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SELECTED LICENSEE COMMITMENTS
MANUAL (SLC)

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REMARKS: PLEASE UPDATE YOUR MANUAL ACCORDINGLY

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PAGES 24 - THREE HOLE PUNCH

H B BARRON, JR.
VICE PRESIDENT
MCGUIRE NUCLEAR STATION

BY:
B C BEAVER MG01RC BCB/CMK

May 16, 2002

MEMORANDUM

To: All McGuire Nuclear Station Selected Licensee Commitments (SLC) Manual Holders

Subject: McGuire SLC Manual Update

Please revise your copy of the manual as follows:

REMOVE	INSERT
List of Affected Sections Revision 22	List of Affected Sections Revision 23
Entire SLC 16.9.7 Revision 14	Entire SLC 16.9.7 Revision 25
Entire SLC 16.9.15 Revision 4	Entire SLC 16.9.15 Revision 25

Revisions may skip numbers due to Regulatory Compliance Filing System.

Please call me if you have questions.

Bonnie Beaver
Regulatory Compliance
875-4180

A001

SLC LIST OF AFFECTED SECTIONS

SECTION	REVISION NUMBER	DATE
16.1	REVISION 0	12/14/99
16.2	REVISION 0	12/14/99
16.3	REVISION 0	12/14/99
16.4	Not Issued	
16.5.1	REVISION 0	12/14/99
16.5.2	REVISION 0	12/14/99
16.5.3	REVISION 0	12/14/99
16.5.4	REVISION 7	09/14/00
16.5.5	REVISION 0	12/14/99
16.5.6	REVISION 0	12/14/99
16.5.7	REVISION 0	12/14/99
16.5.8	REVISION 0	12/14/99
16.5.9	REVISION 0	12/14/99
16.5.10	REVISION 0	12/14/99
16.6.1	REVISION 0	12/14/99
16.6.2	REVISION 0	12/14/99
16.6.3	REVISION 17	04/08/02
16.7.1	REVISION 0	12/14/99
16.7.2	REVISION 24	4/29/02
16.7.3	REVISION 0	12/14/99
16.7.4	REVISION 1	4/11/00
16.7.5	REVISION 0	12/14/99
16.7.6	REVISION 0	12/14/99
16.7.7	REVISION 0	12/14/99
16.7.8	REVISION 0	12/14/99
16.7.9	REVISION 0	12/14/99
16.7.10	REVISION 0	12/14/99
16.8.1	REVISION 2	4/11/00
16.8.2	REVISION 0	12/14/99
16.8.3	REVISION 2	4/11/00
16.9.1	REVISION 18	12/4/01
16.9.2	REVISION 5	5/24/00
16.9.3	REVISION 0	12/14/99
16.9.4	REVISION 1	03/02/00
16.9.5	REVISION 0	12/14/99
16.9.6	REVISION 0	12/14/99
16.9.7	REVISION 25	5/14/02
16.9.8	REVISION 0	12/14/99
16.9.9	REVISION 13	2/26/01
16.9.10	REVISION 13	2/26/01
16.9.11	REVISION 22	2/25/02
16.9.12	REVISION 13	2/26/01
16.9.13	REVISION 13	2/26/01
16.9.14	REVISION 22	2/25/02
16.9.15	REVISION 25	5/14/02
16.9.16	REVISION 19	12/03/01
16.9.17	REVISION 0	12/14/99

SLC LIST OF AFFECTED SECTIONS

SECTION	REVISION NUMBER	DATE
16.9.18	REVISION 0	12/14/99
16.9.19	REVISION 0	12/14/99
16.9.20	REVISION 8	11/30/00
16.9.21	REVISION 0	12/14/99
16.9.22	REVISION 0	12/14/99
16.9.23	Not Issued	
16.9.24	REVISION 20	1/17/02
16.10.1	REVISION 0	12/14/99
16.11.1	REVISION 9	2/1/01
16.11.2	REVISION 23	4/4/02
16.11.3	REVISION 0	12/14/99
16.11.4	REVISION 0	12/14/99
16.11.5	REVISION 0	12/14/99
16.11.6	REVISION 0	12/14/99
16.11.7	REVISION 12	3/14/01
16.11.8	REVISION 0	12/14/99
16.11.9	REVISION 0	12/14/99
16.11.10	REVISION 0	12/14/99
16.11.11	REVISION 0	12/14/99
16.11.12	REVISION 0	12/14/99
16.11.13	REVISION 0	12/14/99
16.11.14	REVISION 21	1/17/02
16.11.15	REVISION 21	1/17/02
16.11.16	REVISION 1	4/11/00
16.11.17	REVISION 1	4/11/00
16.11.18	REVISION 0	12/14/99
16.11.19	REVISION 0	12/14/99
16.11.20	REVISION 0	12/14/99
16.12.1	REVISION 0	12/14/99
16.12.2	REVISION 0	12/14/99
16.13.1	REVISION 0	12/14/99
16.13.2	REVISION 24	4/29/02
16.13.3	REVISION 24	4/29/02
16.14.1	REVISION 0	12/14/99

16.9 AUXILIARY SYSTEMS - FIRE PROTECTION SYSTEMS

16.9.7 Standby Shutdown System

COMMITMENT The Standby Shutdown System (SSS) shall be operable.

APPLICABILITY MODES 1, 2, and 3.

REMEDIAL ACTIONS

----------NOTE----------

1. The SRO should ensure that security is notified 10 minutes prior to declaring the SSS inoperable. Immediately upon discovery of the SSS inoperability, Security must be notified to implement compensatory measures within 10 minutes of the discovery.

2. If inoperable SSS component is located inside containment, repairs shall be made at the first outage which permits containment access.

CONDITION	REQUIRED ACTION	COMPLETION TIME
----------NOTE---------- Not applicable to the SSS Diesel Generator or 24 V Battery Bank and Charger. --- A. One or more required SSS components identified in Table 16.9.7-1 inoperable.	A.1 Verify the OPERABILITY of fire detection and suppression systems in the associated areas identified in Table16.9.7-1. AND A.2 Restore the component to OPERABLE status.	1 hour 7 days
B. SSS Diesel Generator or 24 V Battery Bank and Charger inoperable.	B.1 Verify the OPERABILITY of fire detection and suppression systems in the associated areas identified in Table16.9.7-1. AND	1 hour (continued)

REMEDIAL ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued).	B.2 Verify offsite power and one emergency diesel generator OPERABLE. AND B.3 Restore the component to OPERABLE status.	1hour 60 days
C. Total Unidentified LEAKAGE, Identified LEAKAGE, and reactor coolant pump seal leakoff > 20 gpm.	C.1 Declare the standby makeup pump and SSS inoperable.	Immediately
D. Required Action and associated Completion Time of Condition A or C not met.	D.1 Prepare and submit a Special Report to the NRC outlining the cause of the inoperability, corrective actions taken, and plans for restoring the SSS to OPERABLE status.	30 days
E. Required Action and associated Completion Time of Condition B not met.	E.1 Prepare and submit a Special Report to the NRC outlining the extent of repairs required, schedule for completing repairs, and basis for continued operation.	14 days

TESTING REQUIREMENTS

	TEST	FREQUENCY
TR 16.9.7.1	Verify total Identified LEAKAGE, Unidentified LEAKAGE, and reactor coolant pump seal leakoff are ≤ 20 gpm.	72 hours
TR 16.9.7.2	Verify the requirements for spent fuel water level in Surveillance Requirement 3.7.13.1 are met and the boron concentration in the spent fuel storage pool is within the limits specified in the COLR. OR Verify the refueling water storage tank is capable of being aligned to the SSS standby makeup pump.	7 days
TR 16.9.7.3	Verify fuel oil level in the SSS diesel generator fuel storage tank is ≥ 4.0 ft.	31 days
TR 16.9.7.4	Verify the SSS diesel generator starts from ambient conditions and operates for ≥ 30 minutes at ≥ 700 kW.	31 days
TR 16.9.7.5	Verify fuel oil properties of new fuel oil for the SSS diesel generator are tested in accordance with the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
TR 16.9.7.6	Verify the SSS diesel generator 24 V battery voltage is ≥ 24 volts.	31 days
TR 16.9.7.7	Perform a CHANNEL CHECK of the SSS Instrumentation as required by Table 16.9.7-2.	31 days
TR 16.9.7.8	Verify the electrolyte level of each SSS 250/125 V battery bank is above the plates.	31 days

(continued)

TESTING REQUIREMENTS (continued)

TEST		FREQUENCY
TR 16.9.7.9	Verify the total battery terminal voltage of each SSS 250/125 V battery bank is $\geq$ 258/129 V on float charge.	31 days
TR 16.9.7.10	Verify the average specific gravity of each SSS 250/125 V battery bank is $\geq$ 1.200.	92 days
TR 16.9.7.11	Verify the standby makeup pump's developed head and capacity is greater than or equal to that required by the Inservice Testing Program.	92 days
TR 16.9.7.12	Verify the SSS diesel generator 24 V batteries and battery racks show no visual indication of physical damage or abnormal deterioration.	18 months
TR 16.9.7.13	Verify SSS diesel generator 24 V battery to battery and terminal connections are clean, tight, and free of corrosion.	18 months
TR 16.9.7.14	Perform a CHANNEL CALIBRATION of the SSS Instrumentation as required by Table 16.9.7-2.	18 months
TR 16.9.7.15	Perform inspection of SSS diesel generator in accordance with procedures prepared in conjunction with manufacturer's recommendations for class of service.	18 months
TR 16.9.7.16	Verify the SSS 250/125 V batteries, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration.	18 months
TR 16.9.7.17	Verify the SSS 250/125 V battery to battery and terminal connections are clean, tight, free of corrosion, and coated with anti-corrosion material.	18 months
TR 16.9.7.18	Verify the "C" solenoid to valve SA48ABC can be deenergized to provide steam supply to the turbine driven auxiliary feedwater pump.	18 months

TABLE 16.9.7-1

STANDBY SHUTDOWN SYSTEM
FIRE DETECTION & SUPPRESSION SYSTEMS VERIFICATION[1]

INOPERABLE SSS COMPONENT	FIRE DETECTION & SUPPRESSION SYSTEMS LOCATION								
	EL 716 EE-KK	EL 733 EE-KK	EL 750 EE-KK	Control Room	Battery Room	Cable Rooms	Turbine Driven AFW Pump	Motor Driven AFW Pump	Containment
SSS Diesel Generator[3]	X	X	X	X	X	X	X	X	Note 2
SSS DG Starting 24 V Battery Bank and Charger[3]	X	X	X	X	X	X	X	X	Note 2
Standby Makeup Pump and Water Supply	X	X	X						
SSS 250/125V Battery and Charger[3]				X	X	X			Note 2
Turbine Driven AFW Pump Solenoid "C"								X	
INSTRUMENTATION:									
1. RCS Pressure				X	X	X			Note 2
2. Pressurizer Level				X	X	X			Note 2
3. SG Level				X	X	X			Note 2
4. Incore Temperature				X	X	X			Note 2
5. NC Wide Range Cold Leg Temperature				X	X	X			Note 2

NOTES:

1. If fire detection and/or suppression systems are inoperable, then the ACTION statement(s) of the applicable fire detection and/or suppression SLC shall be complied with.

2. Monitor containment air temperature at least once per hour at the locations specified in Technical Specification Surveillance Requirement 3.6.5.1 or 3.6.5.2, in lieu of verification of operability of systems inside containment

3. With this component inoperable, then denoted areas of both units are affected.

TABLE 16.9.7-2

STANDBY SHUTDOWN SYSTEM
INSTRUMENTATION TESTING REQUIREMENTS

	INSTRUMENT	REQUIRED CHANNELS	TESTING REQUIREMENTS	READOUT LOCATION
1.	Reactor Coolant Pressure	1	TR 16.9.7.7 TR 16.9.7.14	SSF Control Panel
2.	Pressurizer Level	1	TR 16.9.7.7 TR 16.9.7.14	SSF Control Panel
3.	Steam Generator Level (Wide Range)	1 per SG	TR 16.9.7.7 TR 16.9.7.14	SSF Control Panel
4.	Incore Temperature	1	TR 16.9.7.7 TR 16.9.7.14	SSF Control Panel
5.	Standby Makeup Pump Flow	1	TR 16.9.7.14	SSF Control Panel
6.	NC Wide Range Cold Leg Temperature	1 per 2 Cold Legs	TR 19.9.7.7 TR 16.9.7.14	SSC Control Panel

BASES

The Standby Shutdown System (SSS) is designed to mitigate the consequences of certain postulated fire incidents by providing capability to maintain HOT STANDBY conditions and by controlling and monitoring vital systems from locations external to the main control room. This capability is consistent with the requirements of 10 CFR Part 50, Appendix R.

By design, the SSS is intended to respond to those low-probability fire and/or sabotage events which render both the control room and automatic safety systems inoperable. Because of the low probability of occurrence of these events, the remedial actions rely on compensatory action, timely repair or return to operability and, if necessary, a justification for continued operation.

Because the SSS performs a redundant fire protection function, compensatory action relies largely on assurance of the operability of fire detection and suppression systems. Table 16.9.7-1 establishes requirements for operability of fire detection and suppression systems.

Both A&D NC Cold Leg Wide Range Temperatures are required for SSS operability. This conclusion is based on NRC Correspondence during issuance of the original operating license.

The Source Range Wide Range Neutron Flux Instrumentation was installed at the SSS Control Panel as part of NRC review of this system in the early 1980s. The indication is not required for SSS operability, based on the NRCs response to Duke dated July 12, 1983.

Controls and power to the pressurizer heater banks are included for SSF events; however, they are not required for SSS operability. NRC Generic Letter 86-10 provides that conclusion.

The Testing Requirements ensure that the SSS systems and components are capable of performing their intended functions. The testing requirements were based largely on SSS Technical Specifications for the Catawba Nuclear Station, which was approved prior to the issuance of the fuel load license for Unit 1 of that plant. Also considered in the formulation of the testing requirements were existing McGuire Technical Specifications, such as those for the 1E Diesel Generators, Refueling Water Storage Tank, Fire Protection & Detection Systems, and other Tech Specs which are related to the safe operation and/or shutdown of the plant.

The required level in the SSS diesel generator fuel storage tank ensures sufficient fuel for 3 ½ days of uninterrupted operation. Per Appendix R requirements, the unit must be in cold shutdown within 72 hours of going to the SSF. The 3 ½ day supply of fuel oil assures this capability.

BASES (continued)

New fuel oil is sampled in accordance with ASTM D4057-81 prior to addition to the storage tanks. In accordance with the tests specified in ASTM D975-81, the sample is verified to have:

1. an API Gravity of within 0.3 degrees at 60°F or a specific gravity of within 0.0016 at 60/60°F, when compared to the supplier's certificate, or an absolute specific gravity at 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89, or an API gravity at 60°F of greater than or equal to 27 degrees but less than or equal to 39 degrees,

2. a kinematic viscosity at 40°C of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes (or a Saybolt Universal Viscosity at 100°F of greater than or equal to 32.6 SUS but less than or equal to 40.1 SUS),

3. a flash point equal to or greater than 125°F, and

4. a clear and bright appearance with proper color when tested in accordance with ASTM D4176-82.

Within 31 days of obtaining the new fuel sample, the other properties specified in Table 1 of ASTM D975-81 are verified to be met when tested in accordance with ASTM D975-81, except that the analysis for sulfur may be performed in accordance with ASTM D1552-90 or ASTM D2622-82.

Although the Standby Makeup Pump is not nuclear safety-related and was not designed according to ASME code requirements, it is tested quarterly to ensure its OPERABILITY. The Standby Makeup Pump (SMP) functions as part of the SSF to provide makeup capacity to the reactor coolant system and cooling flow to the reactor coolant pump seals. The reactor coolant pump seal leak-off flow is temperature dependent (i.e., the higher the temperature the higher the leak-off flow). During normal operation the NCP seals are supplied from the Centrifugal Charging Pump (CCP) drawing from the Volume Control Tank (VCT). During the SSF event, the SMP draws from the Spent Fuel Pool (SFP). During the SSF event there is no SFP cooling, so water injected into the NCP seals will have a higher temperature than during normal operation. The SMP is capable of providing a makeup capacity of at 26 gpm. The revised SLC limit of 20 gpm total accumulative leakage is based on a calculation that was performed by Westinghouse, indicating increased seal leak-off at higher seal water temperatures, to relate the SSF event leakage of 26 gpm at elevated NCP seal temperatures. This more conservative limit will ensure that the SMP will be capable of providing makeup and seal cooling flow equal to or greater than total leakage during the SSF event, increased seal leak-off flow due to heat-up of the SFP, and still provide a margin of safety. As a conservative measure, during normal power operation the total accumulative system leakage (unidentified + identified + seal leak-off flows) shall be limited to 20 gpm. The Testing Requirement concerning the Standby Makeup Pump water supply ensures that an adequate water volume is available to supply the pump continuously for 72 hours.

While the SSS 24 VDC battery charger is isolated for battery surveillance testing, the SSS Diesel Generator remains operable as long as the battery voltage is $\geq$ 24 volts.

BASES (continued)

This selected licensee commitment is part of the McGuire Fire Protection Program and therefore subject to the provisions of McGuire Facility Operating License Conditions C.4 (Unit 1) and C.7 (Unit 2).

REFERENCES

1. McGuire Nuclear Station UFSAR, Chapter 9.5.1
2. McGuire Nuclear Station SER Supplement 2, Chapter 9.5.1 and Appendix D
3. McGuire Nuclear Station SER Supplement 5, Chapter 9.5.1 and Appendix B
4. McGuire Nuclear Station SER Supplement 6, Chapter 9.5.1 and Appendix C
5. McGuire Fire Protection Review, as revised
6. McGuire Fire Protection Safe Shutdown Review
7. IEEE 308-1974, Class 1E Power Systems
8. IEEE 450-1975, Maintenance Testing & Replacement of Large Lead Storage Batteries
9. OP/O/B/6350/04, Standby Shutdown Facility Diesel Operation
10. McGuire Nuclear Station Facility Operating Licenses, Unit 1 License Condition C.(4) and Unit 2 License Condition C.(7)
11. PIP 0-M-99-03926
12. PIP-M-01-3466

16.9 AUXILIARY SYSTEMS

16.9.15 Snubbers

COMMITMENT All snubbers shall be OPERABLE.

----------NOTE----------
Snubbers installed on non-safety systems may be excluded from these requirements provided their failure or the failure of the system on which they are installed would not have an adverse affect on any safety-related system.

APPLICABILITY MODES 1, 2, 3, and 4,
MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES.

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more snubbers inoperable.	A.1 Enter the applicable ACTIONS for any affected system(s) and component(s) that are determined to be inoperable.	Immediately
B. One or more snubbers failed to meet test acceptance criteria.	B.1 Perform an engineering evaluation.	72 hours

TESTING REQUIREMENTS

----------NOTES----------

1. Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program.

2. Snubbers which fail the visual inspection or the functional test acceptance criteria shall be repaired or replaced. Replacement snubbers and snubbers which have repairs which might affect the functional test results shall be tested to meet the functional test criteria before installation in the unit. Mechanical snubbers shall have met the acceptance criteria subsequent to their most recent service, and the freedom-of-motion test must have been performed within 12 months before being installed in the unit.

3. As used herein, type of snubber shall mean snubbers of the same design and manufacturer, irrespective of capacity.

TEST	FREQUENCY
TR 16.9.15.1 ----------NOTES---------- 1. Snubbers are categorized as inaccessible or accessible during reactor operation and may be inspected independently according to the schedule determined by Table 16.9.15-1. 2. The first inspection interval using Table 16.9.15-1 shall be based upon the previous inspection interval as established by the requirements in effect before Technical Specification amendment 126. ---------- Perform a visual inspection for each category of snubber.	In accordance with Table 16.9.15-1
TR 16.9.15.2 ----------NOTE---------- In case of a severe dynamic event, mechanical snubbers in that system which experienced the event shall be inspected during the refueling outage to assure that the mechanical snubbers have freedom of movement and are not frozen up ---------- Perform an inspection to determine if there has been a severe dynamic event for systems which have the potential for a severe dynamic event.	18 months

(continued)

TESTING REQUIREMENTS (continued)

TEST	FREQUENCY
TR 16.9.15.3 ----------NOTE---------- 1. The large bore steam generator hydraulic snubbers shall be treated as a separate population for functional test purposes and are functional tested under Sample Plan 1. 2. If testing continues under Sample Plan 2 to between 100-200 snubbers(or 1-2 weeks) and the accept region has not been reached, then the actual % of population quality (C/N) should be used to prepare for extended or 100% testing. ---------- Perform snubber functional testing on a representative sample of each type of snubber in accordance with one of the following three Sampling Plans: 1. Functionally test 10% of a type of snubber with an additional 10% tested for each functional testing failure, or 2. Functionally test a sample size and determine sample acceptance or continue testing using Figure 16.9.15-1, or 3. Functionally test a representative sample size and determine sample acceptance or rejection using the stated equation.	18 months
TR 16.9.15.4 ----------NOTE---------- The parts replacement shall be documented and the documentation shall be retained for the duration of the unit operating license. ---------- Verify that the service life of hydraulic snubbers has not been exceeded or will not be exceeded prior to the next scheduled surveillance inspection.	18 months

BASES

All snubbers are required OPERABLE to ensure that the structural integrity of the Reactor Coolant System and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on nonsafety-related systems and then only if their failure or failure of the system on which they are installed, would have no adverse effect on any safety-related system. Snubbers are classified and grouped by design and manufacturer but not by size. For example, mechanical snubbers utilizing the same design features of the 2 kip, 10 kip, and 100 kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this specification would be of a different type, as would hydraulic snubbers from either manufacturer.

The snubber requirements of SLC 16.9.15 were originally located in the Technical Specifications. The Nuclear Regulatory Commission (NRC) authorized the use of these requirements, while located in Technical Specifications, as an acceptable alternative to the requirements of the ASME Code, 1989 Edition, Section XI, Article IWF-5000 (References 3, 4). Any revision to these snubber visual inspection and functional test requirements shall consider the basis for the granted relief from the ASME Code requirements and any resulting requirement for NRC review and approval.

Remedial Actions - A.1

Should one or more snubbers be inoperable, OPERABILITY of the affected system(s) and component(s) must be determined and the applicable ACTIONS entered immediately. If there remains a reasonable assurance of OPERABILITY of the affected system(s) or component(s) with the condition of an inoperable snubber(s), then it is not necessary to enter the respective ACTIONS for inoperable system(s) and component(s). A snubber removed from service for any reason cannot be considered OPERABLE since it is not connected to the supported system or component.

Remedial Actions - B.1

Should one or more snubbers fail to meet testing acceptance criteria or be discovered in a condition where failure is apparent, an engineering evaluation is to be performed within 72 hours, as described in "Functional Test Failure Analysis".

The snubber-testing program may remove snubbers from service and restore OPERABILITY of the snubber application by replacement with another like snubber. In this situation, if the removed snubber later fails to meet test acceptance criteria, Condition A is not applicable since the snubber component has no current required function; however, ACTION B.1 would be applicable. During the allowed 72 hours to perform an engineering evaluation or at any other time, when conditions of the affected system(s) and component(s) are determined to no longer support a reasonable assurance of OPERABILITY, applicable ACTIONS are to be entered immediately.

BASES (continued)

Visual Inspections

The visual inspection frequency is based upon maintaining a constant level of snubber protection to systems. Therefore, the required inspection interval varies inversely with the observed snubber failures and is determined by the number of inoperable snubbers found during an 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.

Visual inspections shall verify: (1) that there are no visible indications of damage or impaired OPERABILITY, and (2) attachments to the foundation or supporting structure are secure. Snubbers which appear inoperable as a result of visual inspections shall be classified as unacceptable and may be reclassified acceptable for the purpose of establishing the next visual inspection interval, provided that: (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers irrespective of type that may be generically susceptible; and (2) the affected snubber is functionally tested in the as found condition and determined OPERABLE. A hydraulic snubber found with the fluid port uncovered and all hydraulic snubbers found connected to an inoperable common reservoir shall be classified as unacceptable and may be reclassified acceptable by functionally testing each snubber starting with the piston in the as-found setting, extending the piston rod in the tension direction.

Refueling Outage Inspections

At each refueling, the systems which have the potential for a severe dynamic event, specifically, the main steam system (upstream of the main steam isolation valves) the main steam safety and power-operated relief valves and piping, auxiliary feedwater system, main steam supply to the auxiliary feedwater pump turbine, and the letdown and charging portion of the NV system shall be inspected to determine if there has been a severe dynamic event.

In case of a severe dynamic event, mechanical snubbers in that system which experienced the event shall be inspected during the refueling outage to assure that the mechanical snubbers have freedom of movement and are not frozen up. The inspection shall consist of verifying freedom of motion using one of the following: (1) manually induced snubber movement; (2) evaluation of in-place snubber piston setting; (3) stroking the mechanical snubber through its full range of travel. If one or more mechanical snubbers are found to be frozen up during this inspection, those snubbers shall be replaced or repaired before returning to power. The requirements of TR 16.9.15.1 are independent of the requirements of this item.

BASES (continued)

Functional Testing

During the first refueling shutdown and at least once per refueling thereafter, a representative sample of snubbers shall be tested using one of the following sample plans. The large bore steam generator hydraulic snubbers shall be treated as a separate population for functional test purposes and are functional tested under Sample Plan 1. A 10% random sample from previously untested snubbers shall be tested at least once per refueling outage until the entire population has been tested. This testing cycle shall then begin anew. For each large bore steam generator hydraulic snubber that does not meet the functional test acceptance criteria, at least 10% of the remaining population of untested snubbers for that testing cycle shall be tested. The sample plan shall be selected prior to the test period and cannot be changed during the test period. The NRC shall be notified of the sample plan selected prior to the test period.

1. At least 10% of the required snubbers shall be functionally tested either in place or in a bench test. For each snubber that does not meet the functional test acceptance criteria, an additional 10% of the snubbers shall be functionally tested until no more failures are found or until all snubbers have been functionally tested; or

2. A representative sample of the required snubbers required shall be functionally tested in accordance with Figure16.9.15-1. "C" is the total number of snubbers found not meeting the acceptance requirements (failures). The cumulative number of snubbers tested is denoted by "N." Test results shall be plotted sequentially in the order of sample assignment (i.e., each snubber shall be plotted by its order in the random sample assignments, not by the order of testing). If at any time the point plotted falls in the "Accept region, testing of snubbers may be terminated. When the point plotted lies in the "Continue Testing" region, additional snubbers shall be tested until the point falls in the 'Accept" region, or all the required snubbers have been tested. Testing equipment failure during functional testing may invalidate that day's testing and allow that day's testing to resume anew at a later time, providing all snubbers tested with the failed equipment during the day of equipment failure are retested; or

3. An initial representative sample of fifty-five (55) snubbers shall be functionally tested. For each snubber which does not meet the functional test acceptance criteria, another sample of at least one-half the size of the initial sample shall be tested until the total number tested is equal to the initial sample size multiplied by the factor, 1 + C/2, where "C" is the number of snubbers found which do not meet the functional test acceptance criteria. This can be plotted using an "Accept" line which follows the equation N = 55(1 + C/2). Each snubber should be plotted as soon as it is tested. If the point plotted falls on or below the "Accept" line, testing may be discontinued, If the point plotted falls above the "Accept" line, testing must continue unless all snubbers have been tested.

The representative samples for the functional test sample plans shall be randomly selected from the required snubbers and reviewed before beginning the testing. The review shall ensure as far as practical that they are representative of the various configurations, operating environments, range of sizes, and capacities. Snubbers placed in the same

BASES (continued)

locations as snubbers which failed the previous functional test shall be retested at the time of the next functional test but shall not be included in the sample plan. If during the functional testing, additional sampling is required due to failure of only one type of snubber, the functional testing results shall be reviewed at that time to determine if additional samples should be limited to the type of snubber which has failed the functional testing.

Figure 16.9.15-1 was developed using "Wald's Sequential Probability Ratio Plan" as described in "Quality Control and Industrial Statistics" by Acheson J. Duncan.

Permanent or other exemptions from the surveillance program for individual snubbers may be granted by the NRC if a justifiable basis for exemption is presented and, if applicable, snubber life destructive testing was performed to qualify the snubber for the applicable design conditions at either the completion of their fabrication or at a subsequent date.

Functional Test Acceptance Criteria

The snubber functional test shall verify that:

1. Activation (restraining action) is achieved within the specified range in both tension and compression, except that inertia dependent, acceleration limiting mechanical snubbers may be tested to verify only that activation takes place in both directions of travel;

2. Snubber bleed, or release rate where required, is present in both tension and compression, within the specified range;

3. Where required, the force required to initiate or maintain motion of the snubber is within the specified range in both directions of travel; and

4. For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement.

Testing methods may be used to measure parameters indirectly or parameters other than those specified if those results can be correlated to the specified parameters through established methods.

Functional Test Failure Analysis

An engineering evaluation shall be made of each failure to meet the functional test acceptance criteria to determine the cause of the failure. The results of this evaluation shall be used, if applicable, in selecting snubbers to be tested in an effort to determine the OPERABILITY of other snubbers irrespective of type which may be subject to the same failure mode.

For the snubbers found inoperable, an engineering evaluation shall be performed on the components to which the inoperable snubbers are attached. The purpose of this engineering evaluation shall be to determine if the components to which the inoperable

BASES (continued)

snubbers are attached were adversely affected by the inoperability of the snubbers in order to ensure that the component remains capable of meeting the designed service.

If any snubber selected for functional testing either fails to activate 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 type subject to the same defect shall be evaluated in a manner to ensure their OPERABILITY. This testing requirement shall be independent of the requirements stated in TR 16.9.15.3 for snubbers not meeting the functional acceptance criteria.

Service Life

The expected service life for the various seals, seal materials, and applications shall be determined and established based on engineering information and the seals shall be replaced so that the expected service life will not be exceeded during a period when the snubber is required to be OPERABLE.

The service life of a snubber is established 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 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. The requirements for the maintenance of records and the snubber service life review are not intended to affect plant operation.

REFERENCES

1. Letter from M. S. Tuckman to NRC, Licensing Position Regarding Snubbers, May 20, 1999.
2. Letter from NRC to H.B. Barron, Licensing Position Regarding Snubbers, July 9, 1999.
3. Letter from H.B. Barron to NRC, Request for Relief 97-005, Snubber Inspections - Performance and Schedule, December 17, 1997.
4. Letter from NRC to H.B. Barron, Relief Request for Snubber Visual examination and Functional Testing, May 27, 1998.
5. Letter from H.B. Barron to NRC, Request for Relief 01-004, June 1, 2001.
6. Letter from NRC to M.S Tuckman, Safety Evaluation of Relief Request No. 01-004, Alternative for Snubber Examinations, January 30, 2002.

TABLE 16.9.15-1

SNUBBER VISUAL INSPECTION INTERVAL

Population or Category (Notes 1, 2)	NUMBER OF UNACCEPTABLE SNUBBERS		
	Column A Extended Interval (Notes 3, 6)	Column A Repeat Interval (Notes 4, 6)	Column C Reduced Interval (Notes 5, 6)
1	0	0	1
80	0	0	2
100	0	1	4
150	0	3	8
200	2	5	13
300	5	12	25
400	8	18	36
500	12	24	48
750	20	40	78
≥1000	29	56	109

NOTES:

1. The next visual inspection interval for a snubber population or category size shall be determined based upon the previous inspection interval and the number of unacceptable snubbers found during that interval. Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. The categories may be examined separately or jointly. However, the licensee must make and document that decision before any inspection and shall use that decision as the basis upon which to determine the next inspection interval for that category.

2. Interpolation between population or category size and the number of unacceptable snubbers is permissible. Use next lower integer for the value of the limit for Columns A, B, or C if that integer includes a fractional value of unacceptable snubbers as described by interpolation.

3. If the number of unacceptable snubbers is equal to or less than the number in Column A, the next inspection interval may be twice the previous interval but not greater than 48 months.

4. If the number of unacceptable snubbers is equal to or less than the number in Column B but greater than the number in Column A, the next inspection shall be the same as the previous interval.

5. If the number of unacceptable snubbers is equal to or greater than the number in Column C, the next inspection interval shall be two-thirds of the previous interval. However, if the number of unacceptable snubbers is less than the number in Column C but greater than the number in Column B, the next interval shall be reduced proportionally by interpolation, that is, the previous interval shall be reduced by a factor that is one third of the ratio of the difference between the number of unacceptable snubbers found during the previous interval and the number in Column B to the difference in the numbers in Columns B and C.

6. The provisions of SLC 16.2.7 are applicable for all inspection intervals up to and including 48 months.

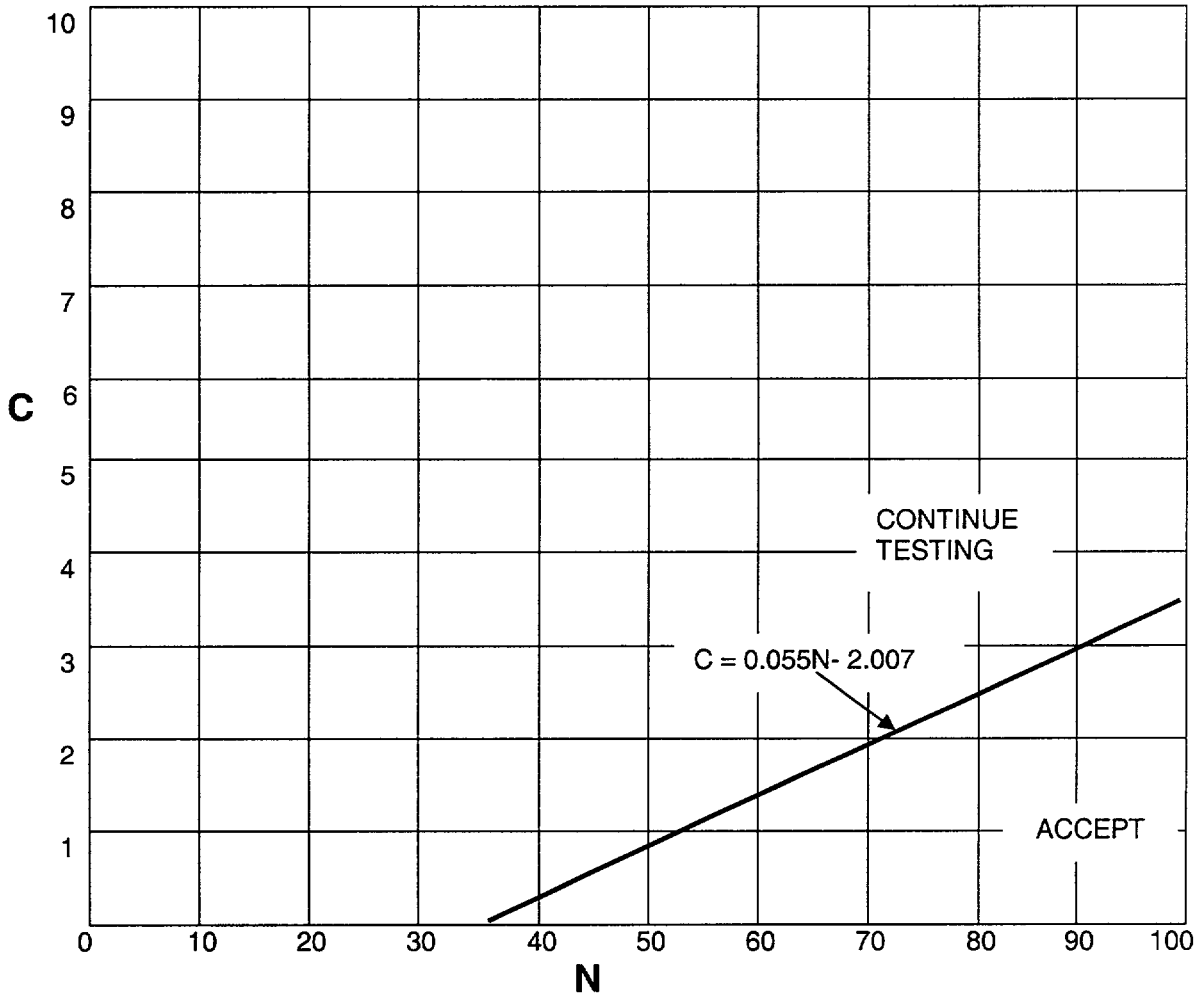

FIGURE 16.9.15-1

SAMPLE PLAN 2 FOR SNUBBER FUNCTIONAL TEST