Paragraph 4.7.9.a. Revise the circled portion as follows:

The first inservice visual inspection of snubbers shall be performed after 4 months of comencing POWER OPERATION but before the end of the first refueling outage, and shall include all snubbers listed in Tables 3.7.9-1 and 3.7.9-2. Subsequent visual inspections shall be performed in accordance with the following schedule:

Bases:

The purpose of the first visual inspection should be to correct any problems with the snubbers. By allowing the inspections to be completed by the end of the first refueling outage provides an adequate time frame to correct all Shubber problems within normal shutdowns, without comprimising the safety of the plant. Subsequent visual inspections could then be performed in accordance with the table.

4.7.9.a Revise the table as follows:

No. Inoperable Snubbers per Inspection Period	Subsequent Visual Inspection Period ##
0, 1, 2, 3, 4, 5, 6, 7	18 months ± 25%
8, 9, 10, 11	12 months ± 25%
12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23	6 months ± 25%
24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	124 days ± 25%
35 thru 69	62 days ± 25%
70 or more	31 days ± 25%

Bases:

The Bases Section states that the visual inspection frequency is based on a constant level of snubber protection, but does not specify an exact confidence level. LaSalle estimated the number of safety related snubbers in each of the two groups (accessible and inaccessible), to be 600. The above table is the result of a calculation using a Poisson Probability Distribution based on a 95% confidence level that 98% of the snubbers would be operable, for a population of 600 snubbers. It is felt that this confidence level is more than adequate in assuring that the snubbers are operable, and is more conservative than the desired confidence level for the functional test, that being a 95% confidence level that 90 to 100% of the snubbers

4.7.9.a Bases (cont.)

are operable

4.7.9.a Delete the circled portion in the footnote.

Bases:

Visual inspections are conducted on 100% of the snubbers, at a frequency specified in the Table. For any number of failures, the next inspection is conducted on all snubbers at the specified time interval. The 100% inspection would adequately portray if the problem had been corrected for all snubbers. Allowing the intervals to be lengthened by more than one step at a time would not jeopardize the safety, due to the fact that 100% are inspected. It is believed that an adequate safety margin is achieved by allowing the inspection intervals to be determined by the Table without the additional requirement.

3/4.7.9 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.9 All snubbers listed in Tables 3.7.9-1 and 3.7.9-2 shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3, and OPERATIONAL CONDITIONS 4 and 5 for snubbers located on systems required OPERABLE in those OPERATIONAL CONDITIONS.

ACTION:

With one or more snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.9.c on the supported component or declare the supported system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.9 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5.

a. Visual Inspection

The first inservice visual inspection of snubbers shall be performed after 4 months but within 10 months of commencing POWER OPERATION and shall include all snubbers listed in Tables 3.7.9-1 and 3.7.9-2. If less than two snubbers are found inoperable during the first inservice visual inspection, the second inservice visual inspection shall be performed 12 months ± 25% from the date of the first inspection. Otherwise, subsequent visual inspections shall be performed in accordance with the following schedule:

No. Inoperable Snubbers per Inspection Period	Subsequent Visual Inspection Period*#
0	18 months ± 25%
1	12 months ± 25%
2	6 months ± 25%
3, 4	124 days ± 25%
5, 6, 7	62 days ± 25%
8 or more	31 days ± 25%

The snubbers may be categorized into two groups: Those accessible and those inaccessible during reactor operation. Each group may be inspected independently in accordance with the above schedule.

*The inspection interval shall not be lengthened more than one step at a time.
#The provisions of Specification 4.0.2 are not applicable.

4.7.9.b. Revise the circled portion as follows:

if it is believed that the snubber may have been damaged to the extent that it may not be able to perform its function, then the affected snubber is functionally tested in the as found condition and determined operable per Surveillance Requirement 4.7.9.e. If it is determined that by performing the corrective action the snubber would appear to be able to perform its function, which would usually be the case if the reason for rejection was limited to the snubber attachments or supporting structure, then functional testing is not required to determine that the snubber is operable providing that such snubbers are included in the representative sample of snubbers to be functionally tested the next time such testing is required as described in Surveillance Requirement 4.7.9.c.

Bases:

Though there are cases when a functional test should be performed to verify operability, there are cases when it should not be required. For example, if a snubber failed a visual inspection because of a loose attachment bolt, the problem could easily be

4.7.9.b. Bases (cont.)

corrected by simply tightening the bolt. The corrective action would restore the snubber to an operable status. There would be no reason to expect further damage from this type of problem, it would not be necessary to perform all the measurements of 4.7.9.e. Further assurance is provided by including such snubbers in the representative sample when the functional testing comes due as described in Surveillance Requirement 4.7.9 C.

4.7.9.c. Revise the circled portion pertaining to mechanical snubbers as follows:

For mechanical snubbers, a representative sample shall be functionally tested in accordance with Figure 4.7.1. On Figure 4.7.1, "C" is the total number of mechanical snubbers which are found to not meet the acceptance criteria. The cumulative number of snubbers tested is denoted by "N". As testing continues, the values of "N" and "C" are plotted on Figure 4.7.1. If at any time the point plotted falls in the "Accept" region, the testing shall 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 mechanical snubbers in Table 3.7.9-2 have been tested. However, if at any time during the testing after at least 55 snubbers have been tested, the snubber failures can be attributed to a particular size of snubber, or application, or operating environment, or linked to a particular occurence such as water hammer, additional snubber testing may be limited to such generically susceptable snubbers. Such testing would continue until the points plotted on Figure 4.7.1 fall in the "Accept" region or until all generically susceptable snubbers of Table 3.7.9-2 have been tested.

4.7.9.c
Bases:

The alternate sampling plan provides an equivalent confidence level as that proposed in the Bases section of this Specification. Also, more benefits can be derived from functional testing if the cause of failure can be identified. This enables more effective corrective action. In requiring that at least 55 snubbers be tested before utilizing a generic approach, confidence would be provided that there is not a problem with the snubbers outside the generic problem group. By limiting additional testing to a group generically susceptable, increased reliability is provided without jeopardizing the balance of the snubbers which do function properly.

SURVEILLANCE REQUIREMENTS (Continued)

b. Visual Inspection Acceptance Criteria

Visual inspections shall verify (1) that there are no visible indications of damage or impaired OPERABILITY, (2) that attachments to the foundation or supporting structure are secure, and (3) in those locations where snubber movement can be manually induced without disconnecting the snubber, that the snubber has freedom of movement and is not frozen up. Snubbers which appear inoperable as a result of these visual inspections may be determined OPERABLE for the purpose of establishing the next visual inspection interval, providing that (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers that may be generically susceptible, and (2) the affected snubber is functionally tested in the as found condition and determined OPERABLE per Surveillance Requirements 4.7.9.d and 4.7.9.e, as applicable. However, when a fluid part of a hydraulic snubber is found to be uncovered, the snubber shall be declared inoperable and cannot be determined OPERABLE by functional testing for the purpose of establishing the next visual inspection interval. All snubbers connected to an inoperable common hydraulic fluid reservoir shall be counted as inoperable snubbers.

c. Functional Tests

During the first refueling shutdown and at least once per 18 months thereafter during shutdown, a representative sample of snubbers shall be functionally tested.

For hydraulic snubbers, a representative sample of at least 10% of the total of hydraulic snubbers listed in Table 3.7.9-1 shall be functionally tested either in place or in a bench test. For each hydraulic snubber that does not meet the functional test acceptance criteria of Surveillance Requirement 4.7.9.d or 4.7.9.e, an additional 10% of the hydraulic snubbers shall be functionally tested.

For mechanical snubbers, a representative sample of that number of mechanical snubbers listed in Table 3.7.9-2 which follows the expression $35\ (1 + \frac{c}{2})$, where c(*) is the allowable number of mechanical snubbers not meeting the

(*) The value c will be arbitrarily chosen by the applicant and incorporated into the expressions for the representative sample and for the resample (prior to the issuance of the Technical Specifications). The expressions are intended for use in plants with larger numbers of safety-related snubbers (>500) and provide a confidence level of approximately 95% that 90% to 100% of the snubbers in the plant will be OPERABLE within acceptable limits. That is, the confidence level will be provided no matter what value is chosen for c. It is advised, however, that discretion be used when initially choosing the value for c because the lower the value of c (the lower the amount of snubbers in the representative sample), the higher the amount of snubbers required in the re-sample will be. To illustrate: If c = 2 and 3 snubbers are found not to meet the functional test acceptance criteria, there will be 70 snubbers in the representative sample and 31 snubbers required for testing in the re-sample; If c = 2 and 4 snubbers fail the functional test, there will be 70 snubbers in the representative sample and 62 snubbers required for testing in the re-sample; If c = 0 and 1 snubber fails the functional test, there will be 35 snubbers in the representative sample and 140 snubbers required for testing in the re-sample; If c = 0 and 2 snubbers fail the functions test, there will be 35 snubbers in the representative sample and 280 snubbers required for testing in the re-sample.

4.7.9.c. Delete the circled portion pertaining to the sample

Bases:

The intention of snubber functional testing, as described in the body of the Tech Spec and in the Bases, is to provide a confidence level of 95% that 90% to 100% of the snubbers in the plant are operable, and that it can be provided by testing the representative sample. In requiring that 25% of the snubbers be from the three described categories, the representative sample is being biased and is no longer a representative sample. Without an accurate representative sample, it cannot be assured that the required confidence level, which is the objective, is being maintained throughout the plant. Such biasing does not accurately represent the balance of plant snubbers, from a statistics standpoint. The desired objectives are not maintained for all snubbers. To enable a truly representative sample to be selected, the requirement stated in this paragraph should be deleted.

SURVEILLANCE REQUIREMENTS (Continued)

Functional Tests (continued)

acceptance criteria selected by the operator, shall be functionally tested either in-place or in a bench test. For each number of mechanical snubbers above c which does not meet the functional test acceptance criteria of Specifications 4.7.9.d. or 4.7.9.e, an additional sample selected according to the expression $35\ (1 + \frac{c}{2})\ (\frac{2}{c+1})^2\ (a - c)$ shall be functionally tested, where a is the total number of mechanical snubbers found inoperable during the functional testing of the representative sample.

Functional testing shall continue according to the expression $b\ [\ 35\ (1 + \frac{c}{2})\ (\frac{2}{c+1})^2]$ where b is the number of mechanical snubbers found inoperable in the previous re-sample, until no additional inoperable mechanical snubbers are found within a sample or until all mechanical snubbers in Table 3.7.9-1 and 3.7.9-2 have been functionally tested.

The representative sample selected for functional testing shall include the various configurations, operating environments and the range of size and capacity of hydraulic and mechanical snubbers. At least 25% of the snubbers in the representative samples shall include snubbers from the following three categories:

1. The first snubber away from each reactor vessel nozzle.

2. Each snubber within 5 feet of heavy equipment (valve, pump, turbine, motor, etc.).

3. Each snubber within 10 feet of the discharge from a safety relief valve.

Snubbers identified in Tables 3.7.9-1 and 3.7.9-2 as "Especially Difficult to Remove" or in "High Radiation Zones During Shutdown" shall also be included in the representative sample.* Tables 3.7.9-1 and 3.7.9-2 may be used jointly or separately as the basis for the sampling plan.

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

*Permanent or other exemptions from functional testing for individual snubbers in these categories may be granted by the Commission only if a justifiable basis for exemption is presented and/or snubber life destructive testing was performed to qualify snubber operability for all design conditions at either the completion of their fabrication or at a subsequent date.

4.7.9.e. Revise the circled portion as follows:

1. For inertia dependant acceleration limiting mechanical snubbers whose sensing mechanism is not in line with the primary load path, the force required to initiate or maintain motion of the snubber is within the specified range in both directions of travel. For other types of snubbers other than those described above it shall also be verified that the breakaway friction drag force shall not have increased more than 50% since the last surveillance test.

2. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression, except that inertia dependant, acceleration limiting mechanical snubbers whose sensing mechanism is not in line with the primary load path, may be tested to verify only that activation takes place in both directions of travel.

3. Snubber release rate, where required, is present in both tension and compression, within the specified range. For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand

load without displacement shall be verified.

Bases:

Conversations have been held with the vendor of inertia dependant acceleration limiting mechanical snubbers whose sensing mechanism is not in line with the primary load path. The described testing is in accordance with recommendations from the vendors Application Engineers. It is felt that the testing described above would adequately portray any problems in the snubber's ability to perform its function.

SURVEILLANCE REQUIREMENTS (Continued)

Functional Tests (Continued)

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.

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.

For any 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 snubber(s) in order to ensure that the supported component remains capable of meeting the designed service.

d. Hydraulic Snubbers Functional Test Acceptance Criteria

The hydraulic snubber functional test shall verify that:

1. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.

2. Snubber bleed, or release rate, where required, is within the specified range in compression or tension. For snubbers specifically required to not displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

e. Mechanical Snubbers Functional Test Acceptance Criteria

The mechanical snubber functional test shall verify that:

1. The force that initiates free movement of the snubber rod in either tension or compression is less than the specified maximum breakaway friction drag force. Breakaway friction drag force shall not have increased more than 50% since the last surveillance test.

2. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.

3. Snubber release rate, where required, is within the specified range in compression or tension. For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

4.7.9.f. Paragraph 1 Revise the circled portion as follows:

A record of the service life of each snubber shall be maintained in accordance with existing company maintenance history tracking programs.

Bases:

The station already has adequate maintenance history tracking programs for other equipment. Having snubbers within the same program as other equipment provides a more reliable tracking method.

4.7.9.f. Paragraph 2 Add the following at the end of the paragraph

However, inertia dependant acceleration limiting mechanical snubbers whose sensing mechanism is not in line with the primary load path, are intended to last the life of the plant and do not have a specified service life. The above described review requirements are not required for these types of snubbers.

Bases:

Inertia dependant acceleration limiting mechanical snubbers whose sensing mechanism is not in line with the primary load path, do not have a specified service life. Presently, the service life is intended to be 40 years or more.

SURVEILLANCE REQUIREMENTS (Continued)

f. Snubber Service Life Monitoring

A record of the service life of each snubber, the date at which the designated service life commences and the installation and maintenance records on which the designated service life is based shall be maintained as required by Specification 6.5.B.16.

Concurrent with the first inservice visual inspection and at least once per 18 months thereafter, the installation and maintenance records for each snubber listed in Tables 3.7.9-1 and 3.7.9-2 shall be reviewed to verify that the indicated service life has not been exceeded or will not be exceeded prior to the next scheduled snubber service life review. If the indicated service life will be exceeded prior to the next scheduled snubber service life review, the snubber service life shall be reevaluated or the snubber shall be replaced or reconditioned so as to extend its service life beyond the date of the next scheduled service life review. This reevaluation, replacement or reconditioning shall be indicated in the records.

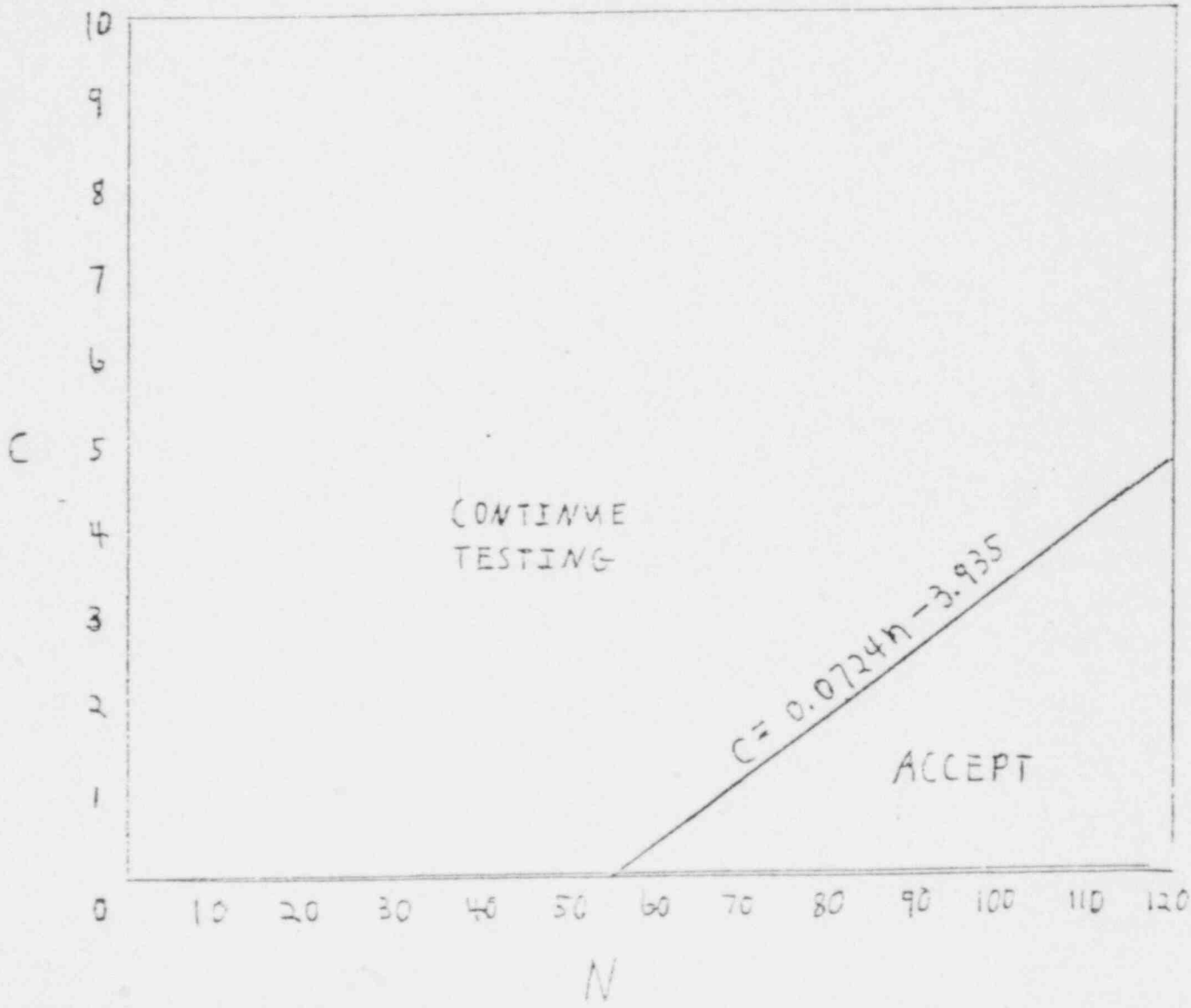

FIGURE 4.7.1 SAMPLING PLAN FOR SNUBBER FUNCTIONAL TEST