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## LIMITING CONDITIONS FOR OPERATION

### 3.6.E Jet Pumps

1. Whenever the reactor is in the start-up or run modes, all jet pumps shall be operable. If it is determined that a jet pump is inoperable, or if two or more jet pump flow instruments failures occur and cannot be corrected within 24 hours, an orderly shutdown shall be initiated and the reactor shall be in a Cold Shutdown Condition within 24 hours.

### F. Jet Pump Flow Mismatch

1. Deleted.
2. Following one-pump operation, the discharge valve of the low speed pump may not be opened unless the speed of the faster pump is equal to or less than 50% of its rated speed.
3. The reactor shall not be operated for a period in excess of 24 hours with one recirculation loop out of service.

### G. Inservice Inspection

To be considered operable, components shall satisfy the requirements contained in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for continued service of ASME Code Class 1, 2, and 3 components except where relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(i).

## SURVEILLANCE REQUIREMENTS

### 4.6.E. Jet Pumps

1. Whenever there is recirculation flow with the reactor in the startup or run modes, jet pump operability shall be checked daily by verifying that the following conditions do not occur simultaneously:
  - a. The recirculation pump flow differs by more than 15% from the established speed flow characteristics.
  - b. The indicated value of core flow rate varies from the value derived from loop flow measurements by more than 10%.
  - c. The diffuser to lower plenum differential pressure reading on an individual jet pump varies from the mean of all jet pump differential pressures by more than 10%.

### F. Jet Pump Flow Mismatch

1. Deleted.

### G. Inservice Inspection

Inservice inspection shall be performed in accordance with the requirements for ASME Code Class 1, 2, and 3 components contained in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(i).

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### 3.6.E & 4.6.E BASES (Cont'd)

jet pump body; however, the converse is not true. The lack of any substantial stress in the jet pump body makes failure impossible without an initial nozzle riser system failure.

#### F. Jet Pump Flow Mismatch

Requiring the discharge valve of the lower speed loop to remain closed until the speed of faster pump is equal to or less than 50% of its rated speed provides assurance when going from one to two pump operation that excessive vibration of the jet pump risers will not occur.

A loss-of-coolant accident analysis occurring during operation with one recirculation loop has not been performed. Therefore, operation with a single loop is prohibited except for a limited interval of 24 hours.

#### G. Inservice Inspection

The inservice inspection program conforms to the requirements of 10 CFR 50, Section 50.55a(g). Where practical, the inspection of components conforms to the requirements of ASME Code Class 1, 2, and 3 components contained in Section XI of the ASME Boiler and Pressure Vessel Code. If a Code required inspection is impractical, a request for a deviation from that requirement is submitted to the Commission in accordance with 10 CFR 50, Section 50.55a(g)(6)(i).

Deviations which are needed from the procedures prescribed in Section XI of the ASME Code and applicable Addenda will be reported to the Commission prior to the beginning of each 10-year inspection period if they are known to be required at that time. Deviations which are identified during the course of inspection will be reported quarterly throughout the inspection period.

BASES:

3.6.H and 4.6.H

Snubbers

Snubbers are designed to prevent unrestrained pipe motion under dynamic loads as might occur during an earthquake or severe transient, while allowing normal thermal motion during startup and shutdown. The consequence of an inoperable snubber is an increase in the probability of structural damage to piping as a result of a seismic or other event initiating dynamic loads. It is therefore required that all snubbers required to protect the primary coolant system or any other safety system or component be operable during reactor operation.

Because the snubber protection is required only during relatively low probability events, a period of 72 hours is allowed for repairs or replacement. Since plant startup should not commence with knowingly defective safety related equipment, Specification 3.6.H.4 prohibits startup with inoperable snubbers.

All safety related snubbers are visually inspected for overall integrity and operability.

The inspection frequency is based upon maintaining a constant level of snubber protection. Thus the required inspection interval varies inversely with the observed snubber failures. The number of inoperable snubbers found during a required inspection determines the time interval for the next required inspection. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

When the cause of the rejection of a snubber is clearly established and remedied for that snubber and for any other snubbers that may be generically susceptible, and/or verified by functional testing, that snubber may be exempted from being counted as inoperable. Generically susceptible snubbers are those which are of a specific make or model and have the same design features directly related to rejection of the snubber by visual inspection, or are similarly located or exposed to the same environmental conditions, such as temperature, radiation and vibration.



#### BASES (cont'd)

When a snubber is found inoperable, an engineering evaluation is performed, in addition to the determination of the snubber mode of failure, in order to determine if any safety related component or system has been adversely affected by the inoperability of the snubber. The engineering evaluation shall determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the supported component or system.

In cases where the cause of failure has been identified, additional snubbers, having a high probability for the same type of failure or that are being used in the same application that caused the failure, shall be tested. This requirement increases the probability of locating inoperable snubbers without testing 100% of the snubbers.

Hydraulic snubbers and mechanical snubbers may each be treated as a different entity for the above surveillance programs.

To further increase the assurance of snubber reliability, functional tests should be performed once each refueling cycle. Ten percent of each type of snubber represents an adequate sample for such tests. Observed failures on these samples should require testing of additional units. Snubbers in high radiation areas or those especially difficult to remove need not be selected for functional tests provided operability was previously verified.

The service life of a snubber is evaluated via manufacturer input and consideration of the snubber service conditions. The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. These records will provide statistical bases for future consideration of snubber service life.