

PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

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3.7.1.2 At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

- a. Two motor-driven auxiliary feedwater pumps, each capable of being powered from separate emergency busses, and
- b. One steam turbine-driven auxiliary feedwater pump capable of being powered from an OPERABLE steam supply system.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

- a. With one auxiliary feedwater pump inoperable, restore the required auxiliary feedwater pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. With two auxiliary feedwater pumps inoperable, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.
- c. With three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater pump to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

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4.7.1.2.1 Each auxiliary feedwater pump shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by:
  - 1) Verifying that each motor-driven pump develops a total dynamic head of greater than or equal to ~~3230~~ feet at a flow of greater than or equal to ~~500~~ gpm;   
 (Handwritten: 400, 3470)
  - 2) Verifying that the steam turbine-driven pump develops a total dynamic head of greater than or equal to ~~3217~~ feet at a flow of greater than or equal to ~~1000~~ gpm when the secondary steam supply pressure is greater than 600 psig and the auxiliary feedwater pump turbine is operating at 3600 rpm. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3;   
 (Handwritten: 400, 3550)

## PLANT SYSTEMS

### BASES

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#### 3/4.7.1.2 AUXILIARY FEEDWATER SYSTEM

The OPERABILITY of the Auxiliary Feedwater System ensures that the Reactor Coolant System can be cooled down to less than 350°F from normal operating conditions in the event of a total loss-of-offsite power.

Each electric motor-driven auxiliary feedwater pump ~~is capable of delivering a total feedwater flow of 500 gpm at a pressure of 1210 psig to the entrance of the steam generators.~~ <sup>and</sup> The steam-driven auxiliary feedwater pump is capable of delivering a total feedwater flow of 1000 gpm at a pressure of 1210 psig to the entrance of the steam generators. This capacity is sufficient to ensure that adequate feedwater flow is available to remove decay heat and reduce the Reactor Coolant System temperature to less than 350°F when the Residual Heat Removal System may be placed into operation.

#### 3/4.7.1.3 SPECIFIC ACTIVITY

The limitations on Secondary Coolant System specific activity ensure that the resultant offsite radiation dose will be limited to a small fraction of 10 CFR Part 100 dose guideline values in the event of a steam line rupture. This dose also includes the effects of a coincident 1 gpm reactor to secondary tube leak in the steam generator of the affected steam line. These values are consistent with the assumptions used in the safety analyses.

#### 3/4.7.1.4 MAIN STEAM LINE ISOLATION VALVES

The OPERABILITY of the main steam line isolation valves ensures that no more than one steam generator will blow down in the event of a steam line rupture. This restriction is required to: (1) minimize the positive reactivity effects of the Reactor Coolant System cooldown associated with the blowdown, and (2) limit the pressure rise within containment in the event the steam line rupture occurs within containment. The OPERABILITY of the main steam isolation valves within the closure times of the Surveillance Requirements are consistent with the assumptions used in the safety analyses.

#### 3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure-induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations of 70°F and 200 psig are based on a steam generator RT<sub>NDT</sub> of 10°F and are sufficient to prevent brittle fracture.

## JUSTIFICATION AND ANALYSIS OF SIGNIFICANT HAZARDS CONSIDERATION

The proposed amendments would change the Surveillance Requirement acceptance criteria for the Auxiliary Feedwater pumps. These changes would make the Technical Specifications consistent with the values assumed in the accident analysis.

10 CFR 50.92 states that a proposed amendment involves no significant hazards considerations if operation in accordance with the proposed amendment would not:

- 1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- 2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- 3) Involve a significant reduction in a margin of safety.

The proposed amendment does not increase the probability or consequences of an accident previously evaluated and it does not create the possibility of a new or different kind of accident. Since the accident analysis associated with the Auxiliary Feedwater pumps was done using the proposed values, there is no increase in the associated consequences of previously evaluated accidents.

The proposed acceptance criteria do not involve a significant reduction in a margin of safety in that the proposed changes are those used in accident analysis calculations.

The Commission has provided guidance concerning the application of standards of no significant hazard determination by providing certain examples (48 FR 14870). One of the examples of actions likely to involve no significant hazards considerations relates to a change which either may result in some increase to the probability or consequences of a previously-analyzed accident or may reduce in some way a safety margin, but where the results of the change are clearly within all acceptable criteria with respect to the system or component specified in the Standard Review Plan. Because the analysis described in the application for the proposed amendments shows that the results of the changes are clearly within the applicable accident analysis criteria, the example described above can be applied to this situation.

For the reasons described above, Duke Power Company concludes that the proposed amendments do not involve significant hazards considerations.