ENCLOSURE

REVISED TECHNICAL SPECIFICATIONS

H. B. ROBINSON STEAM ELECTRIC PLANT UNIT NO. 2

(1352NLU/ccc)

(1) LOW TEMPERATURE PHYSICS TEST

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3.3 EMERGENCY CORE COOLING SYSTEM, AUXILIARY COOLING SYSTEMS, AIR RECIRCULATION FAN COOLERS, CONTAINMENT SPRAY, POST ACCIDENT CONTAINMENT VENTING SYSTEM, AND ISOLATION SEAL WATER SYSTEM

Applicability

Applies to the operating status of the Emergency Core Cooling System, Auxiliary Cooling Systems, Air Recirculation Fan Coolers, Containment Spray, Post Accident Containment Venting System, and Isolation Seal Water System.

Objective

To define those limiting conditions for operation that are necessary: (1) to remove decay heat from the core in emergency or normal shutdown situations, (2) to remove heat from containment and critical components in normal operating and emergency situations, and (3) to remove airborne iodine from the containment atmosphere following a postulated Design Basis Accident.

Specification

3.3.1 Safety Injection and Residual Heat Removal Systems

3.3.1.1 The reactor shall not be made critical unless the following conditions are met:

a. The refueling water tank contains not less than 300,000 gallons of water with a boron concentration of at least 1950 ppm.

heat removal loop to operable status as soon as possible and follow the reporting requirements of Specification 6.6.1 and 6.6.2.

3.3.2 Containment Cooling and Iodine Removal System

3.3.2.1 The reactor shall not be made critical unless the following conditions are met:

a. The spray additive tank contains not less than 2505 gallons of solution with a sodium hydroxide concentration of not less than 30% by weight.

b. Two containment spray pumps are operable.

c. Four fan cooler units are operable.

d. All essential features, including valves, controls, dampers, and piping associated with the above components are operable.

e. The system which automatically initiates the sodium hydroxide addition to the containment spray simultaneously to the actuation of the containment spray is operable.

(2) SNUBBERS

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3.13 SHOCK SUPPRESSORS (SNUBBERS)

Applicability

Applies to safety related shock suppressors (snubbers).

Objectives

To provide for limiting conditions for operation which ensure the operability of snubbers during plant operation, such that normal operation or plant transients requiring operation of the snubbers will not result in consequences more severe than those previously analyzed.

Specification

3.13.1 During all modes of operation except cold shutdown and refueling, safety related snubbers shall be capable of performing their intended function in the required manner (operable) except as described below:

a. When the reactor is at hot shutdown or at power and a snubber is determined to be inoperable, an engineering analysis must be conducted within 72 hours to determine if the snubber's inoperability has adversely affected the supported component. If so, the supported component shall be declared inoperable and appropriate action shall be taken in accordance with the appropriate Technical Specification. If the supported component has not been adversely affected, (1) an analysis shall be performed to determine if the supported component could be damaged during a future event and, if so, the snubber shall be repaired or replaced within 72 hours of finding it inoperable, or (2) the supported component shall be declared inoperable until the snubber is repaired or replaced and appropriate action shall be taken in accordance with the appropriate Technical Specification. If the analysis

demonstrates that the snubber is not needed for the supported component to be adequately protected during normal operation and design events, reactor operation shall continue and the snubber shall be repaired on a routine basis.

b. If a snubber is determined to be inoperable while the reactor is in cold shutdown, the snubber (if needed for supported component protection) shall be repaired and reinstalled or replaced prior to reactor startup.

c. Deleted.

Basis

Snubbers are designed to prevent unrestrained pipe motion under dynamic loads such 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 a possible increase in the probability of structural damage to piping as a result of a seismic or other event initiating dynamic loads. If it, therefore, required that all snubbers required to protect the primary coolant system or any other safety system or component be operable during reactor operation or other periods when severe transients might cause damaging dynamic loads. Because the snubber protection is required only during low probability events, a period of 72 hours is allowed for the engineering analysis and for subsequent necessary repair or replacement of the snubber. Since plant startup should not commence with knowingly defective safety-related equipment, the specification prohibits startup with inoperable snubbers which are required for safe operation. The engineering analysis will ensure that the supported component was not damaged while the snubber was inoperable.

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4.13 SHOCK SUPPRESSORS (SNUBBERS)

Applicability

Applies to safety related shock suppressors (snubbers).

Objectives

To ensure the continued operability of snubbers by periodic surveillance.

Specification

4.13.1 Visual Inspection

a. All hydraulic snubbers whose seal material has been demonstrated by operating experience, lab testing or analysis to be compatible with the operating environment and all mechanical snubbers shall be visually inspected in accordance with the following schedule:

Number of Snubbers Found Inoperable During Inspection or During Inspection Interval	Next Required Inspection Interval
0	18 months ± 25%
1	12 months ± 25%
2	6 months ± 25%
3,4	124 days ± 25%
5,6,7	62 days ± 25%
≥ 8	31 days ± 25%

The required inspection interval shall not be lengthened more than one step at a time.

Snubbers may be categorized in two groups, "accessible" or "inaccessible" based on their accessibility for inspection during reactor operation. These two groups may be inspected independently according to the above schedule.

b. All hydraulic snubbers whose seal materials are other than ethylene propylene, Viton "A", or other material that has been demonstrated to be compatible with the operating environment shall be visually inspected for operability every 31 days.

c. The initial inspection shall be performed within 6 months from the date of issuance of these specifications. For the purpose of entering the schedule in Specification 4.13.1.a, it shall be assumed that the facility had been on a 6 month inspection interval.

e. In addition to the regular sample snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber (if it is repaired and installed in another position) and the spare snubber shall be retested. Test results of these snubbers may not be included for the re-sampling.

f. If any snubber selected for functional testing either fails to lockup or fails to move; i.e., frozen in place, the cause will be evaluated and if caused by manufacturer or design deficiency all snubbers of the same design subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the functional test acceptance criteria.

g. For the snubber(s) found inoperable, an engineering evaluation shall be performed on the components which are supported by the snubber(s). The purpose of this engineering evaluation shall be to determine if the components supported by the snubber(s) were adversely affected by the inoperability of the snubber(s) in order to ensure that the supported component remains capable of meeting the designed service.

4.13.3 Snubber Service Life Monitoring

A record of the service life of each safety related snubber, the date at which the designated service life commences and the installation and maintenance records on which the service life is based shall be maintained.

Once each refueling cycle, these records shall be reviewed to ensure that the service life will not be exceeded prior to the next review. If the service life of a snubber will be exceeded prior to the next scheduled review, the snubber's service life can be reevaluated in order to possible extend it or the snubber shall be reconditioned or replaced. This reevaluation, replacement, or reconditioning shall be indicated in the records.

Basis

All safety-related hydraulic snubbers are visually inspected for overall integrity and operability. The inspection will include verification of proper orientation, adequate hydraulic fluid level (as applicable), and proper attachment of snubber to piping and structures.

Experience at operating facilities has shown that the required surveillance program should assure an acceptable level of snubber performance provided that he seal materials are compatible with the operating environment. Viton "A" and ethylene propylene seal material have been demonstrated by lab tests and operating experience to be compatible with nuclear plant operating environments.

Snubbers containing seal materials which has not been demonstrated by operating experience, lab tests or analysis to be compatible with the operating environment shall be inspected more frequently (every month) until material compatibility is confirmed or an appropriate changeout is completed.

The visual 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 visual 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.

A snubber which appears inoperable as a result of a visual inspection may be declared operable if it passes a functional test and the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers that may be generically susceptible. 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.

To further increase the assurance of snubber reliability, functional tests should be performed once each refueling cycle. For hydraulic snubbers these tests will include stroking of the snubbers to verify proper piston movement, lock up, and bleed rates. For mechanical snubbers these tests will include stroking of the snubbers to verify proper piston movement, drag force, release rate, and actuating acceleration. Ten percent of the safety related snubbers represent an adequate sample for such tests. Observed failures of these samples shall require testing of additional units.

Periodic functional testing of the stream generator snubbers (as a unit) is not required due to their large size and difficulty of removal. By testing the smaller and more easily removable control unit for each snubber, the operability of these large bore snubbers can be ensured.

When a snubber is found inoperable (visual or functional) 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's mode of failure has imparted a significant effect or degradation on the supported component or system.

The service life of a snubber is evaluated via manufacturer input and information through consideration of the snubber service conditions and associated installation and maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc.). The requirements 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

(3) TURBINE TRIP LOGIC

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TABLE 4.1-1 (Continued)

	Channel Description	Check	Calibrate	Test	Remarks
21.	Containment Sump Level	N.A.	R	N.A.	
22.	Turbine Trip Logic**	N.A.	N.A.	R	
23.	Accumulator Level and Pressure	S	R	N.A.	
24.	Steam Generator Pressure	S	R	M	
25.	Turbine First Stage Pressure	S	R	M	
26.	DELETED				
27.	Logic Channel Testing	N.A.	N.A.	M(1)	(1) During hot shutdown and power operations. When periods of reactor cold shutdown and refueling extend this interval beyond one month, the test shall be performed prior to startup.
28.	Turbine Overspeed Protection Trip Channel (Electrical)	N.A.	R	M	
29.	4 Kv Frequency	N.A.	R	R	
30.	Control Rod Drive Trip Breakers	N.A.	N.A.	M	
31.	Overpressure Protection System	N.A.	R	M	

** Stop valve closure or low EH fluid pressure.

(4) ENVIRONMENTAL QUALIFICATION

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