as specified in Specification 3.15.1.3 below, both emergency treatment systems, AH-E18A fan and associated filter AH-F3A and AH-E18B fan and associated filter AH-F3B shall be operable at all times, per the requirements of Specification 3.15.1.2 below; when containment integrity is required and when irradiated fuel handling operations are in progress.

3.15.1.2 a. The results of the in-place DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal absorber banks shall show <0.05% DOP penetration and <0.05% halogenated hydrocarbon penetration, except that the DOP test will be conducted with prefilters installed.

b. The results of laboratory carbon sample analysis shall show $\geq$ 90% radioactive methyl iodide decontamination efficiency when tested at 125°F, 95% R.H.

c. The fans AH-E18A and B shall each be shown to operate within $\pm$ 4000 CFM of design flow (40,000 CFM).

3.15.1.3 From and after the date that one control room air treatment system is made or found to be inoperable for any reason, reactor operation or irradiated fuel handling operations are permissible only during the succeeding 7 days provided the redundant system is verified to be OPERABLE.

3.15.1.4 From the date that both control room air treatment systems are made or found to be inoperable or if the inoperable system of 3.15.1.3 cannot be made operable in 7 days, irradiated fuel handling operations shall be terminated in 2 hours and reactor shutdown shall be initiated and the reactor shall be in cold shutdown within 48 hours.